

AXONYX INC
Form 424B3
August 28, 2006

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MEETINGS OF STOCKHOLDERS
YOUR VOTE IS VERY IMPORTANT

To the Stockholders of Axonyx Inc. and TorreyPines Therapeutics, Inc.:

Axonyx Inc., which we refer to as Axonyx, and TorreyPines Therapeutics, Inc., which we refer to as TorreyPines, have entered into a merger agreement pursuant to which a wholly owned subsidiary of Axonyx will merge with and into TorreyPines, with TorreyPines continuing as a wholly owned subsidiary of Axonyx. TorreyPines and Axonyx believe that the merger will result in a biopharmaceutical company with discovery and development capabilities across a spectrum of central nervous system, or CNS, diseases and disorders and a pipeline of clinical and preclinical stage product candidates designed to address significant and underserved or unmet medical needs.

At the effective time of the merger, each share of TorreyPines common stock and TorreyPines preferred stock will be converted into the right to receive 1.299 shares of Axonyx common stock, subject to adjustment to account for the effect of a reverse stock split of Axonyx common stock to be implemented prior to the consummation of the merger and to account for the occurrence of certain events discussed in the joint proxy statement/prospectus. Holders of TorreyPines preferred stock will also receive warrants to purchase shares of Axonyx common stock, referred to as merger warrants. Axonyx stockholders will continue to own their existing shares of Axonyx common stock. Immediately after the merger, TorreyPines securityholders will own approximately 58% of the fully-diluted shares of the combined company (excluding the merger warrants), with Axonyx securityholders holding approximately 42% of the fully-diluted shares of the combined company. If the merger warrants were exercised as of the closing of the merger, when combined with the shares of Axonyx common stock being issued in the merger, TorreyPines securityholders would own approximately 62% of the fully-diluted shares of the combined company, with existing Axonyx securityholders holding approximately 38% of the fully-diluted shares of the combined company.

Shares of Axonyx common stock are currently listed on the NASDAQ Capital Market under the symbol "AXYX". Prior to consummation of the merger, Axonyx intends to file an initial listing application with the NASDAQ Global Market pursuant to NASDAQ's "reverse merger" rules. After completion of the merger, Axonyx will be renamed "TorreyPines Therapeutics, Inc." and expects to trade on the NASDAQ Global Market under the symbol "TPTX". On August 25, 2006, the last trading day before the date of this joint proxy statement/prospectus, the closing sale price of Axonyx common stock was \$0.87 per share.

Axonyx is holding an annual meeting of stockholders and TorreyPines is holding a special meeting of stockholders in order to obtain the stockholder approvals necessary to complete the merger and related matters. At the Axonyx annual meeting, which will be held at 2:00 p.m., local time, on September 28, 2006 at the offices of Eisner LLP, 750 Third Avenue, 16th Floor, New York, NY 10017, unless postponed or adjourned to a later date, Axonyx will ask its stockholders to, among other things, approve the issuance of Axonyx common stock and the merger warrants pursuant to the merger agreement, as well as the resulting change in control, and approve an amendment to Axonyx's articles of incorporation effecting a reverse stock split of Axonyx common stock, which is referred to as the reverse stock split, as described in the accompanying joint proxy statement/prospectus.

At the TorreyPines special meeting, which will be held at 9:00 a.m., local time, on September 28, 2006 at the offices of Cooley Godward LLP, 4401 Eastgate Mall, San Diego, CA 92121, unless postponed or adjourned to a later date, TorreyPines will ask its stockholders to, among other things, adopt the merger agreement.

After careful consideration, the Axonyx and TorreyPines boards of directors have unanimously approved the merger agreement and the respective proposals referred to above, and each of the Axonyx and TorreyPines boards of directors has determined that it is advisable to enter into the merger. Each of the board of directors of Axonyx and TorreyPines recommends that its respective stockholders vote "FOR" the respective proposals described in the accompanying joint proxy statement/prospectus.

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More information about Axonyx, TorreyPines and the proposed transaction is contained in this joint proxy statement/prospectus. **Axonyx and TorreyPines urge you to read the accompanying joint proxy statement/prospectus carefully and in its entirety. IN PARTICULAR, YOU SHOULD CAREFULLY CONSIDER THE MATTERS DISCUSSED UNDER "RISK FACTORS" BEGINNING ON PAGE 22.**

Axonyx and TorreyPines are excited about the opportunities the merger brings to both Axonyx and TorreyPines stockholders, and we thank you for your consideration and continued support.

Gosse B. Bruinsma, M.D.

Neil M. Kurtz, M.D.

President and Chief Executive Officer

President and Chief Executive Officer

AXONYX INC.

TORREYPINES THERAPEUTICS, INC.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this joint proxy statement/prospectus. Any representation to the contrary is a criminal offense.

The accompanying joint proxy statement/prospectus is dated August 28, 2006, and is first being mailed to Axonyx and TorreyPines stockholders on or about August 30, 2006.

AXONYX INC.
500 Seventh Avenue, 10th Floor
New York, New York 10018
(212) 645-7704

NOTICE OF ANNUAL MEETING OF STOCKHOLDERS
TO BE HELD ON SEPTEMBER 28, 2006

Dear Stockholders of Axonyx:

On behalf of the board of directors of Axonyx Inc., a Nevada corporation, we are pleased to deliver this joint proxy statement/prospectus for the proposed merger between Axonyx and TorreyPines Therapeutics, Inc., a Delaware corporation, pursuant to which Autobahn Acquisition, Inc., a wholly owned subsidiary of Axonyx, will merge with and into TorreyPines, which will survive as a wholly owned subsidiary of Axonyx. The annual meeting of stockholders of Axonyx will be held on September 28, 2006 at 2:00 p.m., local time, at the offices of Eisner LLP, 750 Third Avenue, 16th Floor, New York, NY 10017, for the following purposes:

1. To consider and vote upon a proposal to approve the issuance of Axonyx common stock and warrants to purchase Axonyx common stock and the resulting change in control of Axonyx pursuant to the Agreement and Plan of Merger and Reorganization, dated as of June 7, 2006, by and among Axonyx, Autobahn Acquisition, Inc. and TorreyPines, a copy of which is attached as *Annex A* to the accompanying joint proxy statement/prospectus.
2. To approve an amendment to Axonyx's articles of incorporation effecting the reverse stock split, as described in the accompanying joint proxy statement/prospectus.
3. To approve an amendment to Axonyx's articles of incorporation to change the name "Axonyx Inc." to "TorreyPines Therapeutics, Inc."
4. To approve a change of Axonyx's state of incorporation from Nevada to Delaware, as described in the accompanying joint proxy statement/prospectus.
5. To approve the adoption, contingent upon and effective as of immediately following the effective time of the merger, of the Axonyx Inc. 2006 Equity Incentive Plan, as described in the accompanying joint proxy statement/prospectus.
6. To elect the six directors nominated by the nominating/governance committee of Axonyx's board of directors and named herein; provided, however, that if the merger is completed, it is anticipated that the Axonyx board of directors will consist of the ten people identified in the accompanying joint proxy statement/prospectus, four of whom are listed nominees.
7. To consider and vote upon an adjournment of the Axonyx annual meeting, if necessary, to solicit additional proxies if there are not sufficient votes in favor of Axonyx Proposal Nos. 1, 2, 3 and 4.
8. To transact such other business as may properly come before the Axonyx annual meeting or any adjournment or postponement thereof.

The board of directors of Axonyx has fixed August 14, 2006 as the record date for the determination of stockholders entitled to notice of, and to vote at, the Axonyx annual meeting and any adjournment or postponement thereof. Only holders of record of shares of Axonyx common stock at the close of business on the record date are entitled to notice of, and to vote at, the Axonyx annual meeting. At the close of business on the record date, Axonyx had 53,680,721 shares of common stock outstanding and entitled to vote.

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Your vote is important. The affirmative vote of the holders of a majority of the shares of Axonyx common stock having voting power present in person or represented by proxy at the Axonyx annual meeting is required for approval of Axonyx Proposal Nos. 1, 5 and 7. The affirmative vote of the holders of a majority of the shares of Axonyx common stock having voting power outstanding on the record date for the Axonyx annual meeting is required for approval of Axonyx Proposal Nos. 2, 3 and 4. For the election of directors (Proposal No. 6), the six nominees receiving the most "For" votes from the shares having voting power present in person or represented by proxy will be elected.

Under Nevada law, Axonyx stockholders are entitled to dissenters' rights in connection with the proposed reincorporation of Axonyx and Axonyx stockholders who would receive in connection with the reverse stock split cash in lieu of a fractional share of Axonyx stock will be entitled to certain dissenters' rights in connection with the proposed reverse stock split. For more information please see the sections entitled "Axonyx Proposal No. 2: Approval of the Amendment to Axonyx's Articles of Incorporation Effecting the Reverse Stock Split Dissenters' Rights" and "Axonyx Proposal No. 4: Approval of Change of Axonyx's State of Incorporation from Nevada to Delaware Dissenters' Rights" in the accompanying joint proxy statement/prospectus.

Even if you plan to attend the Axonyx annual meeting in person, Axonyx requests that you sign and return the enclosed proxy to ensure that your shares will be represented at the Axonyx annual meeting if you are unable to attend.

By Order of Axonyx's Board of Directors,

Gosse B. Bruinsma, M.D.
President and Chief Executive Officer
New York, New York
August 28, 2006

THE AXONYX BOARD OF DIRECTORS HAS DETERMINED AND BELIEVES THAT EACH OF THE PROPOSALS OUTLINED ABOVE IS ADVISABLE TO, AND IN THE BEST INTERESTS OF, AXONYX AND ITS STOCKHOLDERS AND HAS APPROVED EACH SUCH PROPOSAL. THE AXONYX BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT AXONYX STOCKHOLDERS VOTE "FOR" EACH SUCH PROPOSAL AND "FOR" ALL SIX NOMINEES.

TORREYPINES THERAPEUTICS, INC.
11085 North Torrey Pines Road
Suite 300
La Jolla, CA 92037
(858) 623-5665

NOTICE OF SPECIAL MEETING OF STOCKHOLDERS
TO BE HELD ON SEPTEMBER 28, 2006

To the Stockholders of TorreyPines Therapeutics, Inc.:

A special meeting of stockholders of TorreyPines Therapeutics, Inc. will be held at 9:00 a.m., local time, on September 28, 2006 at the offices of Cooley Godward LLP, 4401 Eastgate Mall, San Diego, CA 92121, for the following purposes:

1. To consider and vote upon a proposal to adopt the Agreement and Plan of Merger and Reorganization, dated as of June 7, 2006, by and among Axonyx Inc., Autobahn Acquisition, Inc., a wholly owned subsidiary of Axonyx, and TorreyPines, a copy of which is attached as *Annex A* to the accompanying joint proxy statement/prospectus.
2. To approve an amendment to TorreyPines' certificate of incorporation to change the name "TorreyPines Therapeutics, Inc." to "TPTX, Inc.", a copy of which is attached as *Annex I* to the accompanying joint proxy statement/prospectus.
3. To approve a proposal to adjourn the TorreyPines special meeting, if necessary, to solicit additional proxies in favor of the adoption of the merger agreement.
4. To transact such other business as may properly be brought before the TorreyPines special meeting and any adjournment or postponement thereof.

The TorreyPines board of directors has fixed August 14, 2006 as the record date for the determination of stockholders entitled to notice of, and to vote at, the TorreyPines special meeting and any adjournment or postponement thereof. Only holders of record of shares of TorreyPines common stock and holders of record of shares of TorreyPines preferred stock at the close of business on the record date are entitled to notice of, and to vote at, the TorreyPines special meeting. At the close of business on the record date, TorreyPines had (a) 3,456,052 shares of common stock outstanding and entitled to vote and (b) 48,994,673 shares of preferred stock outstanding and entitled to vote, including 8,794,800 shares of Series A preferred stock outstanding and entitled to vote, 12,736,828 shares of Series B preferred stock outstanding and entitled to vote, 23,220,199 shares of Series C preferred stock outstanding and entitled to vote and 4,242,846 shares of Series C-2 preferred stock outstanding and entitled to vote.

The TorreyPines board of directors has reviewed and considered the terms and conditions of the proposed merger. Based on its review, the TorreyPines board of directors has unanimously approved the merger and the merger agreement and determined that the merger agreement and the transactions contemplated by the merger agreement, including the merger, are advisable and fair to, and in the best interests of, TorreyPines and its stockholders. **Accordingly, the TorreyPines board of directors unanimously recommends that you vote "FOR" the adoption of the merger agreement. In addition, the TorreyPines board of directors unanimously recommends that you vote "FOR" the name change from TorreyPines Therapeutics to TPTX, Inc. and "FOR" the adjournment of the TorreyPines special meeting, if necessary, to solicit additional proxies in favor of the adoption of the merger agreement.**

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TorreyPines cannot complete the merger unless the merger agreement is adopted by the affirmative vote of (a) the holders of a majority of the shares of TorreyPines common stock and TorreyPines preferred stock outstanding on the record date and entitled to vote at the TorreyPines special meeting, voting as a single class and on an as-converted basis, and (b) the holders of two-thirds of the shares of TorreyPines preferred stock outstanding on the record date and entitled to vote at the TorreyPines special meeting, voting as a single class and on an as-converted basis. The accompanying joint proxy statement/prospectus describes the proposed merger and the actions to be taken in connection with the merger and provides additional information about the parties involved. Please give this information your careful attention.

Under the Delaware General Corporation Law, referred to as the DGCL, holders of TorreyPines capital stock who do not vote in favor of the adoption of the merger agreement will have the right to seek appraisal of the fair value of their shares as determined by the Delaware Court of Chancery if the merger is completed, but only if they submit a written demand for an appraisal prior to the vote on the adoption of the merger agreement and they comply with the other procedures under the DGCL explained in the joint proxy statement/prospectus. For more information, please see the section entitled "The Merger Appraisal Rights" in the accompanying joint proxy statement/prospectus.

Whether or not you plan to attend the TorreyPines special meeting, please complete, sign and date the enclosed proxy and return it promptly in the enclosed postage-paid return envelope. You may revoke the proxy at any time prior to its exercise in the manner described in the accompanying joint proxy statement/prospectus. Any stockholder present at the TorreyPines special meeting, including any adjournment or postponement of the meeting, may revoke such stockholder's proxy and vote personally on the matters to be considered at the TorreyPines special meeting. Executed proxies with no instructions indicated thereon will be voted "FOR" the adoption of the merger agreement, "FOR" the amendment to the certificate of incorporation to change the name and "FOR" the adjournment of the TorreyPines special meeting, if necessary, to solicit additional proxies in favor of the adoption of the merger agreement.

Please do not send any TorreyPines stock certificates at this time. After the merger is completed, you will receive written instructions for exchanging your stock certificates.

By Order of TorreyPines' Board of Directors,

Neil M. Kurtz, M.D.
President and Chief Executive Officer
La Jolla, California
August 28, 2006

TABLE OF CONTENTS

QUESTIONS AND ANSWERS ABOUT THE MERGER	1
SUMMARY	5
The Companies	5
Summary of the Merger	6
Reasons for the Merger	7
Opinion of Axonyx's Financial Advisor	8
Overview of the Merger Agreement	8
Voting Agreements	11
Lock-up Agreements	12
Management Following the Merger	12
Interests of Certain Directors, Officers and Affiliates of Axonyx and TorreyPines	12
Stock Options and Warrants	13
Material United States Federal Income Tax Consequences of the Merger	14
Risk Factors	14
Regulatory Approvals	15
NASDAQ Listing	15
Anticipated Accounting Treatment	15
Appraisal Rights and Dissenters' Rights	15
Comparison of Stockholder Rights	16
Adoption of the Axonyx 2006 Equity Incentive Plan	16
SELECTED HISTORICAL AND UNAUDITED PRO FORMA CONDENSED COMBINED FINANCIAL DATA	17
Selected Historical Consolidated Financial Data of Axonyx	17
Selected Historical Financial Data of TorreyPines	18
Selected Unaudited Pro Forma Condensed Combined Financial Data of Axonyx and TorreyPines	19
Comparative Historical and Unaudited Pro Forma Per Share Data	20
MARKET PRICE AND DIVIDEND INFORMATION	21
RISK FACTORS	22
Risks Related to the Merger	22
Risks Related to Axonyx	25
Risks Related to TorreyPines	39
Risks Related to the Combined Company	55
FORWARD-LOOKING STATEMENTS	60
THE ANNUAL MEETING OF AXONYX STOCKHOLDERS	61
Date, Time and Place	61
Purposes of the Axonyx Annual Meeting	61
Recommendation of Axonyx's Board of Directors	61
Record Date and Voting Power	62
Voting and Revocation of Proxies	63
Required Vote	64
Solicitation of Proxies	65
Other Matters	65
THE SPECIAL MEETING OF TORREYPINES STOCKHOLDERS	66
General	66
Date, Time and Place	66
Purposes of the TorreyPines Special Meeting	66
Recommendations of TorreyPines' Board of Directors	66

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Record Date; Shares of Common Stock and Preferred Stock Outstanding and Entitled to Vote	67
Quorum and Vote of TorreyPines Stockholders Required	67
Voting of Proxies	68
Revocation of Proxies	68
THE MERGER	69
Background of the Merger	69
Reasons for the Merger	75
Opinion of Axonyx's Financial Advisor	81
Interests of Axonyx's Directors and Executive Officers in the Merger	91
Interests of TorreyPines' Directors and Executive Officers in the Merger	95
Stock Options and Warrants	97
Form of the Merger	98
Merger Consideration and Adjustment	98
Effective Time of the Merger	100
Regulatory Approvals	101
Tax Treatment of the Merger	101
Material United States Federal Income Tax Consequences of the Merger	101
NASDAQ Stock Market Listing	104
Anticipated Accounting Treatment	105
Appraisal Rights	105
THE MERGER AGREEMENT	108
General	108
Merger Consideration and Adjustment	108
Assumption of TorreyPines Stock Options and Warrants	109
Directors and Officers of Axonyx Following the Merger	110
Amendment to Axonyx's Articles of Incorporation	110
Change of Axonyx's State of Incorporation from Nevada to Delaware	110
Conditions to the Completion of the Merger	110
No Solicitation	112
Meetings of Stockholders	115
Covenants; Conduct of Business Pending the Merger	115
Other Agreements	117
Termination	117
Termination Fee	120
Representations and Warranties	121
Amendment	122
AGREEMENTS RELATED TO THE MERGER	123
Voting Agreements	123
Lock-up Agreements	124
MATTERS BEING SUBMITTED TO A VOTE OF AXONYX STOCKHOLDERS	125
Axonyx Proposal No. 1: Approval of the Issuance of Common Stock and Merger Warrants in the Merger and the Resulting Change in Control	125
Axonyx Proposal No. 2: Approval of the Amendment to Axonyx's Articles of Incorporation Effecting the Reverse Stock Split	126
Axonyx Proposal No. 3: Approval of Name Change	138
Axonyx Proposal No. 4: Approval of Change of Axonyx's State of Incorporation from Nevada to Delaware	139
Axonyx Proposal No. 5: Adoption of the Axonyx Inc. 2006 Equity Incentive Plan	161
Axonyx Proposal No. 6: Election of Directors	173

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Axonyx Proposal No. 7: Approval of Possible Adjournment of the Axonyx Annual Meeting	185
EXECUTIVE COMPENSATION	186
Executive Officers	186
Summary Compensation	186
MATTERS BEING SUBMITTED TO A VOTE OF TORREYPINES SECURITYHOLDERS	192
TorreyPines Proposal No. 1: Adoption of the Merger Agreement	192
TorreyPines Proposal No. 2: Approval of Name Change	192
TorreyPines Proposal No. 3: Adjournment of the TorreyPines Special Meeting, if Necessary to Solicit Additional Proxies If There are Not Sufficient Votes in Favor of the Adoption of the Merger Agreement	193
AXONYX'S BUSINESS	194
Axonyx's Business Strategy and Drug Development Programs	194
Out-Licensed Technology	201
Competition	201
Government Regulation	203
Strategic Alliances	203
Marketing and Sales	207
Patents, Trademarks, and Copyrights	207
Employees	208
Properties	208
Legal Proceedings	208
Web Site Access to SEC Filings	209
TORREYPINES' BUSINESS	210
Overview	210
Business Strategy	212
Product Development Programs	213
Proprietary Rights	218
Strategic Alliances, License and Other Commercial Agreements	219
Competition	223
Manufacturing and Supply	224
Sales and Marketing	225
Government Regulation	225
Scientific Advisors	230
Employees	230
Properties	231
Legal Proceedings	231
AXONYX'S MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS	232
Overview	232
Results of Operations	234
Liquidity and Capital Resources	238
Critical Accounting Policies and Estimates	240
New Accounting Pronouncements	240
QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT AXONYX'S MARKET RISK	242
TORREYPINES' MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS	243

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Overview	243
Financial Operations Overview	245
Results of Operations	246
Liquidity and Capital Resources	249
Critical Accounting Policies	251
Off-Balance Sheet Arrangements	252
Inflation	252
QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT TORREYPINES' MARKET RISK	253
MANAGEMENT FOLLOWING THE MERGER	254
Executive Officers and Directors	254
Directors	254
Executive Officers	257
Executive Compensation and Option Grants	257
Compensation of Directors	259
Compensation Committee Interlocks and Insider Participation	259
Agreements with Executive Officers Following the Merger	259
Related Party Transactions of Directors and Executive Officers of the Combined Company	260
UNAUDITED PRO FORMA CONDENSED COMBINED FINANCIAL STATEMENTS	265
DESCRIPTION OF AXONYX'S CAPITAL STOCK	273
Common Stock	273
Preferred Stock	276
COMPARISON OF RIGHTS OF HOLDERS OF AXONYX STOCK AND TORREYPINES STOCK	279
PRINCIPAL STOCKHOLDERS OF AXONYX	287
PRINCIPAL STOCKHOLDERS OF TORREYPINES	291
PRINCIPAL STOCKHOLDERS OF COMBINED COMPANY	294
LEGAL MATTERS	296
EXPERTS	296
WHERE YOU CAN FIND MORE INFORMATION	296
Information on Axonyx's Website	297
Information on TorreyPines' Website	297
Trademark Notice	297
OTHER MATTERS	297
Section 16(a) Beneficial Ownership Reporting Compliance	297
Stockholder Proposals	297
Communication with the Axonyx Board of Directors	298
INDEX TO AXONYX CONSOLIDATED FINANCIAL STATEMENTS	F-1
INDEX TO TORREYPINES CONSOLIDATED FINANCIAL STATEMENTS	F-36
ANNEX A AGREEMENT AND PLAN OF MERGER AND REORGANIZATION	A-1
ANNEX B OPINION OF BANC OF AMERICA SECURITIES LLC	B-1
ANNEX C GENERAL CORPORATION LAW OF THE STATE OF DELAWARE	C-1

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ANNEX D NEVADA REVISED STATUTES	D-1
ANNEX E AXONYX CERTIFICATE OF AMENDMENT REGARDING NAME CHANGE AND REVERSE STOCK SPLIT	E-1
ANNEX F PLAN OF CONVERSION	F-1
ANNEX G DELAWARE CERTIFICATE OF INCORPORATION	G-1
ANNEX H BYLAWS	H-1
ANNEX I TORREYPINES CERTIFICATE OF AMENDMENT REGARDING NAME CHANGE	I-1
ANNEX J AXONYX INC. 2006 EQUITY INCENTIVE PLAN	J-1

QUESTIONS AND ANSWERS ABOUT THE MERGER

Except where specifically noted, the following information and all other information contained in this joint proxy statement/prospectus does not give effect to the reverse stock split described in Axonyx Proposal No. 2.

The following section provides answers to frequently asked questions about the merger. This section, however, provides only summary information. For a more complete response to these questions and for additional information, please refer to the cross-referenced sections.

Q:
What is the merger?

A:
Axonyx and TorreyPines have entered into an Agreement and Plan of Merger and Reorganization, dated as of June 7, 2006, which is referred to as the merger agreement. The merger agreement contains the terms and conditions of the proposed business combination of Axonyx and TorreyPines. Under the merger agreement, Autobahn Acquisition, Inc., a wholly owned subsidiary of Axonyx, which is referred to as the merger sub, will merge into TorreyPines, with TorreyPines continuing as a wholly owned subsidiary of Axonyx, which transaction is referred to as the merger. At the effective time of the merger, each share of TorreyPines common stock and TorreyPines preferred stock outstanding immediately prior to the effective time of the merger will be converted into the right to receive 1.299 shares of Axonyx common stock, subject to adjustment to account for the effect of a reverse stock split of Axonyx common stock to be implemented prior to the consummation of the merger, which is referred to as the reverse stock split, and to account for the occurrence of certain other events.

Q:
What will happen to Axonyx if, for any reason, the merger with TorreyPines does not close?

A:
If, for any reason, the merger with TorreyPines does not close, the Axonyx board of directors may elect to, among other things, continue to operate Axonyx's business, attempt to complete another strategic transaction like the merger or attempt to sell or otherwise dispose of Axonyx's various operating assets.

Q:
Why are the two companies proposing to merge?

A:
TorreyPines and Axonyx believe that the merger will result in a biopharmaceutical company with discovery and development capabilities across a spectrum of central nervous system, or CNS, diseases and disorders and a pipeline of clinical and preclinical stage product candidates designed to address significant and underserved or unmet medical needs. In addition, the companies anticipate that the financial resources of the combined company and experienced management team will position it well to focus on execution with respect to its product candidate portfolio. For a discussion of Axonyx's and TorreyPines' reasons for the merger, please see the section entitled "The Merger Reasons for the Merger" in this joint proxy statement/prospectus.

Q:
Why am I receiving this joint proxy statement/prospectus?

A:
You are receiving this joint proxy statement/prospectus because you have been identified as a stockholder of either Axonyx or TorreyPines as of the applicable record date, and you are entitled to vote at such company's stockholder meeting. This document serves as both a joint proxy statement of Axonyx and TorreyPines used to solicit proxies for the stockholder meetings, and as a prospectus of Axonyx used to offer shares of Axonyx common stock (a) in exchange for shares of TorreyPines common stock and preferred stock in the merger and (b) issuable upon exercise of the warrants to purchase shares of Axonyx common stock being issued to the holders of TorreyPines preferred stock in the merger, referred to as the merger warrants. This joint proxy statement/prospectus contains important information about the merger and the stockholder meetings of Axonyx and TorreyPines, and you should read it carefully.

Q: What do I need to do now?

A: Axonyx and TorreyPines urge you to read this joint proxy statement/prospectus carefully, including its annexes, and to consider how the merger affects you.

If you are an Axonyx stockholder, you may provide your proxy instructions in one of three different ways. First, you can mail your signed proxy card in the enclosed return envelope. Alternatively, you can provide your proxy instructions via touch-tone telephone by dialing the toll-free telephone number on your proxy card or voting instruction form. You may also provide your proxy instructions via the Internet by following the instructions on your proxy card or voting instruction form.

If you are a TorreyPines stockholder, you may only provide your proxy instructions by mailing your signed proxy card in the enclosed return envelope.

Please provide your proxy instructions only once and as soon as possible so that your shares can be voted at the annual meeting of Axonyx stockholders or the special meeting of TorreyPines stockholders, as applicable.

Q: What happens if I do not return a proxy card or otherwise provide proxy instructions?

A: If you are an Axonyx stockholder, the failure to return your proxy card or otherwise provide proxy instructions will have the same effect as voting against Axonyx Proposal Nos. 2, 3 and 4 and your shares will not be counted for purposes of determining whether a quorum is present at the Axonyx annual meeting. If you are a TorreyPines stockholder, the failure to return your proxy card will have the same effect as voting against the adoption of the merger agreement and the name change and your shares will not be counted for purposes of determining whether a quorum is present at the TorreyPines special meeting.

Q: May I vote in person?

A: If you are a stockholder of Axonyx and your shares of Axonyx common stock are registered directly in your name with Axonyx's transfer agent, you are considered to be the stockholder of record with respect to those shares, and the proxy materials and proxy card are being sent directly to you by Axonyx. If you are an Axonyx stockholder of record, you may attend the annual meeting of Axonyx stockholders to be held on September 28, 2006 and vote your shares in person. **Even if you plan to attend the Axonyx annual meeting in person, Axonyx requests that you sign and return the enclosed proxy to ensure that your shares will be represented at the Axonyx annual meeting if you are unable to attend.**

If your shares of Axonyx common stock are held in a brokerage account or by another nominee, you are considered the beneficial owner of shares held in "street name," and the proxy materials are being forwarded to you by your broker or other nominee together with a voting instruction card. As the beneficial owner, you are also invited to attend the annual meeting of Axonyx stockholders. Because a beneficial owner is not the stockholder of record, you may not vote these shares in person at the Axonyx annual meeting unless you obtain a proxy from the broker, trustee or nominee that holds your shares, giving you the right to vote the shares at the meeting.

If you are a stockholder of TorreyPines and your shares of TorreyPines capital stock are registered directly in your name, you are considered to be the stockholder of record with respect to those shares and the proxy materials and proxy card are being sent directly to you by TorreyPines. If you are a TorreyPines stockholder of record, you may attend the special meeting of TorreyPines stockholders to be held on September 28, 2006 and vote your shares in person.

Q:
If my Axonyx shares are held in "street name" by my broker, will my broker vote my shares for me?

A:
Unless your broker has discretionary authority to vote on certain matters, your broker will not be able to vote your shares of Axonyx common stock without instructions from you. Brokers are not expected to have discretionary authority to vote for Axonyx Proposal Nos. 1, 2, 3, 4 or 5. To make sure that your vote is counted, you should instruct your broker to vote your shares, following the procedures provided by your broker.

Q:
May I change my vote after I have submitted a proxy or provided proxy instructions?

A:
Axonyx stockholders of record, other than those Axonyx stockholders who have executed voting agreements, may change their vote at any time before their proxy is voted at the Axonyx annual meeting in one of three ways. First, a stockholder of record of Axonyx can send a written notice to the Secretary of Axonyx stating that it would like to revoke its proxy. Second, a stockholder of record of Axonyx can submit new proxy instructions either on a new proxy card, by telephone or via the Internet. Third, a stockholder of record of Axonyx can attend the Axonyx annual meeting and vote in person. Attendance alone will not revoke a proxy. If an Axonyx stockholder of record or a stockholder who owns Axonyx shares in "street name" has instructed a broker to vote its shares of Axonyx common stock, the stockholder must follow directions received from its broker to change those instructions.

TorreyPines stockholders of record, other than those TorreyPines stockholders who have executed voting agreements, may change their vote at any time before their proxy is voted at the TorreyPines special meeting by delivering to the Secretary of TorreyPines a signed notice of revocation or a later-dated signed proxy, or by attending the TorreyPines special meeting and voting in person. Attendance at the TorreyPines special meeting does not in itself constitute the revocation of a proxy.

Q:
Should I send in my stock certificates now?

A:
No. If you are a TorreyPines stockholder, after the merger is consummated, you will receive written instructions from the exchange agent for exchanging your certificates representing shares of TorreyPines capital stock for certificates representing shares of Axonyx common stock and, in the case of holders of TorreyPines preferred stock, the merger warrants. You will receive a cash payment for any fractional shares. If Axonyx Proposal Nos. 2, 3 and 4 are approved and effected, Axonyx stockholders will also exchange their stock certificates and will receive written instructions from Axonyx's transfer agent for exchanging their shares of Axonyx common stock.

Q:
Who is paying for this proxy solicitation?

A:
Axonyx and TorreyPines will share equally the cost of printing and filing of this joint proxy statement/prospectus and the proxy card. Axonyx has engaged and will pay Georgeson Inc., a proxy solicitation firm, to solicit proxies from Axonyx's stockholders. Arrangements will also be made with brokerage firms and other custodians, nominees and fiduciaries who are record holders of Axonyx common stock for the forwarding of solicitation materials to the beneficial owners of Axonyx common stock. Axonyx will reimburse these brokers, custodians, nominees and fiduciaries for the reasonable out-of-pocket expenses they incur in connection with the forwarding of solicitation materials.

Q:
Who can help answer my questions?

A:
If you are an Axonyx stockholder and would like additional copies, without charge, of this joint proxy statement/prospectus or if you have questions about the merger, including the procedures for voting your shares, you should contact either:

Georgeson Inc.
17 State Street, 10th Floor
New York, NY 10004
(866) 482-5136

Axonyx Inc.
500 Seventh Avenue, 10th Floor
New York, NY 10018
Tel: (212) 645-7704
Fax: (212) 978-1745
Attn: Investor Relations

If you are a TorreyPines stockholder, and would like additional copies, without charge, of this joint proxy statement/prospectus or if you have questions about the merger, including the procedures for voting your shares, you should contact:

TorreyPines Therapeutics, Inc.
11085 North Torrey Pines Road
Suite 300
La Jolla, CA 92037
(858) 623-5665
Attn: Secretary

SUMMARY

This summary highlights selected information from this joint proxy statement/prospectus and may not contain all of the information that is important to you. To better understand the merger and the other proposals being considered at the Axonyx annual meeting and TorreyPines special meeting, you should read this entire joint proxy statement/prospectus carefully, including the merger agreement attached as Annex A, the opinion of Banc of America Securities LLC attached as Annex B, and the other documents to which you are referred herein. For more information, please see the section entitled "Where You Can Find More Information" in this joint proxy statement/prospectus.

The Companies

Axonyx Inc.

500 Seventh Avenue, 10th Floor
New York, NY 10018
(212) 645-7704

Axonyx is a biopharmaceutical company, specializing in central nervous system, or CNS, neurodegenerative diseases and disorders, engaged in the business of acquiring patent rights to clinical stage compounds, compounds with strong proof of concept data and compounds ready for proof of concept validation with convincing scientific rationale, or potentially another company with similar rights. Axonyx further develops these compounds and then seek to out-license or partner them. Axonyx has acquired patent rights to three main classes of therapeutic compounds designed for the treatment of Alzheimer's Disease, or AD, Mild Cognitive Impairment, and related diseases. Axonyx has acquired patent rights to a class of potential therapeutic compounds designed for the treatment of prion related diseases, which are degenerative diseases of the brain that are thought to be caused by an infectious form of a protein called a prion. Prions, unlike viruses, bacteria and fungi, have no DNA and consist only of protein. Such diseases include Creutzfeldt Jakob Disease, new variant in humans, Bovine Spongiform Encephalopathy, referred to as BSE, in cows, and Scrapies disease in sheep. Axonyx has licensed these patent rights from New York University. Axonyx also has co-ownership rights to patent applications regarding the therapeutic compound named Posiphen designed for the treatment of AD progression and Bisnorcymserine, or BNC, in development for the treatment of severe AD.

Axonyx's mission is to be a leading biopharmaceutical company that develops products and technologies to treat CNS diseases and disorders. Axonyx's initial business strategy has been focused primarily on three compounds in development for AD. These are:

Phenserine A symptomatic and disease progression treatment of mild to moderate AD

Posiphen A disease progression treatment for AD

Bisnorcymserine A symptomatic treatment of severe AD

Axonyx's current business strategy includes identifying and seeking to in-license potential compounds or partner with companies to expand its product development portfolio.

TorreyPines Therapeutics, Inc.

11085 North Torrey Pines Road
Suite 300
La Jolla, CA 92037
(858) 623-5665

TorreyPines discovers and develops novel small molecules to treat diseases and disorders of the CNS, including migraine, chronic pain, and AD. Through its in-house discovery programs and strategic in-licensing, TorreyPines has built a promising pipeline of five product candidates for these indications. TorreyPines has three product candidates in clinical development and two in preclinical testing. In

addition, TorreyPines has two drug discovery programs, both undertaken in collaboration with Eisai Co., Ltd., or Eisai, a leader in AD research. These programs focus on discovering and validating novel molecular targets and small molecules for AD. TorreyPines believes that its proprietary product candidates, experienced management team, discovery operation, and in-depth focus on CNS diseases and disorders provide it with a competitive advantage in building a premier CNS biopharmaceutical company.

TorreyPines' mission is to deliver important new therapies to patients suffering from migraine, chronic pain, and AD. TorreyPines' migraine and chronic pain franchise is comprised of two novel product candidates that were in-licensed from Eli Lilly & Company, referred to as Eli Lilly, in 2003. Tezampanel is TorreyPines' lead product candidate for pain and NGX426 is a follow-on product candidate for pain. TorreyPines has three product candidates in development for AD, the most common form of dementia in the elderly, which may represent a new generation of therapies that are intended to target the disease mechanisms underlying AD. NGX267, TorreyPines' lead product candidate for AD and NGX292, a follow-on product candidate, are muscarinic, or M1, receptor agonists that were in-licensed from Life Science Research Israel, or LSRI, in 2004. NGX555 is a gamma-secretase modulator that was discovered at TorreyPines.

Summary of the Merger (see page 69)

If the merger is completed, merger sub will merge with and into TorreyPines, with TorreyPines continuing as a wholly owned subsidiary of Axonyx. Immediately after the merger, subject to adjustments to reflect certain events that could occur prior to closing of the merger, TorreyPines securityholders will own approximately 58% of the fully-diluted shares of the combined company (excluding the merger warrants, discussed below), with Axonyx securityholders holding approximately 42% of the fully-diluted shares of the combined company, in each case calculated using the treasury stock method. In addition, holders of TorreyPines preferred stock immediately prior to the effective time of the merger will receive warrants, referred to as merger warrants, to purchase a pro rata portion of a total of 12,000,000 shares of Axonyx common stock, subject to adjustment to account for the reverse stock split described in this joint proxy statement/prospectus, based on the number of shares of TorreyPines preferred stock held by each holder as a percentage of the total shares of TorreyPines preferred stock outstanding. If the merger warrants were exercised as of the closing of the merger, TorreyPines securityholders would own approximately 62% of the fully-diluted shares of the combined company, with existing Axonyx securityholders holding approximately 38% of the fully-diluted shares of the combined company, in each case calculated using the treasury stock method. These percentages assume:

a reference price of \$0.942 per share of Axonyx common stock for treasury stock method calculation purposes, calculated based on the average closing price per share of Axonyx common stock for the five trading days ending June 5, 2006;

that the number of shares subject to TorreyPines options and warrants does not change between the date of this joint proxy statement/prospectus and the closing of the merger; and

that the exchange ratio is not adjusted, as described in "The Merger Agreement Merger Consideration and Adjustment" below.

For a more complete description of the merger ratio please see the section entitled "The Merger Agreement" in this joint proxy statement/prospectus.

The closing of the merger will occur no later than the fifth business day after the last of the conditions to the merger has been satisfied or waived, or at another time as Axonyx and TorreyPines agree. Axonyx and TorreyPines anticipate that the consummation of the merger will occur sometime in the fourth quarter of 2006. However, because the merger is subject to a number of conditions, neither

Axonyx nor TorreyPines can predict exactly when the closing will occur or if it will occur at all. After completion of the merger, assuming that Axonyx receives the required stockholder approval of Axonyx Proposal No. 3, Axonyx will be renamed "TorreyPines Therapeutics, Inc."

Reasons for the Merger (see page 75)

The combined company resulting from the merger will be a biopharmaceutical company that discovers and develops treatments for CNS diseases and disorders. TorreyPines and Axonyx believe that the combined company will have the following potential advantages:

Pipeline. The product candidate pipeline of the combined company will be composed of eight product candidates in various stages of development, with two product candidates for treatment of pain and six product candidates for AD. Of the two product candidates for treatment of pain, one product candidate has completed Phase IIa clinical trials. An Investigational New Drug application, or IND, was filed with the U.S. Food and Drug Administration, or FDA, in June 2006 on the second product candidate and a Phase I clinical trial began in August 2006. Of the six candidates for AD, two product candidates are in Phase I clinical trials, and three product candidates are in preclinical development. The combined company's pipeline in AD also includes Phenserine, which is in Phase III clinical development and which the combined company may make available to third parties for licensing.

Markets. The combined company will have discovery and development capabilities across a spectrum of CNS diseases and disorders. The markets to be addressed by the clinical and preclinical stage product candidates of the combined company represent sizable and underserved or unmet medical needs. The product candidates may provide significant medical benefits for patients.

Financial Resources. The financial resources of the combined company will position it well to focus on execution with respect to its product candidate portfolio.

Management Team. The combined company will be led by experienced senior management from TorreyPines and a board of directors with representation from each of TorreyPines and Axonyx.

Each of the board of directors of Axonyx and TorreyPines also considered other reasons for the merger, as described herein. For example, the board of directors of Axonyx considered, among other things:

Axonyx currently has two product candidates in clinical trials and one product candidate in preclinical development. The addition of the three TorreyPines product candidates currently being evaluated in clinical trials, and a number of additional TorreyPines product candidates in preclinical development, broadens the product pipeline for treatment of CNS diseases and disorders;

the consideration of strategic alternatives to the merger, including engaging in a merger transaction with another company, continuing to operate Axonyx on a stand-alone basis or undertaking a liquidation of Axonyx; and

the opportunity for Axonyx's securityholders to participate in the long-term value of TorreyPines' product candidate development programs as a result of the merger.

In addition, the TorreyPines' board of directors approved the merger based on a number of factors, including the following:

the fact that Axonyx's available cash, together with TorreyPines' cash resources, are anticipated to meet TorreyPines projected operating requirements through 2007 and to enable TorreyPines to reach its projected near-term product development milestones, and that, without Axonyx's

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cash, TorreyPines would need to raise additional funds through private or public equity offerings, partnerships with pharmaceutical companies, project financing, debt financing or other arrangements;

the relative certainty of amount and timing of access to capital through the merger with Axonyx compared to other financing options considered; and

the range of options available to the combined company to access private and public equity markets should additional capital be needed in the future will likely be greater as a public company than TorreyPines' existing options.

Opinion of Axonyx's Financial Advisor (see page 81)

Banc of America Securities LLC, referred to herein as Banc of America Securities, Axonyx's financial advisor, delivered to the board of directors of Axonyx a written opinion dated June 7, 2006, to the effect that, as of the date of the opinion and based on and subject to various assumptions and limitations described in the opinion, the consideration provided for in the proposed merger was fair, from a financial point of view, to Axonyx. The full text of this written opinion, which describes, among other things, the assumptions made, procedures followed, factors considered and limitations on the review undertaken, is attached as *Annex B* to this joint proxy statement/prospectus and is incorporated by reference in its entirety into this proxy statement. Holders of Axonyx common stock are encouraged to read the opinion carefully in its entirety.

Banc of America Securities' opinion was provided to the board of directors of Axonyx in connection with its evaluation of the consideration provided for in the merger. It does not address any other aspect of the proposed merger and does not constitute a recommendation as to how any stockholders of Axonyx should vote or act in connection with the merger.

Overview of the Merger Agreement

Merger Consideration and Adjustment (see page 108)

At the effective time of the merger, each share of TorreyPines common stock and TorreyPines preferred stock will be converted into the right to receive 1.299 shares of Axonyx common stock, subject to adjustment to account for the effect of the reverse stock split and the occurrence of certain events, which is referred to as the exchange ratio. The exchange ratio is subject to adjustment upon the occurrence of certain events, as follows:

if Axonyx completes an out-license of any of its product candidates to any company on a list of specified companies prior to the date that is five business days before the date of the Axonyx annual meeting of stockholders, referred to as an Axonyx permitted out-license, then the exchange ratio will be adjusted in accordance with a formula set forth in the merger agreement to reflect the addition to Axonyx's valuation of 75% of the cash paid to Axonyx at or prior to the closing of the Axonyx permitted out-license, which will have the effect of increasing the percentage of the combined company owned by Axonyx's securityholders and reducing the percentage of the combined company owned by TorreyPines' securityholders. In addition, if Axonyx completes an Axonyx permitted out-license, TorreyPines may elect to terminate the merger agreement and require Axonyx to reimburse it for its expenses, up to a maximum of \$1 million; and

if TorreyPines completes an out-license of any of its product candidates to any company on a list of specified companies prior to the date that is five business days before the date of the Axonyx annual meeting of stockholders, referred to as a TorreyPines permitted out-license, then the exchange ratio will be adjusted to reflect the addition to TorreyPines' valuation of 75% of the cash paid to TorreyPines at or prior to the closing of the TorreyPines permitted out-license,

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which will have the effect of increasing the percentage of the combined company owned by TorreyPines' securityholders and reducing the percentage of the combined company owned by Axonyx's securityholders. In addition, if TorreyPines completes a TorreyPines permitted out-license, Axonyx may elect to terminate the merger agreement and require TorreyPines to reimburse it for its expenses, up to a maximum of \$1 million.

As part of the merger consideration, each holder of TorreyPines preferred stock immediately prior to the effective time of the merger will receive a warrant, which is referred to as a merger warrant, to purchase its pro rata portion of a total of 12,000,000 shares of Axonyx common stock, subject to adjustment to account for the reverse stock split, based on the number of shares of TorreyPines preferred stock held by such holder as a percentage of the total shares of TorreyPines preferred stock outstanding. At the effective time, all outstanding options to purchase TorreyPines common stock and warrants to purchase TorreyPines common stock and TorreyPines Series A, Series B and Series C-2 preferred stock not exercised or terminated prior to the effective time of the merger will be assumed by Axonyx. For a more complete description of what TorreyPines securityholders will be entitled to receive in the merger, please see the section entitled "The Merger Agreement Merger Consideration and Adjustment" in this joint proxy statement/prospectus.

Conditions to Completion of the Merger (see page 110)

To consummate the merger, Axonyx stockholders must approve:

the issuance of Axonyx common stock and the merger warrants and the resulting change in control of Axonyx, which requires the affirmative vote of the holders of a majority of the shares of Axonyx common stock having voting power present in person or by proxy at the Axonyx annual meeting;

the amendment to Axonyx's articles of incorporation effecting a reverse stock split of Axonyx common stock, at a ratio within the range of 5:1 to 10:1, as described below, and a name change from "Axonyx Inc." to "TorreyPines Therapeutics, Inc.", which requires the affirmative vote of holders of a majority of the outstanding common stock on the record date for the Axonyx annual meeting; and

a change of Axonyx's state of incorporation from Nevada to Delaware, which requires the affirmative vote of holders of a majority of the outstanding common stock on the record date for the Axonyx annual meeting.

Upon the effectiveness of the amendment to Axonyx's articles of incorporation effecting the reverse stock split, referred to as the split effective time, the issued shares of Axonyx common stock immediately prior to the split effective time will be reclassified into a smaller number of shares such that a Axonyx stockholder will own one share of Axonyx common stock for each 5 to 10 shares of issued common stock held by that stockholder immediately prior to the split effective time. The exact split ratio within the 5:1 to 10:1 range will be determined by the Axonyx board of directors prior to the split effective time and will be publicly announced by Axonyx. Because the listing standards of the NASDAQ Global Market will require Axonyx to have, among other things, a \$5.00 per share minimum bid price, the reverse stock split will be necessary in order to consummate the merger.

In addition, TorreyPines stockholders must adopt the merger agreement, which requires the affirmative vote of:

the holders of a majority of the shares of TorreyPines common stock and TorreyPines preferred stock outstanding on the record date and entitled to vote at the TorreyPines special meeting, voting as a single class and on an as-converted basis; and

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the holders of two-thirds of the TorreyPines preferred stock outstanding on the record date and entitled to vote at the TorreyPines special meeting, voting as a single class and on an as-converted basis.

In addition to obtaining stockholder approval and appropriate regulatory approvals, each of the other closing conditions set forth in the merger agreement must be satisfied or waived. Among the closing conditions is the requirement that Axonyx's net cash, as calculated pursuant to the merger agreement, be at least \$38 million as measured on the date that is 10 business days prior to the anticipated date for closing. The items that constitute Axonyx's net cash at the closing of the merger are subject to many factors, many of which are outside of Axonyx's control. For a more complete description of the closing conditions under the merger agreement, please see the section entitled "The Merger Agreement Conditions to the Completion of the Merger" in this joint proxy statement/prospectus.

No Solicitation (see page 112)

Subject to certain exceptions, each of TorreyPines and Axonyx agreed that it and any of its subsidiaries will not, nor will it or any of its subsidiaries authorize or permit any of the officers, directors, investment bankers, attorneys or accountants retained by it or any of its subsidiaries to, and it will use its commercially reasonable efforts to cause its and its subsidiaries' non-officer employees and other agents not to, and will not authorize any of them to, directly or indirectly:

solicit, initiate, encourage, induce or knowingly facilitate the communication, making, submission or announcement of, any "acquisition proposal," as defined in the merger agreement, or inquiry, indication of interest or request for information that could reasonably be expected to lead to an acquisition proposal;

furnish to any person any information with respect to it in connection with or in response to an acquisition proposal, indication of interest or request for information;

engage in discussions or negotiations with respect to any acquisition proposal, indication of interest or request for information;

approve, endorse or recommend an acquisition proposal; or

execute or enter into any letter of intent or similar document or any contract contemplating or otherwise relating to an acquisition proposal.

Notwithstanding the foregoing, the no solicitation provisions do not restrict any of the following activities:

In the case of Axonyx, Axonyx's ability to negotiate or consummate an Axonyx permitted out-license; and

In the case of TorreyPines, TorreyPines' ability to negotiate or consummate a TorreyPines permitted out-license.

Other Strategic Transactions (see page 108)

Pursuant to the terms of the merger agreement, Axonyx is permitted to consummate an Axonyx permitted out-license. If Axonyx completes an Axonyx permitted out-license prior to the date that is five business days before the date of the Axonyx annual meeting of stockholders, the exchange ratio will be adjusted in accordance with a formula set forth in the merger agreement to reflect the addition to Axonyx's valuation of 75% of the cash paid to Axonyx at or prior to the closing of the Axonyx permitted out-license, which will have the effect of increasing the percentage of the combined company owned by Axonyx's securityholders and reducing the percentage of the combined company owned by

TorreyPines securityholders. In addition, if Axonyx completes an Axonyx permitted out-license, TorreyPines may elect to terminate the merger agreement and require Axonyx to reimburse it for its expenses, up to a maximum of \$1 million.

In addition, pursuant to the terms of the merger agreement, TorreyPines is permitted to consummate a TorreyPines permitted out-license. If TorreyPines completes a TorreyPines permitted out-license prior to the date that is five business days before the date of the Axonyx annual meeting of stockholders, the exchange ratio will be adjusted in accordance with a formula set forth in the merger agreement to reflect the addition to TorreyPines' valuation of 75% of the cash paid to TorreyPines at or prior to the closing of the TorreyPines permitted out-license, which will have the effect of increasing the percentage of the combined company owned by TorreyPines' securityholders and reducing the percentage of the combined company owned by Axonyx securityholders. In addition, if TorreyPines completes a TorreyPines permitted out-license, Axonyx may elect to terminate the merger agreement and require TorreyPines to reimburse it for its expenses, up to a maximum of \$1 million.

Except for the strategic transactions mentioned above, the merger agreement places certain limitations on the ability of Axonyx and TorreyPines to effect strategic transactions, including the limitations imposed by the non-solicitation provisions described above.

Termination of the Merger Agreement (see page 117)

Either Axonyx or TorreyPines can terminate the merger agreement under certain circumstances, which would prevent the merger from being consummated.

Termination Fee (see page 120)

If the merger agreement is terminated under certain circumstances, Axonyx or TorreyPines will be required to pay the expenses of the other party, up to a maximum of \$1 million. In addition, under certain circumstances, Axonyx or TorreyPines will be required to pay the other party a termination fee of \$2 million, less any expenses of the other party already paid.

Voting Agreements (see page 123)

In connection with the execution of the merger agreement, several TorreyPines stockholders entered into voting agreements pursuant to which, among other things, each of these stockholders agreed, solely in its capacity as a stockholder, to vote all of its shares of TorreyPines capital stock in favor of the adoption of the merger agreement, against any matter that would result in a breach of the merger agreement by TorreyPines and against any other action which is intended, or could reasonably be expected to impede, interfere with, delay, postpone, discourage or adversely affect the merger or any of the other transactions contemplated by the merger agreement.

As of June 7, 2006, the stockholders of TorreyPines that entered into voting agreements owned an aggregate of 1,100,000 shares of TorreyPines common stock and 39,379,400 shares of TorreyPines preferred stock, representing approximately 33% of the outstanding TorreyPines common stock, approximately 80% of the outstanding TorreyPines preferred stock and approximately 77% of the aggregate outstanding TorreyPines capital stock. All of these stockholders are executive officers or directors of TorreyPines or entities controlled by such persons, or 5% stockholders of TorreyPines. If the board of directors of TorreyPines withdraws its recommendation in favor of the merger as permitted under the merger agreement and TorreyPines receives a superior offer, as described under "The Merger Agreement No Solicitation" in this joint proxy statement/prospectus, the voting agreement will only apply to the number of shares of TorreyPines capital stock that in the aggregate is equal to 33% of the outstanding TorreyPines common stock and preferred stock, voting together as a class, and 33% of the TorreyPines preferred stock, voting separately as a class.

In connection with the execution of the merger agreement, several Axonyx stockholders entered into voting agreements with TorreyPines pursuant to which, among other things, each of these stockholders agreed, solely in its capacity as a stockholder, to vote all of its shares of Axonyx common stock in favor of the approval of the issuance of the shares of Axonyx common stock and the merger warrants in the merger, the amendment to Axonyx's articles of incorporation effecting the reverse stock split and the name change from "Axonyx Inc." to "TorreyPines Therapeutics, Inc.", the change of Axonyx's state of incorporation from Nevada to Delaware and the Axonyx 2006 Equity Incentive Plan and any action in furtherance of the foregoing, and against any matter that would result in a breach of the merger agreement by Axonyx and any other action, which is intended, or could reasonably be expected to impede, interfere with, delay, postpone, discourage or adversely affect the merger or any of the other transactions contemplated by the merger agreement.

The Axonyx stockholders that entered into voting agreements are Axonyx officers and directors. As of June 7, 2006, these stockholders owned shares in the aggregate representing approximately 4.7% of the outstanding Axonyx common stock.

Lock-up Agreements (see page 124)

As a condition to the closing of the merger, the TorreyPines securityholders listed below will enter into lock-up agreements, pursuant to which such parties will agree not to, except in limited circumstances, sell or transfer, or engage in hedging or similar transactions with respect to, the shares of Axonyx common stock, including shares issuable upon exercise of the merger warrants, that they receive pursuant to the terms of the merger agreement from the closing date of the merger until 180 days after the closing date. The following TorreyPines securityholders will execute lock-up agreements: Neil M. Kurtz, M.D., Evelyn Graham, Craig Johnson, William T. Comer, Ph.D., Roy C. Cosan, Peter Davis, Ph.D., Jean Deleage, Ph.D., Jason S. Fisherman, M.D., Rudolph E. Tanzi, Ph.D., Patrick Van Beneden, Johnson & Johnson Development Corporation, Alta Partners and its affiliates, Advent International and its affiliates and GIMV, NV and its affiliates. As of August 23, 2006, these securityholders beneficially owned in the aggregate approximately 78% of the TorreyPines common and preferred stock.

Management Following the Merger (see page 110)

Effective as of the closing of the merger, the combined company's officers are expected to include Neil M. Kurtz, M.D. (President and Chief Executive Officer), Evelyn Graham (Chief Operating Officer), Craig Johnson (Vice President Finance and Chief Financial Officer), Michael Murphy, M.D., Ph.D. (Sr. Vice President, Discovery and Development and Chief Medical Officer), and Steven Wagner, Ph.D. (Chief Scientific Officer), each of whom currently holds the same position at TorreyPines. The combined company will initially have a ten member board of directors, comprised of six individuals from TorreyPines' current board of directors, Neil M. Kurtz, M.D., William T. Comer, Ph.D., Peter Davis, Ph.D., Jean Deleage, Ph.D., Jason Fisherman, M.D. and Patrick Van Beneden, and four individuals from Axonyx's current board of directors, Louis G. Cornacchia, Marvin S. Hausman, M.D., Steven H. Ferris, Ph.D. and Steven B. Ratoff.

Interests of Certain Directors, Officers and Affiliates of Axonyx and TorreyPines (see pages 91 and 95)

In considering the recommendation of the Axonyx board of directors with respect to issuing shares of Axonyx common stock and the merger warrants pursuant to the merger agreement and the other matters to be acted upon by Axonyx stockholders at the Axonyx annual meeting, Axonyx stockholders should be aware that certain members of the board of directors and executive officers of Axonyx have interests in the merger that may be different from, or in addition to, interests they have as Axonyx stockholders. For example, Axonyx has entered into a change of control agreement with each of its executive officers that may result in the receipt by such executive officers of cash severance payments

and other benefits with a total value of approximately \$2.6 million (collectively, not individually, and excluding the value of any accelerated vesting of stock options or lapsing of any post-termination stock option exercise restrictions) and the acceleration of certain stock options held by those officers to purchase shares of Axonyx common stock, based on data available as of August 23, 2006 and assuming a qualifying termination of employment of each executive officer's employment as of such date. In addition, the closing of the merger will result in the acceleration of vesting of the stock options to purchase approximately 1,110,625 shares of Axonyx common stock held by Axonyx's executive officers and directors, whether or not there is a qualifying termination of such officer's employment, and certain Axonyx directors will continue to serve on the board of directors of the combined company following the consummation of the merger.

As of August 23, 2006, all directors and executive officers of Axonyx, together with their affiliates, beneficially owned 8.9% of the shares of Axonyx common stock. The affirmative vote of the holders of a majority of the Axonyx common stock having voting power present in person or represented by proxy at the Axonyx annual meeting is required for approval of Axonyx Proposal Nos. 1, 5 and 7. The affirmative vote of holders of a majority of the Axonyx common stock having voting power outstanding on the record date for the Axonyx annual meeting is required for approval of Axonyx Proposal Nos. 2, 3 and 4. Certain Axonyx officers and directors, and their affiliates, have also entered into voting agreements in connection with the merger. The voting agreements are discussed in greater detail in the section entitled "Agreements Related to the Merger Voting Agreements" in this joint proxy statement/prospectus.

In considering the recommendation of the TorreyPines board of directors with respect to adopting the merger agreement, TorreyPines stockholders should be aware that certain members of the board of directors and executive officers of TorreyPines have interests in the merger that may be different from, or in addition to, interests they have as TorreyPines stockholders. For example, following the consummation of the merger, certain of TorreyPines' directors will continue to serve on the board of directors of the combined company and the management team of the combined company is expected to be composed of the management team of TorreyPines. In addition, certain of TorreyPines' directors and all of TorreyPines' executive officers hold options to purchase shares of TorreyPines common stock, which options will be assumed by Axonyx and become options to purchase shares of Axonyx common stock based on the exchange ratio following the consummation of the merger.

As of August 23, 2006, all directors and executive officers of TorreyPines, together with their affiliates, beneficially owned approximately 79% of the shares of TorreyPines capital stock. The adoption of the merger agreement and the approval of an amendment to TorreyPines' certificate of incorporation to change the name "TorreyPines Therapeutics, Inc." to "TPTX, Inc." requires the affirmative vote of (a) the holders of a majority of the shares of TorreyPines common stock and TorreyPines preferred stock outstanding on the record date and entitled to vote at the TorreyPines special meeting, voting as a single class and on an as-converted basis, and (b) the holders of a two-thirds of the shares of TorreyPines preferred stock outstanding on the record date and entitled to vote at the TorreyPines special meeting, voting as a single class and on an as-converted basis. Certain TorreyPines officers and directors, and their affiliates, have also entered into voting agreements in connection with the merger. The voting agreements are discussed in greater detail in the section entitled "Agreements Related to the Merger Voting Agreements" in this joint proxy statement/prospectus.

Stock Options and Warrants (see page 97)

At the effective time of the merger, each outstanding stock option to purchase TorreyPines common stock not exercised prior to the merger will be assumed by Axonyx and become exercisable (a) for such number of shares of Axonyx common stock as is determined by multiplying the number of shares of TorreyPines common stock subject to the option by the exchange ratio and rounding that

result down to the nearest whole number of shares of Axonyx common stock, and (b) at a per share exercise price as is determined by dividing the existing exercise price of the option by the exchange ratio and rounding that result up to the nearest whole cent. For more information, please see the section entitled "The Merger Agreement Merger Consideration and Adjustment" in this joint proxy statement/prospectus.

At the effective time of the merger, each outstanding warrant to purchase shares of TorreyPines Series A preferred stock, Series B preferred stock, Series C-2 preferred stock and common stock not terminated or exercised at or prior to the merger will be assumed by Axonyx and will be exercisable (a) for such number of shares of Axonyx common stock as is determined by multiplying the number of shares of TorreyPines common stock, or the number of shares of TorreyPines common stock issuable upon conversion of the shares of TorreyPines preferred stock issuable upon exercise of such warrant, as applicable, that were subject to such warrant prior to the effective time of the merger by the exchange ratio and rounding that result down to the nearest whole number of shares of Axonyx common stock, and (b) at a per share exercise price determined by dividing the per share exercise price of the TorreyPines preferred stock or common stock subject to each warrant as in effect immediately prior to the effective time of the merger by the exchange ratio and rounding that result up to the nearest whole cent.

Material United States Federal Income Tax Consequences of the Merger (see page 101)

Each of TorreyPines and Axonyx expects the merger to qualify as a reorganization within the meaning of Section 368(a) of the Internal Revenue Code of 1986, as amended, and it is a closing condition to the merger that Axonyx and TorreyPines receive opinions of their respective counsel regarding such qualification. Assuming the merger's qualification as a reorganization, TorreyPines stockholders generally will not recognize gain or loss for U.S. federal income tax purposes upon the exchange of shares of TorreyPines common stock for shares of Axonyx common stock and the exchange of shares of TorreyPines preferred stock for shares of Axonyx common stock and warrants to purchase shares of Axonyx common stock, except with respect to cash received in lieu of fractional shares of Axonyx common stock and except for TorreyPines stockholders who exercise their appraisal rights with respect to the merger. Tax matters are very complicated, and the tax consequences of the merger to a particular stockholder will depend in part on such stockholder's circumstances. Accordingly, you are urged to consult your own tax advisor for a full understanding of the tax consequences of the merger to you, including the applicability and effect of federal, state, local and foreign income and other tax laws.

Risk Factors (see page 22)

Both Axonyx and TorreyPines are subject to various risks associated with their businesses and their industries. In addition, the merger, including the possibility that the merger may not be completed, poses a number of risks to each company and its respective stockholders, including the following risks:

some of Axonyx's and TorreyPines' officers and directors have interests that are different than your interests that may influence them to support or approve the merger;

the exchange ratio is not adjustable based on the market price of Axonyx common stock;

failure to complete the merger may result in Axonyx or TorreyPines paying a termination fee or certain expenses to the other and could harm Axonyx's or TorreyPines' common stock price and future business and operations;

the merger may be completed even though material adverse changes may result from the announcement of the merger, from industry-wide changes and from other causes;

the market price of the combined company's common stock may decline as a result of the merger;

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Axonyx and TorreyPines stockholders may not realize a benefit from the merger commensurate with the ownership dilution they will experience in connection with the merger; and

during the pendency of the merger, Axonyx and TorreyPines may not be able to enter into a business combination with another party at a favorable price because of restrictions in the merger agreement.

These risks and other risks are discussed in greater detail under the section entitled "Risk Factors" in this joint proxy statement/prospectus. Axonyx and TorreyPines both encourage you to read and consider all of these risks carefully.

Regulatory Approvals (see page 101)

As of the date of this joint proxy statement/prospectus, neither Axonyx nor TorreyPines is required to make filings or to obtain approvals or clearances from any antitrust regulatory authorities in the U.S. or other countries to consummate the merger. In the U.S., Axonyx must comply with applicable federal and state securities laws and the rules and regulations of the NASDAQ Capital Market in connection with the issuance of shares of Axonyx common stock and the merger warrants and the filing of this joint proxy statement/prospectus with the U.S. Securities and Exchange Commission, or SEC. As of the date hereof, the registration statement of which this joint proxy statement/prospectus is a part has not become effective.

NASDAQ Listing (see page 104)

Prior to consummation of the merger, Axonyx intends to file an initial listing application with the NASDAQ Global Market pursuant to NASDAQ's "reverse merger" rules. If such application is accepted, Axonyx anticipates that its common stock will be listed on the NASDAQ Global Market following the closing of the merger under the trading symbol "TPTX".

Anticipated Accounting Treatment (see page 105)

The merger will be treated by Axonyx as a reverse merger under the purchase method of accounting in accordance with accounting principles generally accepted in the United States. For accounting purposes, TorreyPines is considered to be acquiring Axonyx in the merger.

Appraisal Rights and Dissenters' Rights (see pages 105 and 157)

Under Delaware law, TorreyPines stockholders are entitled to appraisal rights in connection with the merger. Holders of Axonyx common stock are not entitled to appraisal rights in connection with the merger. For more information about appraisal rights, see the provisions of Section 262 of the Delaware General Corporation Law, referred to as the DGCL, attached to this joint proxy statement/prospectus as *Annex C*, and the section entitled "The Merger Appraisal Rights" in this joint proxy statement/prospectus.

Under Nevada law, Axonyx stockholders are entitled to dissenters' rights in connection with the proposed reincorporation of Axonyx, and Axonyx stockholders who would receive in connection with the reverse stock split cash in lieu of a fractional share of Axonyx stock will be entitled to certain dissenters' rights in connection with the proposed reverse stock split. For more information about Axonyx dissenters' rights, see the provisions of the Nevada Revised Statutes, referred to as the NRS, attached to this joint proxy statement/prospectus as *Annex D* and the sections entitled "Axonyx Proposal No. 2: Approval of the Amendment to Axonyx's Articles of Incorporation Effecting the Reverse Stock Split Dissenters' Rights" and "Axonyx Proposal No. 4: Approval of Change of Axonyx's State of Incorporation from Nevada to Delaware Dissenters' Rights" in this joint proxy statement/prospectus.

Comparison of Stockholder Rights (see pages 143 and 279)

Axonyx is currently incorporated under the laws of the State of Nevada. Accordingly, the rights of the stockholders of Axonyx are currently governed by the NRS and Axonyx's articles of incorporation and bylaws, which were created under Nevada law. TorreyPines is currently incorporated under the laws of the State of Delaware. Accordingly, the rights of the stockholders of TorreyPines are currently governed by the DGCL and TorreyPines' certificate of incorporation and bylaws, which were created under Delaware law. If Axonyx Proposal No. 4 is approved by Axonyx's stockholders, at the time of the completion of the merger, Axonyx will be reincorporated in the State of Delaware and, accordingly, the rights of the stockholders of Axonyx following the reincorporation will be governed by the DGCL and by a new certificate of incorporation, attached to this joint proxy statement/prospectus as *Annex G*, and new bylaws, attached to this joint proxy statement/prospectus as *Annex H*, of Axonyx created under Delaware law. If the merger is completed, TorreyPines stockholders will be entitled to become stockholders of Axonyx, and, assuming approval of Axonyx Proposal No. 4, their rights following the merger will also be governed by the DGCL and by the new certificate of incorporation and bylaws of Axonyx created under Delaware law. The rights of current Axonyx stockholders differ from the rights of Axonyx stockholders following the reincorporation and the merger, as more fully described under the section entitled "Axonyx Proposal No. 4: Approval of Change of Axonyx's State of Incorporation from Nevada to Delaware" in this joint proxy statement/prospectus. The rights of TorreyPines stockholders differ from the rights of Axonyx stockholders following the reincorporation and the merger, as more fully described under the section entitled "Comparison of Rights of Holders of Axonyx Stock and TorreyPines Stock" in this joint proxy statement/prospectus.

Adoption of the Axonyx 2006 Equity Incentive Plan (see page 161)

Axonyx stockholders are being asked to approve the adoption of the Axonyx 2006 Equity Incentive Plan, contingent upon and effective as of immediately following the effective time of the merger. The affirmative vote of the holders of a majority of the Axonyx common stock having voting power present in person or represented by proxy at the Axonyx annual meeting is required for approval of Axonyx Proposal No. 5.

SELECTED HISTORICAL AND UNAUDITED PRO FORMA CONDENSED COMBINED FINANCIAL DATA

The following tables present summary historical financial data for Axonyx and TorreyPines, summary unaudited pro forma condensed combined financial data for Axonyx and TorreyPines, and comparative historical and unaudited pro forma per share data for Axonyx and TorreyPines.

Selected Historical Consolidated Financial Data of Axonyx

The selected financial data as of December 31, 2005 and 2004 and for the years ended December 31, 2005, 2004 and 2003 are derived from Axonyx's U.S. consolidated financial statements prepared using accounting principles generally accepted in the United States, referred to as GAAP, which have been audited by Eisner LLP, independent registered public accounting firm, and are included in this joint proxy statement/prospectus. The selected financial data as of December 31, 2003, 2002 and 2001 and for the years ended December 31, 2002 and 2001 are derived from Axonyx's consolidated financial statements, which have been audited by Eisner LLP, independent registered public accounting firm, and are not included in this joint proxy statement/prospectus. The statement of operations data for the six months ended June 30, 2006 and 2005, as well as the balance sheet data as of June 30, 2006 are derived from Axonyx's unaudited condensed consolidated financial statements included in this joint proxy statement/prospectus. The financial data should be read in conjunction with "Axonyx's Management's Discussion and Analysis of Financial Condition and Results of Operations" and Axonyx's consolidated and condensed consolidated financial statements and related notes appearing elsewhere in this joint proxy statement/prospectus. The historical results are not necessarily indicative of results to be expected in any future period.

	Years Ended December 31,					Six Months Ended June 30, (unaudited)	
	2005	2004	2003	2002	2001	2006	2005
(In thousands, except per share data)							
Statement of Operations Data:							
Total revenues	\$ 403	\$ 2,275	\$ 1,000	\$ 0	\$ 0	\$ 0	\$ 403
Research and development expenses	24,621	23,741	5,821	3,852	5,153	5,619	16,673
General and administrative expenses	5,143	8,250	3,459	2,505	3,277	3,553	2,876
Loss from operations	(29,571)	(30,883)	(8,280)	(6,357)	(8,430)	(9,172)	(19,356)
Net loss	(28,614)	(28,780)	(8,106)	(6,256)	(8,144)	(8,200)	(18,612)
Net loss per share	(.53)	(.58)	(.30)	(.36)	(.53)	(.15)	(.35)
Weighted average shares outstanding (in thousands)	53,668	49,977	27,207	17,265	15,423	53,681	53,661
	As of December 31,					As of June 30, 2006 (unaudited)	
	2005	2004	2003	2002	2001		
(In thousands)							

Selected Consolidated Balance Sheet Data:

Cash, cash equivalents and short-term investments	\$ 58,338	\$ 90,591	\$ 28,780	\$ 4,474	\$ 9,115	\$ 50,730
Total assets	64,042	101,394	28,815	7,984	9,211	55,472
Accumulated deficit	(91,122)	(62,508)	(33,728)	(25,622)	(19,366)	(99,322)
Total stockholders' equity	58,383	86,538	26,651	6,649	8,191	51,026

Selected Historical Financial Data of TorreyPines

The selected financial data as of December 31, 2004 and 2005 and for the years ended December 31, 2003, 2004 and 2005 are derived from the audited consolidated financial statements of TorreyPines, included in this joint proxy statement/prospectus. The selected financial data as of December 31, 2001, 2002 and 2003 and for the years ended December 31, 2001 and 2002 are derived from the audited consolidated financial statements of TorreyPines, not included in this joint proxy statement/prospectus. The statement of operations and cash flow data for the three and six months ended June 30, 2005 and 2006, as well as the balance sheet data as of June 30, 2006 are derived from the unaudited consolidated financial statements of TorreyPines, included in this joint proxy statement/prospectus. The financial data should be read in conjunction with "TorreyPines' Management's Discussion and Analysis of Financial Condition and Results of Operations" and TorreyPines' financial statements and related notes appearing elsewhere in this joint proxy statement/prospectus. The historical results are not necessarily indicative of results to be expected in any future period.

	Year Ended December 31,					For the Six Months Ended June 30, (unaudited)	
	2001	2002	2003	2004	2005	2005	2006
(In thousands, except per share amounts)							
Statement of Operations Data:							
Revenue	\$ 3,780	\$ 2,818	\$ 3,644	\$ 3,551	\$ 7,967	\$ 3,392	\$ 4,925
Operating expenses:							
Research and development	6,516	8,158	14,729	11,373	17,314	7,171	13,144
General and administrative	827	1,261	1,627	2,398	2,583	1,184	1,278
Stock-based compensation			8	7	8	3	54
Total operating expenses	7,343	9,419	16,364	13,778	19,905	8,358	14,476
Loss from operations	(3,563)	(6,601)	(12,720)	(10,227)	(11,938)	(4,966)	(9,551)
Interest income (expense), net	145	(169)	(383)	(125)	484	247	17
Gain (loss) on asset disposal				(4)	(88)		2
Net loss	(3,418)	(6,770)	(13,103)	(10,356)	(11,542)	(4,719)	(9,532)
Dividends and accretion to redemption value of redeemable convertible preferred stock	(804)	(1,267)	(1,870)	(2,593)	(4,434)	(2,176)	(2,296)
Net loss attributable to common stockholders	\$ (4,222)	\$ (8,037)	\$ (14,973)	\$ (12,949)	\$ (15,976)	\$ (6,895)	\$ (11,828)
Basic and diluted net loss per share attributable to common stockholders	\$ (1.44)	\$ (2.68)	\$ (4.95)	\$ (4.22)	\$ (4.98)	\$ (2.19)	\$ (3.58)
Shares used to compute basic and diluted net loss per share attributable to common stockholders	2,929,494	2,997,931	3,022,222	3,067,283	3,205,593	3,145,116	3,299,594

	As of December 31,					As of June 30, (unaudited)
	2001	2002	2003	2004	2005	2006
(in thousands)						

Selected Balance Sheet Data:						
Cash and cash equivalents	\$ 12,523	\$ 16,072	\$ 9,293	\$ 27,629	\$ 28,757	\$ 26,863
Working capital	11,203	14,245	6,541	24,357	24,806	20,860
Total assets	16,268	20,526	12,942	29,888	31,104	28,961
Long-term debt, net of current portion	1,387	1,751	2,233	591	3,826	5,975

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	As of December 31,					As of June 30, (unaudited) 2006
Redeemable convertible preferred stock	17,952	29,236	35,806	67,584	72,018	80,637
Accumulated deficit	(6,915)	(14,952)	(29,925)	(42,874)	(58,850)	(70,679)
Total stockholders' deficit	(6,826)	(14,861)	(29,472)	(42,381)	(58,341)	(69,698)
Other Data: (years ended December 31)						
Net cash used in operating activities	(403)	(5,776)	(12,889)	(8,291)	(911)	(12,655)
Net cash used in investing activities	(1,763)	(1,871)	(264)	(54)	(702)	(133)
Net cash provided by financing activities	10,114	11,196	6,374	26,710	2,729	10,695

**Selected Unaudited Pro Forma Condensed Combined Financial Data of Axonyx and TorreyPines
(In thousands, except per share amounts)**

The following selected unaudited pro forma condensed combined financial information was prepared using the purchase method of accounting. For accounting purposes, TorreyPines is considered to be acquiring Axonyx in the merger. TorreyPines' and Axonyx's unaudited pro forma condensed combined balance sheet data assume that the merger took place on June 30, 2006 and combine TorreyPines' historical consolidated balance sheet at June 30, 2006 with Axonyx's historical condensed consolidated balance sheet at June 30, 2006. TorreyPines' and Axonyx's unaudited pro forma condensed combined statement of operations data assume that the merger took place as of January 1, 2005 and January 1, 2006, respectively. The unaudited pro forma condensed combined statement of operations data for the year ended December 31, 2005 combine TorreyPines' historical consolidated statement of operations for the year then ended with Axonyx's historical consolidated statement of operations for the year then ended. The unaudited pro forma condensed combined statement of operations data for the six months ended June 30, 2006 combine TorreyPines' historical consolidated statement of operations for the six months then ended with Axonyx's historical condensed consolidated statement of operations for the six months ended June 30, 2006.

The selected unaudited pro forma condensed combined financial data are presented for illustrative purposes only and are not necessarily indicative of the combined financial position or results of operations of future periods or the results that actually would have been realized had the entities been a single entity during these periods. The selected unaudited pro forma condensed combined financial data as of and for the six months ended June 30, 2006 and for the year ended December 31, 2005 are derived from the unaudited pro forma condensed combined financial information and should be read in conjunction with that information. For more information, please see the section entitled "Unaudited Pro Forma Condensed Combined Financial Statements" in this joint proxy statement/prospectus.

	For the Year Ended December 31, 2005	For the Six Months Ended June 30, 2006
Unaudited Pro Forma Condensed Combined Statement of Operations Data:		
Total revenue	\$ 8,370	\$ 4,925
Research and development expenses	41,935	18,763
General and administrative expenses	7,726	4,831
Stock-based compensation expense	8	54
Cost of product sales	210	
Loss from operations	(41,509)	(18,723)
Net loss	(40,156)	(17,732)
Basic and diluted net loss per share	\$ (0.33)	\$ (0.15)
		As of June 30, 2006
Unaudited Pro Forma Condensed Combined Balance Sheet Data:		
Cash, cash equivalents and short-term investments	\$ 77,593	
Working capital		60,407
Total assets		84,433
Long-term obligations, less current portion		5,975
Stockholders' equity		54,888

Comparative Historical and Unaudited Pro Forma Per Share Data

The following information does not give effect to the reverse stock split of Axonyx common stock described in Axonyx Proposal No. 2.

The information below reflects the historical net loss and book value per share of Axonyx common stock and the historical net loss and book value per share of TorreyPines common stock in comparison with the unaudited pro forma net loss and book value per share after giving effect to the proposed merger of Axonyx with TorreyPines on a purchase basis.

You should read the tables below in conjunction with the audited and unaudited financial statements of Axonyx included in this joint proxy statement/prospectus and audited and unaudited financial statements of TorreyPines included in this joint proxy statement/prospectus and the related notes and the unaudited pro forma condensed financial information and notes related to such financial statements included elsewhere in this joint proxy statement/prospectus.

AXONYX

	Year Ended December 31, 2005	Six Months Ended June 30, 2006
	<u> </u>	<u> </u>
Historical Per Common Share Data:		
Net loss per common share basic and diluted	\$ (0.53)	\$ (0.15)
Book value per share	\$ 1.09	\$ 0.95

TORREYPINES

	Year Ended December 31, 2005	Six Months Ended June 30, 2006
	<u> </u>	<u> </u>
Historical Per Common Share Data:		
Net loss attributable to common stockholders basic and diluted	\$ (4.98)	\$ (3.58)
Book value per share	\$ (17.70)	\$ (20.94)

TORREYPINES AND AXONYX

	Year Ended December 31, 2005	Six Months Ended June 30, 2006
	<u> </u>	<u> </u>
Combined Unaudited Pro Forma Per Share Data:		
Net loss per common share basic and diluted	\$ (0.33)	\$ (0.15)
Book value per combined share	\$ 0.53	\$ 0.45

MARKET PRICE AND DIVIDEND INFORMATION

Axonyx common stock is listed on the NASDAQ Capital Market under the symbol "AXYX". The following table presents, for the periods indicated, the range of high and low per share sales prices for Axonyx common stock as reported on the NASDAQ Capital Market for each of the periods set forth below. TorreyPines is a private company and its common stock and preferred stock are not publicly traded.

Axonyx Common Stock

	<u>High</u>	<u>Low</u>
Year Ended December 31, 2004		
First Quarter	\$ 7.85	\$ 4.60
Second Quarter	\$ 8.75	\$ 4.57
Third Quarter	\$ 6.14	\$ 3.24
Fourth Quarter	\$ 7.49	\$ 5.10
Year Ended December 31, 2005		
First Quarter	\$ 6.28	\$ 1.15
Second Quarter	\$ 1.63	\$ 1.10
Third Quarter	\$ 1.58	\$ 0.99
Fourth Quarter	\$ 1.19	\$ 0.79
Year Ending December 31, 2006		
First Quarter	\$ 1.25	\$ 0.83
Second Quarter	\$ 1.45	\$ 0.80
Third Quarter (through August 23, 2006)	\$ 0.90	\$ 0.83

Because the market price of Axonyx common stock is subject to fluctuation, the market value of the shares of Axonyx common stock that TorreyPines securityholders will be entitled to receive in the merger may increase or decrease.

Assuming approval of Axonyx Proposal No. 3 and successful application for initial listing with the NASDAQ Global Market, following the consummation of the merger, Axonyx common stock will be listed on the NASDAQ Global Market and will trade under the combined company's new name, "TorreyPines Therapeutics, Inc." and new trading symbol, "TPTX".

As of August 14, 2006, the record date for the Axonyx annual meeting, Axonyx had approximately 334 holders of record of its common stock. As of August 14, 2006, the record date for the TorreyPines special meeting, TorreyPines had approximately 50 holders of record of its common stock and approximately 29 holders of record of its preferred stock. For detailed information regarding the beneficial ownership of certain stockholders of the combined company upon consummation of the merger, see the section entitled "Principal Stockholders of Combined Company" in this joint proxy statement/prospectus.

Dividends

Axonyx has never declared or paid any cash dividends on its capital stock nor does it intend to do so in the foreseeable future. Any future determination to pay cash dividends will be at the discretion of Axonyx's board of directors and will depend upon its financial condition, operating results, capital requirements, any applicable contractual restrictions and such other factors as Axonyx's board of directors deems relevant.

TorreyPines has never declared or paid any cash dividends on its capital stock nor does it intend to do so in the foreseeable future.

RISK FACTORS

The combined company will be faced with a market environment that cannot be predicted and that involves significant risks, many of which will be beyond its control. In addition to the other information contained in this joint proxy statement/prospectus, you should carefully consider the material risks described below before deciding how to vote your shares of common stock.

Risks Related to the Merger

Some of Axonyx's and TorreyPines' officers and directors have conflicts of interest that may influence them to support or approve the merger with regard to your interests.

Certain officers and directors of Axonyx and TorreyPines participate in arrangements that provide them with interests in the merger that are different from yours, including, among others, the continued service as an officer or director of the combined company, severance benefits, the acceleration of stock option vesting, continued indemnification and the potential ability to sell an increased number of shares of common stock of the combined company. For example, Axonyx has entered into a change of control agreement with each of its executive officers that may result in the receipt by such executive officers of cash severance payments and other benefits with a total value of approximately \$2.6 million (collectively, not individually, and excluding the value of any accelerated vesting of stock options or lapsing of any post-termination stock option exercise restrictions) and the acceleration of certain stock options held by those officers to purchase shares of Axonyx common stock, based on data available as of August 23, 2006 and assuming a qualifying termination of employment of each executive officer's employment as of such date. In addition, the closing of the merger will result in the acceleration of vesting of the stock options to purchase approximately 1,110,625 shares of Axonyx common stock held by Axonyx's executive officers and directors, whether or not there is a qualifying termination of such officer's employment, and certain Axonyx and TorreyPines directors will continue to serve on the board of directors of the combined company following the consummation of the merger. These interests, among others, may influence the officers and directors of Axonyx and TorreyPines to support or approve the merger. For a more information concerning the interests of Axonyx's and TorreyPines' executive officers and directors, see the sections entitled "The Merger Interests of Axonyx's Directors and Executive Officers in the Merger" and "The Merger Interests of TorreyPines' Directors and Executive Officers in the Merger" in this joint proxy statement/prospectus.

The exchange ratio is not adjustable based on the market price of Axonyx common stock so the merger consideration at the closing may have a greater or lesser value than at the time the merger agreement was signed.

The merger agreement has set the exchange ratio for the TorreyPines common and preferred stock, and the exchange ratio is only adjustable upward or downward upon an Axonyx permitted out-license or a TorreyPines permitted out-license prior to closing the transaction. Any changes in the market price of the Axonyx common stock will not affect the number of shares TorreyPines securityholders will be entitled to receive pursuant to the merger. Therefore, if the market price of the Axonyx common stock declines from the market price on the date of the merger agreement prior to the closing of the merger, TorreyPines securityholders could receive merger consideration with considerably less value. Similarly, if the market price of the Axonyx common stock increases from the market price on the date of the merger agreement prior to the closing of the merger, TorreyPines securityholders could receive merger consideration with considerably more value than their shares of TorreyPines capital stock and the Axonyx stockholders immediately prior to the merger will not be compensated for the increased market value of the Axonyx common stock. The merger agreement does not include a price-based termination right. Because the exchange ratio does not adjust as a result of changes in the value of Axonyx common stock, for each one percentage point that the market value of Axonyx common stock rises or declines, there is a corresponding one percentage point rise or decline, respectively, in the value of the total merger consideration issued to TorreyPines securityholders. For

example, on June 7, 2006, the date of the execution of the merger agreement, the closing price of Axonyx common stock, as reported on the NASDAQ Global Market, was \$0.95 per share. Assuming that a total of 68.0 million shares of Axonyx common stock are issued to TorreyPines stockholders upon the closing of the merger at a per share value of \$0.95 per share, the aggregate merger consideration to be issued to TorreyPines stockholders in the merger would be approximately \$64.6 million. If, however, the closing price of Axonyx common stock on the date of closing of the merger had declined from \$0.95 per share to, for example, \$0.76 per share, a decline of 20%, the aggregate merger consideration to be issued to TorreyPines stockholders in the merger would decrease from approximately \$64.6 million to approximately \$51.7 million, a decline of \$12.9 million or 20%.

Failure to complete the merger may result in Axonyx or TorreyPines paying a termination fee or expenses to the other and could harm Axonyx's or TorreyPines' common stock price and future business and operations.

If the merger is not completed, Axonyx or TorreyPines are subject to the following risks:

if the merger agreement is terminated under certain circumstances, Axonyx or TorreyPines will be required to pay the expenses of the other party, up to a maximum of \$1 million;

if the merger agreement is terminated under certain circumstances, Axonyx or TorreyPines will be required to pay the other party a termination fee of \$2 million, less any expenses of the other party already paid;

the price of Axonyx stock may decline; and

costs related to the merger, such as legal and accounting fees which Axonyx and TorreyPines estimate will total approximately \$0.8 million and \$0.8 million, respectively, must be paid even if the merger is not completed.

In addition, if the merger agreement is terminated and Axonyx's or TorreyPines' board of directors determines to seek another business combination, there can be no assurance that it will be able to find a partner willing to provide equivalent or more attractive consideration than the consideration to be provided by each party in the merger.

The merger may be completed even though material adverse changes may result from the announcement of the merger, industry-wide changes and other causes.

In general, either Axonyx or TorreyPines can refuse to complete the merger if there is a material adverse change affecting the other party between June 7, 2006, the date of the merger agreement, and the closing. However, certain types of changes do not permit either party to refuse to complete the merger, even if such change would have a material adverse effect on Axonyx or TorreyPines, including:

changes due to the announcement or pendency of the merger;

changes resulting from or relating to any change in accounting requirements or principles or any change in applicable laws, rules or regulations or the interpretation thereof; or

with respect to Axonyx, changes resulting from a change in the stock price or trading volume of Axonyx, excluding any underlying effect that may have caused such change.

If adverse changes occur but Axonyx and TorreyPines must still complete the merger, the combined company's stock price may suffer. This in turn may reduce the value of the merger to the stockholders of TorreyPines.

The market price of the combined company's common stock may decline as a result of the merger.

The market price of the combined company's common stock may decline as a result of the merger for a number of reasons including if:

the combined company does not achieve the perceived benefits of the merger as rapidly or to the extent anticipated by financial or industry analysts;

the effect of the merger on the combined company's business and prospects is not consistent with the expectations of financial or industry analysts; or

investors react negatively to the effect on the combined company's business and prospects from the merger.

Axonix and TorreyPines stockholders may not realize a benefit from the merger commensurate with the ownership dilution they will experience in connection with the merger.

If the combined company is unable to realize the strategic and financial benefits currently anticipated from the merger, Axonix and TorreyPines stockholders will have experienced substantial dilution of their ownership interests in their respective companies without receiving any commensurate benefit.

During the pendency of the merger, Axonix and TorreyPines may not be able to enter into a business combination with another party at a favorable price because of restrictions in the merger agreement, which could adversely affect their respective business.

Covenants in the merger agreement impede the ability of Axonix and TorreyPines to make acquisitions or complete other transactions that are not in the ordinary course of business pending completion of the merger. As a result, if the merger is not completed, the parties may be at a disadvantage to their competitors. In addition, while the merger agreement is in effect and subject to very narrowly defined exceptions, such as an Axonix permitted out-license or a TorreyPines permitted out-license, each party is prohibited from soliciting, initiating, encouraging or entering into certain extraordinary transactions, such as a merger, sale of assets or other business combination outside the ordinary course of business, with any third party. Any such transactions could be favorable to such party's stockholders.

Certain provisions of the merger agreement may discourage third parties from submitting alternative takeover proposals, including proposals that may be superior to the arrangements contemplated by the merger agreement.

The terms of the merger agreement prohibit each of Axonix and TorreyPines from soliciting alternative takeover proposals or cooperating with persons making unsolicited takeover proposals, except in limited circumstances when such party's board of directors determines in its reasonable, good faith judgment that an unsolicited alternative takeover proposal is or is reasonably likely to lead to a superior takeover proposal and is reasonably capable of being consummated and that failure to cooperate with the proponent of the proposal could reasonably be considered a breach of the board's fiduciary duties. In addition, under certain circumstances Axonix or TorreyPines would be required to pay a termination fee of \$2 million to the other party, including upon termination of the merger agreement by a party's board of directors if it decides to recommend a superior proposal. This termination fee may discourage third parties from submitting alternative takeover proposals to Axonix or TorreyPines or their stockholders, and may cause the respective boards of directors to be less inclined to recommend an alternative proposal.

Because the lack of a public market for the TorreyPines shares makes it difficult to evaluate the fairness of the merger, the stockholders of TorreyPines may receive consideration in the merger that is greater than or less than the fair market value of the TorreyPines shares.

The outstanding capital stock of TorreyPines is privately held and is not traded in any public market. The lack of a public market makes it extremely difficult to determine the fair market value of TorreyPines. Because the percentage of Axonyx equity to be issued to TorreyPines stockholders was determined based on negotiations between the parties, it is possible that the value of the Axonyx common stock and the merger warrants to be issued in connection with the merger will be greater than the fair market value of TorreyPines. Alternatively, it is possible that the value of the shares of Axonyx common stock and the merger warrants to be issued in connection with the merger will be less than the fair market value of TorreyPines.

If the conditions to the merger are not met, the merger will not occur.

Even if the merger is approved by the stockholders of Axonyx and TorreyPines, specified conditions must be satisfied or waived to complete the merger. These conditions are described in detail in the merger agreement. Axonyx and TorreyPines cannot assure you that all of the conditions will be satisfied. If the conditions are not satisfied or waived, the merger will not occur or will be delayed, and Axonyx and TorreyPines each may lose some or all of the intended benefits of the merger.

Risks Related to Axonyx

In addition to the other information contained in this joint proxy statement/prospectus, you should carefully consider the material risks described below. As discussed above, Axonyx has entered into the merger agreement with merger sub and TorreyPines pursuant to which merger sub will merge with and into TorreyPines, with TorreyPines as the surviving corporation becoming a wholly owned subsidiary of Axonyx.

Axonyx has had clinical trial failures with its lead compound and may not be able to find a partner to continue development.

Axonyx has not achieved statistical significance in the primary endpoints in the Phase III trials conducted to date with its lead compound, Phenserine. Axonyx is seeking a partner to continue the development of Phenserine, including conducting additional Phase III trials. These trials are costly. Axonyx cannot assure that it will be able to successfully conclude a deal with a partner. If Axonyx does find a partner to continue developing Phenserine, Axonyx cannot assure that the partner will successfully develop or commercialize Phenserine.

Axonyx is a defendant in a class action lawsuit and a stockholder derivative lawsuit which, if determined adversely, could have a material adverse affect on it.

A class action securities lawsuit and a stockholder derivative lawsuit have been filed against Axonyx as described in the section entitled "Axonyx's Business Legal Proceedings" in this joint proxy statement/prospectus. Axonyx is defending against these actions vigorously; however, it does not know what the outcome of these proceedings will be and, if Axonyx does not prevail, Axonyx may be required to pay substantial damages or settlement amounts. Furthermore, regardless of the outcome, Axonyx may incur significant defense costs, and the time and attention of its management may be diverted from normal business operations. If Axonyx is ultimately required to pay significant defense costs, damages or settlement amounts, such payments could materially and adversely affect its operations and results. In any event, publicity surrounding the lawsuits and/or any outcome unfavorable to Axonyx could adversely affect its reputation and share price. The uncertainty associated with substantial unresolved lawsuits could harm Axonyx's business, financial condition and reputation.

Axonyx has certain obligations to indemnify its officers and directors and to advance expenses to such officers and directors. Although Axonyx has purchased liability insurance for its directors and

officers, if its insurance carriers should deny coverage, or if the indemnification costs exceed the insurance coverage, Axonyx may be forced to bear some or all of these indemnification costs directly, which could be substantial and may have an adverse effect on its business, financial condition, results of operations and cash flows. If the cost of Axonyx's liability insurance increases significantly, or if this insurance becomes unavailable, Axonyx may not be able to maintain or increase its levels of insurance coverage for its directors and officers, which could make it difficult to attract or retain qualified directors and officers.

If Axonyx fails to continue to meet all applicable NASDAQ Capital Market requirements and NASDAQ determines to delist its common stock, the delisting could adversely affect the market liquidity of its common stock and the market price of its common stock could decrease.

Axonyx's common stock is listed on the NASDAQ Capital Market. In order to maintain its listing, Axonyx must meet minimum financial and other requirements. If Axonyx is unable to comply with NASDAQ's listing standards, NASDAQ may determine to delist Axonyx's common stock from the NASDAQ Capital Market. On December 21, 2005, Axonyx received notice from NASDAQ stating that it was out of compliance with bid price requirements because the closing bid price for its common stock was below \$1.00 per share for 30 consecutive business days. On March 8, 2006 Axonyx received a letter from NASDAQ that it had regained compliance with the \$1.00 per share minimum bid price requirement for continued listing on the NASDAQ Capital Market. On August 2, 2006 Axonyx received notice from NASDAQ stating that it was out of compliance with the minimum bid price compliance because the closing price of its common stock had fallen below \$1.00 for 30 consecutive business days. In accordance with the NASDAQ Marketplace Rules, Axonyx has until January 29, 2007, (180 calendar days from August 2, 2006) to regain compliance. Axonyx can regain compliance with the minimum bid price rule if the bid price of its common stock closes at \$1.00 or higher for a minimum of ten consecutive business days during the initial 180-day period, although NASDAQ may, in its discretion, require Axonyx to maintain a bid price of at least \$1.00 per share for a period in excess of ten consecutive business days (but generally no more than 20 consecutive business days) before determining that Axonyx has demonstrated the ability to maintain long-term compliance. If compliance is not achieved by January 29, 2007, Axonyx will be eligible for an additional 180-day compliance period if it meets the NASDAQ Capital Market initial listing criteria as set forth in NASDAQ Marketplace Rule 4310(c) other than the minimum bid price requirement. If Axonyx is not eligible for an additional compliance period, or does not regain compliance during any additional compliance period, NASDAQ will provide written notice to Axonyx that its securities will be delisted. At such time, Axonyx would be able to appeal the delisting determination to a NASDAQ Listing Qualifications Panel. There is no assurance that at the end of this process Axonyx's common stock would continue to be listed on the NASDAQ Capital Market. If Axonyx's common stock is delisted for any reason, it could reduce the value of Axonyx's common stock and its liquidity. Delisting could also adversely affect Axonyx's ability to obtain financing for the continuation of its operations or to use its common stock in acquisitions. Delisting could result in the loss of confidence by suppliers, customers and employees. Delisting would prevent Axonyx from satisfying a closing condition for the merger, and, in such event, TorreyPines may elect not to consummate the merger.

Axonyx has a limited operating history, a large accumulated deficit and may never become profitable.

Axonyx has a limited operating history upon which investors may base an evaluation of its likely future performance. Since Axonyx began operations in 1997 it has been engaged in developing and conducting its research and clinical programs, recruiting outside directors, employees and key consultants, evaluating potential compounds for in-licensing, and consummating patent licensing agreements. To date, Axonyx has not had any in-house laboratory facilities in which to conduct any research and will not have any operational laboratories of its own in the near future. Axonyx has had only limited revenue from license fees in the amount of \$3.2 million to date. As of June 30, 2006, Axonyx had an accumulated deficit of \$99.3 million and its operating losses are continuing.

Axonyx has no products available for sale and it may never be successful in developing products suitable for commercialization.

With the exception of Phenserine, all of Axonyx's product candidates are at an early stage of development and all of its product candidates will require expensive and lengthy testing and regulatory clearances. None of Axonyx's product candidates have been approved by regulatory authorities. Axonyx has no products available for sale and does not expect to have any products commercially available for several years, if at all. There are many reasons that Axonyx may fail in its efforts to develop its product candidates, including that:

Axonyx's product candidates may be ineffective or toxic or may not receive regulatory approval;

Axonyx's product candidates may be too expensive to manufacture or market or may not achieve broad market acceptance;

Axonyx's product candidates may face generic competition by the time they reach the market place and therefore preclude a return on its investment;

third parties may hold proprietary rights that may preclude Axonyx from developing or marketing its product candidates; or

third parties may market equivalent or superior products.

The success of Axonyx's business depends upon its ability to successfully in-license compounds and develop potential product candidates.

Axonyx cannot assure investors that its efforts will lead to the successful identification and in-licensing of potential compounds, or if so licensed, that its efforts will lead to the successful development of any therapeutic agents. If any potential products are identified, they will require significant additional research, development, and clinical testing, regulatory approval and substantial additional investment prior to commercialization. Any potential products Axonyx identifies may not be successfully developed, prove to be safe and efficacious in clinical trials, meet applicable regulatory standards, or be capable of being produced in commercial quantities at acceptable costs or be successfully marketed.

Axonyx does not currently nor does it intend to engage in drug discovery for product candidate acquisition. Axonyx's strategy for obtaining additional product candidates is to utilize the relationships of its management team and scientific consultants to identify product candidates for in-licensing from companies, universities, research institutions and other organizations. It is possible that Axonyx may not succeed in acquiring additional drug candidates on acceptable terms or at all.

Axonyx's product candidates may not successfully complete clinical trials required for commercialization, and as a result its business may never achieve profitability.

To obtain regulatory approvals needed for the sale of its product candidates, Axonyx must demonstrate through testing and clinical trials that each product candidate is both safe and effective for the human population that it was intended to treat. The clinical trial process is complex and the regulatory environment varies widely from country to country. Positive results from testing and early clinical trials do not ensure positive results in the Phase III human clinical trials. Many companies in Axonyx's industry have suffered significant setbacks in Phase III, potentially pivotal clinical trials, even after promising results in earlier trials. The results from Axonyx's trials, if any, may show that its drug candidates produce undesirable side effects in humans or that its product candidates are not safe or effective or not safe or effective enough to compete in the marketplace. Such results could cause Axonyx or regulatory authorities to interrupt, delay or halt clinical trials of a product candidate. Moreover, Axonyx, the FDA or foreign regulatory authorities may suspend or terminate clinical trials at any time if Axonyx or they believe the trial participants face unacceptable health risks or that Axonyx's

product candidates are not safe or effective enough. Clinical trials are lengthy and expensive. They require adequate supplies of drug substance and sufficient patient enrollment. Patient enrollment is a function of many factors, including:

the size of the patient population;

the nature of the protocol (i.e., how the drug is given, and the size and frequency of the dose and use of placebo control);

the proximity of patients to clinical sites; and

the eligibility criteria for the clinical trial (i.e., age group, level of symptoms, concomitant diseases or medications etc.).

Delays in patient enrollment or negative trial outcomes can result in increased costs and longer development times. Even if Axonyx successfully completes clinical trials, it may not be able to file any required regulatory submissions in a timely manner and may not receive regulatory approval for the particular drug candidate that was tested.

In addition, if the FDA or foreign regulatory authorities require additional clinical trials, Axonyx could face increased costs and significant development delays. Changes in regulatory policy or additional regulations adopted during product development and regulatory review of information Axonyx submits could also result in delays or rejections.

Axonyx cannot assure investors that it will have future revenue or operating profits and investors in Axonyx common stock could lose their entire investment.

Axonyx expects to incur substantial operating losses for at least the next several years. Axonyx currently has limited sources of revenue other than interest income and it cannot assure investors that it will be able to develop other revenue sources or that its operations will become profitable, even if Axonyx is able to commercialize any products. Other than interest or similar income and revenue generated by OXIS International, Inc., referred to as OXIS, in which Axonyx held a majority interest prior to December 31, 2004, and whose results were consolidated with Axonyx's through February 28, 2005, the only revenue that Axonyx has realized to date has been fees totaling \$2.8 million paid by Applied Research Systems ARS Holding N.V., or ARS, a subsidiary of Serono International, S.A., under the terms of the Development Agreement and Right to License and the subsequent License Agreement. Axonyx is negotiating a reacquisition of these rights granted to ARS. If Axonyx does reacquire these rights it will not receive any additional payments under that License Agreement. If Axonyx does not generate significant revenue, at some point in the future it may not be in a position to continue operations and investors could lose their entire investment.

If Axonyx fails to comply with the terms of its licensing agreements, its licensors may terminate certain licenses to patent rights, causing Axonyx to lose valuable intellectual property assets.

Under the terms of Axonyx's licensing agreements with each of its patent licensors, New York University, referred to as NYU, and CURE, LLC, referred to as CURE (Axonyx's rights to certain patents under the CURE license are via a license to CURE from the U.S. Public Health Service, referred to as the PHS, on behalf of the National Institute of Aging), Axonyx's license to the patent rights covering certain of its product candidates may be terminated if Axonyx fails to meet its obligations to the licensors.

Under its research and license agreement with NYU, as amended, Axonyx is obligated to meet certain deadlines for the preclinical and clinical development of the licensed Amyloid Inhibitory Peptide, or AIPs, and the Prion Inhibitory Peptide, or PIPs, technology, payment of royalties, and filing, maintenance and prosecution of the covered patent rights. NYU can terminate the research and license agreement for cause: (a) if Axonyx does not cure within 60 days of notice of a material breach or

default in the performance or observance of any of the provisions of the agreement, (b) if Axonyx fails to pay any amounts due under the agreement, within 30 days after receiving notice from NYU specifying such breach or default, or automatically or (c) immediately without further action, if Axonyx discontinues its business or becomes insolvent or bankrupt.

Axonyx is obligated, under the provisions of the license agreement with CURE to pay certain royalty payments, pay for the filing, prosecution and maintenance of the patent rights covered by the agreement, meet certain development timelines and comply with certain pass through provisions from the license agreement between CURE and the PHS. The reversionary rights provision of the license agreement sets deadlines by which Axonyx is to achieve certain development milestones, including commencing clinical trials, for Phenserine. If Axonyx fails to comply with the development benchmarks or the commercial development plan, or pay the required penalty fees, then all rights to the patents may, at CURE's election, revert to CURE, and the agreement will terminate.

Certain pass through provisions from the license agreement between CURE and the PHS are contained in Axonyx's license agreement with CURE. These pass through provisions are binding on Axonyx as if it is a party to the license agreement with the PHS. Those provisions cover certain reserved government rights to the licensed patents, obligations to meet certain benchmarks and perform a commercial development plan, manufacturing restrictions, as well as indemnification, termination and modification of rights. PHS reserves on behalf of the U.S. government or any foreign government or international organization pursuant to any existing or future treaty or agreement with the U.S. government an irrevocable, nonexclusive, nontransferable, royalty free license for the practice of all inventions licensed pursuant to the license agreement between CURE and PHS for research or other purposes. After making the first commercial sale of licensed products until expiration of the agreement, Axonyx must use its reasonable best efforts to make the licensed products and processes reasonably accessible to the U.S. public. PHS reserves the right to terminate or modify the license agreement if it is determined that such action is necessary to meet requirements for public use specified by federal regulations. Axonyx is also obligated, under these pass through provisions, to manufacture licensed products substantially in the U.S., unless a written waiver is obtained in advance from the PHS. Axonyx undertook to develop and commercialize the licensed products covered by the patents pursuant to a commercial development plan contained in a pass through provision from the CURE-PHS license agreement. If Axonyx fails to cure non-compliance with the commercial development plan after notice from CURE within a reasonable period of time, it could be in material breach of the agreement. Axonyx has not, as of the date of this joint proxy statement/prospectus, received notice of default of any of its obligations from CURE, or the PHS.

If Axonyx receives written notice of its default or material breach of any of its obligations under the licensing agreements, it must cure the default within 90 days under the license with CURE or 60 days (or concerning payments, 30 days) under the license with NYU, or the relevant licensor may terminate the license. After such termination, Axonyx would not be entitled to make any further use whatsoever of the licensed patent rights, or any related licensed know-how. Upon termination of its license agreements, Axonyx is required to return the licensed technology to its licensors.

Axonyx anticipates undertaking similar payment, development milestone, patent prosecution costs, and termination obligations under applications currently pending with The National Institutes of Health, or NIH, for certain patent rights to Posiphen and BNC, if such licenses are granted. Axonyx's business and prospects could be adversely affected if either or both of these licenses are not granted.

The performance of Axonyx's obligations to the licensors will require increasing expenditures as the development of the licensed drug compounds proceeds. Axonyx cannot guarantee that it will have or be capable of raising the funds necessary to meet its obligations under the license agreements, sublicense part or all of its licensed drug compounds to a third party capable of undertaking the obligations, or fulfill additional licensing obligations.

Third party co-ownership concerning certain of Axonyx's in-licensed patent rights could affect any future decision to commercialize certain product candidates.

There are significant risks regarding the patent rights surrounding BNC, Axonyx's potential butyrylcholinesterase inhibitor product candidate, and Posiphen , a potential pharmaceutical compound for the treatment of AD that is the positive isomer of Phenserine. Because Axonyx is not the sole owner of the patent rights, future commercialization of Posiphen or BNC may be adversely impacted by the patent rights held by a third party with whom it does not currently have licensing agreements. Axonyx is currently seeking licenses from the third party to reduce or eliminate the risks relating to its development and commercialization efforts. Such licenses may not be available on acceptable terms or at all and may impair Axonyx's ability to commercialize BNC or Posiphen . A decision not to commercialize these product candidates could adversely affect Axonyx's business.

Axonyx does not currently have the capability to undertake manufacturing, marketing, or sales of any potential products and it has limited personnel to oversee outsourced clinical testing and the regulatory approval process.

Axonyx has not invested in manufacturing, marketing or product sales resources. Axonyx cannot assure investors that it will be able to acquire such resources if and when needed. It is likely that Axonyx would also need to hire additional personnel skilled in the clinical testing and regulatory compliance process if it develops additional product candidates with commercial potential. Axonyx has no history of manufacturing or marketing. Axonyx cannot assure investors that it will successfully manufacture or market any product it may develop, either independently or under manufacturing or marketing arrangements, if any, with other companies. Axonyx currently does not have any arrangements with other companies, and it cannot assure investors that any arrangements with other companies can be successfully negotiated or that such arrangements will be on commercially reasonable terms. To the extent that Axonyx arranges with other companies to manufacture or market its products, if any, the success of such products may depend on the efforts of those other companies. Axonyx does not currently have the capability to conduct clinical testing in-house and does not currently have plans to develop such a capability. Axonyx outsources its clinical testing to contract research organizations, or CROs. Axonyx currently has one employee and certain other outside consultants who oversee the contract research organizations involved in clinical testing of its compounds. Axonyx cannot assure investors that its limited oversight of the contract research organizations will suffice to avoid significant problems with the protocols and conduct of the clinical trials.

Axonyx depends on contract research organizations to do much of its preclinical and all of its clinical testing.

Axonyx has engaged and continues to engage third party CROs, and other third parties to help Axonyx develop its product candidates. Although Axonyx has designed the clinical trials for its product candidates, the CROs have conducted all of its clinical trials. As a result, many important aspects of Axonyx's drug development, preclinical and clinical programs have been and will continue to be outside of its direct control. In addition, the CROs may not perform all of their obligations under arrangements with Axonyx. If the CROs do not perform clinical trials in a satisfactory manner or breach their obligations to Axonyx, the development and commercialization of any product candidate may be delayed or precluded. Axonyx cannot control the amount and timing of resources these CROs devote to its programs or product candidates. The failure of any of these CROs to comply with any governmental regulations would substantially harm Axonyx's development and marketing efforts and delay or prevent regulatory approval of its product candidates. If Axonyx is unable to rely on clinical data collected by others, it could be required to repeat, extend the duration of, or increase the size of its clinical trials and this could significantly delay commercialization and require significantly greater expenditures.

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If Axonyx needs additional funds, and if it is unable to raise them, it will have to curtail or cease operations.

Axonyx's drug development programs and the potential commercialization of its product candidates require substantial working capital, including expenses for testing, chemical synthetic scale-up, manufacture of drug substance for preclinical testing and clinical trials, toxicology studies, clinical trials of product candidates, payments to its licensors and potential commercial launch of its product candidates. Axonyx's future working capital needs will depend on many factors, including:

the progress and magnitude of its drug development programs;

the scope and results of testing and clinical trials;

the cost, timing and outcome of regulatory reviews;

the costs under current and future license and option agreements for its product candidates, including the costs of obtaining and maintaining patent protection for its product candidates;

the costs of acquiring any technologies or additional product candidates;

the rate of technological advances;

the commercial potential of its product candidates;

the magnitude of its administrative and legal expenses, including office rent; and

the costs of establishing third party arrangements for manufacturing.

Axonyx has incurred negative cash flow from operations since it incorporated and does not expect to generate positive cash flow from its operations for at least the next several years. Although since January 2004, Axonyx has raised approximately \$70 million through financings (less applicable fees) and an additional \$13.2 million through the cash exercise of various warrants and options to purchase its common stock, Axonyx expects that additional financings will be required in the future to fund its operations. Axonyx may not be able to obtain adequate financing to fund its operations, and any additional financing it obtains may be on terms that are not favorable to Axonyx. In addition, any future financings (which may include the issuance of warrants issued in connection with such financings) could substantially dilute its stockholders. If adequate funds are not available Axonyx will be required to delay, reduce or eliminate one or more of its drug development programs, to enter into new collaborative arrangements on terms that are not favorable to Axonyx. For example, any such collaborative arrangements could result in the transfer to third parties of rights that Axonyx considers valuable.

Axonyx's business could be harmed if it fails to protect its intellectual property.

Axonyx's patent position, like that of many pharmaceutical companies, is uncertain and involves complex legal and factual questions for which important legal principles are unresolved. Axonyx may not develop or obtain rights to products or processes that are patentable. Even if it does obtain patents, they may not adequately protect the technology Axonyx owns or has in-licensed. In addition, others may challenge, seek to invalidate, infringe or circumvent any patents Axonyx owns or in-licenses, and rights it receives under those patents may not provide competitive advantages to Axonyx. Further, the manufacture, use or sale of Axonyx's products or processes, if any, may infringe the patent rights of others.

Axonyx has licensed rights to certain patented and patent pending proprietary technology from NYU and CURE to which it is obligated to pay royalties if Axonyx or its sub-licensees develop products based upon the licensed technology, and Axonyx has certain license applications pending with NIH. Because of the substantial length of time, effort and expense associated with bringing new products through development and regulatory approval to the marketplace, the pharmaceutical industry places considerable importance on patent and trade secret protection for new technologies, products and processes. Axonyx is obligated to pay the filing, prosecution and maintenance expenses with regard to patents and patent applications it owns or has licensed. Axonyx and its licensors have filed patent

applications in other countries, and Axonyx may seek additional patents in the future. Axonyx cannot assure investors as to the breadth or degree of protection that any such patents, if issued, will afford Axonyx or that any patents based on the patent applications will be issued at all or that it will be granted licenses to certain patents under its pending license applications. In addition, Axonyx cannot assure investors that others will not independently develop substantially equivalent proprietary information or otherwise obtain access to its know-how or that others may not be issued patents that may require licensing and the payment of significant fees or royalties by Axonyx for the pursuit of its business.

Several pharmaceutical and biotechnology companies, universities and research institutions may have filed patent applications or received patents that cover technologies similar to that of Axonyx. Axonyx's ability to make, use or sell any of its product candidates may be blocked by patents that have been or will be issued to third parties that it may not be aware of. Patent applications are often first published eighteen months or more after filing and the claim scope frequently undergoes substantial change between publication and issuance of a patent. Therefore, until a patent is issued, Axonyx may not be able to determine if a third party has a patent that could preclude Axonyx from commercializing its product candidates. Third party patent applications and patents could significantly reduce the coverage of Axonyx's patents and limit its ability to obtain meaningful patent protection. If other parties obtain patents with conflicting claims, Axonyx may be required to obtain licenses to these patents or to develop or obtain alternative technology. Axonyx may not be able to obtain any such license on acceptable terms or at all. Any failure to obtain such licenses could delay or prevent Axonyx from pursuing the development or commercialization of its product candidates, which would adversely affect its business.

Potential litigation concerning patent rights could involve significant expenses and damage Axonyx's business.

In the U.S., the first to invent a technology is entitled to patent protection on that technology. For patent applications filed prior to January 1, 1996, U.S. patent law provides that a party who invented a technology outside the U.S. is deemed to have invented the technology on the earlier of the date it introduced the invention in the U.S. or the date it filed its patent application. In many foreign countries, the first party to file a patent application on a technology, not the first to invent the technology, is entitled to patent protection on that technology. Under the patent laws of most countries, a product can be found to infringe a third party patent if the third party patent expressly covers the product or method of treatment using the product, or if the third party patent covers subject matter that is substantially equivalent in nature to the product or method, even if the patent does not expressly cover the product or method.

While Axonyx has not received notification of potential infringement of patents held by third parties, with respect to any of its product candidates, litigation, patent opposition and adversarial proceedings could result in substantial costs to Axonyx. Litigation and/or proceedings could be necessary or may be initiated to enforce any patents Axonyx owns or in-licenses, or to determine the scope, validity and enforceability of other parties' proprietary rights and the priority of an invention. The outcome of any of these types of proceedings could significantly affect Axonyx's product candidates and technology. U.S. patents carry a presumption of validity and generally can be invalidated only through clear and convincing evidence.

Under Axonyx's license agreements with NYU and CURE LLC, Axonyx has the right to pursue any actions against third parties for infringement of the patent rights covered by those agreements. Under those arrangements Axonyx is obligated to share any recovery over and above that required for reimbursement of its costs and expenses in bringing the infringement action with its licensors. Under one of those arrangements, Axonyx's failure to affect the discontinuance of any infringement after a certain period of time can reduce its royalty income. An adverse outcome of these proceedings could subject Axonyx to significant liabilities to third parties, require disputed rights to be licensed from third parties or require Axonyx to cease using such technology, any of which could adversely affect its

business. Moreover, the mere uncertainty resulting from the initiation and continuation of any technology related litigation or adversarial proceeding could adversely affect Axonyx's business pending resolution of the disputed matters.

If Axonyx does not exercise its right to prosecute and its licensors institute and prosecute patent proceedings, Axonyx's rights will depend in part upon the manner in which these licensors conduct the proceedings. In any proceedings they elect to initiate and maintain, these licensors may not vigorously pursue or defend or may decide to settle such proceedings on terms that are unfavorable to Axonyx.

Companies and universities that have licensed product candidates to Axonyx for clinical development and marketing are sophisticated competitors that could develop similar products to compete with Axonyx's products.

Licensing product candidates from other companies, universities or individuals does not always prevent them from developing non-identical but competitive products for their own commercial purposes, nor from pursuing patent protection in areas that are competitive with Axonyx. The partners who created these technologies are sophisticated scientists and business people who may continue to do research and development and seek patent protection in the same areas that led to the discovery of the product candidates that they licensed to Axonyx. The development and commercialization of successful new drugs from Axonyx's research program is likely to attract additional research by its licensors in addition to other investigators who have experience in developing products for the memory and cognition market. By virtue of the previous research that led to the discovery of the drugs or product candidates that they licensed to Axonyx, these companies, universities, or individuals may be able to develop and market competitive products in less time than might be required to develop a product with which they have no prior experience.

Despite the use of confidentiality agreements and/or proprietary rights agreements, which themselves may be of limited effectiveness, it may be difficult for Axonyx to protect its trade secrets.

Axonyx relies on trade secrets to protect technology in cases when it believes patent protection is not appropriate or obtainable. However, trade secrets are difficult to protect. While Axonyx requires certain of its academic collaborators, contractors and consultants to enter into confidentiality agreements, Axonyx may not be able to adequately protect its trade secrets or other proprietary information.

Axonyx might face intellectual property claims that may be costly to resolve and could divert management attention.

Axonyx may from time to time be subject to claims of infringement of other parties' proprietary rights. Axonyx could incur substantial costs in defending itself in any suits brought against Axonyx claiming infringement of the patent rights of others or in asserting its patent rights in a suit against another company. Adverse determinations in any litigation could subject Axonyx to significant liabilities to third parties, require Axonyx to seek costly licenses from third parties and prevent Axonyx or its sublicensees from manufacturing and selling its potential products.

If Axonyx's product candidates do not achieve market acceptance, its business may never achieve profitability.

Axonyx's success will depend on the market acceptance of any products it may develop. The degree of market acceptance will depend upon a number of factors, including the receipt and scope of regulatory approvals, the establishment and demonstration in the medical community of the safety and effectiveness of its products and their potential advantages over existing treatment methods, generic competition and reimbursement policies of government and third party payors. Physicians, patients, payors or the medical community in general may not accept or utilize any product that Axonyx may develop.

The carrying value of Axonyx's investment in OXIS International may face future impairment.

Effective March 1, 2005, Axonyx accounted for its investment in OXIS under the equity method of accounting following accounting principles bulletin, or APB, No. 18. Any impairment charge would be required if Axonyx determined that any reduction in the OXIS market value over the carry value was permanent.

Potential technological changes in Axonyx's field of business create considerable uncertainty.

Axonyx is engaged in the biopharmaceutical field, which is characterized by extensive research efforts and rapid technological progress. New developments in AD research are expected to continue at a rapid pace in both industry and academia. Axonyx cannot be assured that research and discoveries by others will not render some or all of its programs or product candidates noncompetitive or obsolete.

Axonyx's business strategy is based in part upon inhibition of amyloid conformational change and amyloid precursor protein production and processing and the application of these new and unproven technologies to the development of biopharmaceutical products for the treatment of AD and other neurological disorders. Axonyx cannot assure investors that unforeseen problems will not develop with these technologies or applications or that commercially feasible products will ultimately be developed by Axonyx.

The markets in which Axonyx seeks to participate are intensely competitive and many of its competitors are larger and have more experience than Axonyx.

There are many companies, both public and private, including well-known pharmaceutical companies, engaged in developing pharmaceutical and biotechnological products for human therapeutic applications in the AD area. Axonyx's major competitors are currently the pharmaceutical companies that are marketing the acetylcholinesterase inhibitors for the treatment of AD. The market for such is dominated primarily by Pfizer with its drug Aricept®. Warner-Lambert (Cognex®), Novartis (Exelon®) and, most recently, Johnson and Johnson (Razadyne®, formerly Reminyl®), have marketed compounds of this type in the U.S. Aricept currently dominates the market with approximately \$1 billion in U.S. sales in 2004. Several other pharmaceutical companies have acetylcholinesterase inhibitors in human clinical trials. In addition, Forrest Laboratories received approval for Namenda® in early 2004 for treatment of moderate to severe AD as a monotherapy or in combination with donepezil, a commonly prescribed acetylcholinesterase inhibitor. Namenda® has a different mechanism of action that is focused on the glutamate pathway. These are large pharmaceutical companies with far ranging capabilities to market their products and to develop follow on product candidates. There can be no guarantees that Axonyx will be able to successfully find a partner to further develop Phenserine and obtain regulatory approval for Phenserine and such approval, even if obtained, may be years away. In addition Axonyx does not have the capability or the resources of marketing a drug and will have to enter into a collaborative relationship with a larger pharmaceutical company in order to market Phenserine. As Phenserine is also an acetylcholinesterase inhibitor, like the majority of the currently marketed drugs, unless the data from future Phenserine clinical trials, if any, reflects the general lack of adverse side effects found in previous clinical trials and the unique mechanism of action involving the inhibition of the beta-amyloid precursor protein found in preclinical studies, it will be difficult to distinguish Phenserine from the currently marketed drugs and gain market share.

Certain smaller pharmaceutical companies may also be competitors. Smaller companies may also prove to be competitors through collaborative arrangements with large pharmaceutical and biotechnology companies. Academic institutions, governmental agencies and other public and private research organizations are also becoming increasingly aware of the commercial value of their inventions and are more actively seeking to commercialize the technology they have developed. Many of these companies have substantially greater capital, research and development and human resources and experience than Axonyx and represent significant long-term competition for Axonyx. In addition, many of these competitors have significantly greater experience than Axonyx in undertaking testing and

clinical trials of new pharmaceutical products and obtaining FDA and other regulatory approvals. Furthermore, if Axonyx or its current or any future licensee is permitted to commence commercial sales of any product, Axonyx or its licensee will also be competing with companies that have greater resources and experience in manufacturing, marketing and sales. Axonyx has no experience in these areas. These other companies may succeed in developing products that are more effective or less costly than any that may be developed by Axonyx or its future licensee and may also prove to be more successful than Axonyx or its future licensee in production and marketing. Competition may increase further as a result of the potential advances in the commercial applicability of peptide chemistry and greater availability of capital for investment in these fields. Other companies are engaged in research and product development based on amyloidogenesis and acetylcholinesterase inhibition.

If Axonyx successfully develops and obtains approval for its product candidates, it will face competition based on the safety and effectiveness of its products, the timing and scope of regulatory approvals, the availability of supply, marketing and sales capability, reimbursement coverage, price, patent position and other factors. Axonyx's competitors may develop or commercialize more effective or more affordable products, or obtain more effective patent protection, than Axonyx does. Accordingly, Axonyx's competitors may commercialize products more rapidly or effectively than it does, which could hurt Axonyx's competitive position.

Axonyx cannot assure investors of FDA approval for its potential products and government regulation may impact Axonyx's development plans.

The FDA and comparable agencies in foreign countries impose rigorous safety and efficacy requirements on the introduction of therapeutic pharmaceutical products through lengthy and detailed laboratory and clinical testing procedures and other costly and time-consuming procedures. Satisfaction of these requirements typically takes a number of years and varies substantially based upon the type, complexity and novelty of the pharmaceutical compounds. One of Axonyx's product candidates is currently in preclinical development, and two are in clinical development, and consequently significant regulatory hurdles remain before any application for regulatory approval can be submitted. Only two of Axonyx's product candidates have been tested in human clinical trials. Axonyx cannot assure investors that the product candidates currently in development will elicit similar results in human testing to the results in animal testing. Axonyx cannot predict with any certainty when it may submit product candidates for FDA or other regulatory approval.

Government regulation also affects the manufacture and marketing of pharmaceutical products. The effect of government regulation may be to delay marketing of Axonyx's new products, if any, for a considerable period of time, to impose costly procedures upon its activities and to furnish a competitive advantage to larger companies that compete with Axonyx. Axonyx cannot assure investors that FDA or other regulatory approval for any products developed by Axonyx will be granted on a timely basis, if at all. Any such delay in obtaining, or failure to obtain, such approvals would adversely affect the marketing of Axonyx's products and the ability to generate product revenue. Government regulation may increase at any time creating additional hurdles for Axonyx. The extent of potentially adverse government regulation which might arise from future legislation or administrative action cannot be predicted.

Axonyx is subject to extensive government regulation and may fail to receive regulatory approval that could prevent or delay the commercialization of its products, if any.

Any approval of Axonyx's product candidates may be contingent on post-marketing studies or other conditions and the approval of any of its product candidates may limit the indicated uses of the product candidate. Further, even if Axonyx's product candidates receive regulatory approval, it may still face difficulties in entering into collaborative arrangements for the marketing and manufacturing of those product candidates. A marketed product, its manufacturer and the manufacturer's facilities are subject to continual review and periodic inspections. The FDA requires that all preclinical and clinical

testing, as well as manufacturing of drug product, meet certain criteria commonly referred to in Axonyx's industry as Good Practices guidelines, including Good Manufacturing Processes, Good Laboratory Practices and Good Clinical Practices. In Axonyx's case, CROs and academic or other sponsored research laboratories that it utilizes for its preclinical and clinical research, as well as active pharmaceutical ingredient manufacturing of drug product, must comply with these guidelines. Axonyx's contracted manufacturers, sponsored research labs and CROs undertake to adhere to Good Manufacturing Processes, Good Laboratory Practices and Good Clinical Practices. In addition, such guidelines and practices may change, and Axonyx's compliance with such changes may have an adverse effect on its business.

The discovery of non-compliance with regulatory requirements with respect to a product, manufacturer or facility may result in restrictions on the product or manufacturer, including withdrawal of the product from the market. The failure to comply with applicable regulatory requirements can, among other things, result in any or all of the following:

finer;

suspended regulatory approvals;

refusal to approve pending applications;

refusal to permit exports from the U.S.;

product recalls;

seizure of products;

injunctions;

operating restrictions; and

criminal prosecutions.

Health care reform measures and third party reimbursement practices are uncertain and may adversely impact the commercialization of Axonyx's products, if any.

The efforts of governments and third party payors to contain or reduce the cost of health care will continue to affect the business and financial condition of drug companies. A number of legislative and regulatory proposals to change the health care system have been proposed in recent years. In addition, an increasing emphasis on managed care in the U.S. has and will continue to increase pressure on drug pricing. While Axonyx cannot predict whether legislative or regulatory proposals will be adopted or what effect those proposals or managed care efforts may have on its business, the announcement and/or adoption of such proposals or efforts could have an adverse effect on Axonyx's decisions to proceed with the development of its product candidates and/or adversely effect its potential future profit margins and financial condition. Sales of prescription drugs depend significantly on the availability of reimbursement to the consumer from third party payors, such as government and private insurance plans. These third party payors frequently require that drug companies give them predetermined discounts from list prices, and they are increasingly challenging the prices charged for medical products and services. Axonyx expects that reimbursement pressures will continue in the future. If Axonyx succeeds in bringing, through collaborative arrangements, one or more products to the market, these products may not be considered cost effective and reimbursement to the consumer may not be available or sufficient to allow Axonyx to sell its products on a competitive basis.

In addition, third-party payors may discontinue or limit reimbursement for, or the use of, the types of drugs being developed by Axonyx. For example, in the United Kingdom, the National Institute for Clinical Excellence, or NICE, recently recommended that National Health Service doctors not prescribe three drugs Aricept, Exelon and Razadyne (formerly Reminyl) to new patients with mild to moderate dementia on the grounds that they are not sufficiently beneficial. These products are

competitive with Axonyx's product candidate Phenserine. If similar action is taken by regulators in the European Community or the U.S., the potential market for Phenserine will be significantly diminished.

If product liability lawsuits are successfully brought against Axonyx, it may incur substantial liabilities and may be required to limit commercialization of its products.

The testing and marketing of product candidates entail an inherent risk of product liability. If Axonyx cannot successfully defend itself against liability claims, it may incur substantial liabilities or be required to limit commercialization of its products. Axonyx's inability to obtain sufficient product liability insurance at an acceptable cost to protect against potential product liability claims could prevent or inhibit the commercialization of pharmaceutical products it develops, alone or with corporate collaborators. Axonyx currently carries clinical trial insurance but does not carry product liability insurance. Axonyx currently maintains clinical trial insurance in the amount of \$5,000,000. When Axonyx decides that product liability insurance is necessary, it may not be able to obtain product liability insurance at a reasonable cost, if at all. While under various circumstances Axonyx is entitled to be indemnified against losses by its corporate collaborators, indemnification may not be available or adequate should any claims arise.

Generic competition for Alzheimer's drugs currently on the market could materially impact Axonyx's future operations.

There are a number of products already on the U.S. market for treatment of AD. For instance, Namenda (memantine hydrochloride), Aricept (donepezil hydrochloride), Razadyne, formerly Reminyl (galantamine hydrobromide or R113675), and Exelon (rivastigmine) are presently being sold in the U.S. for the treatment of AD. The respective primary patents for these products are set to expire (taking into account patent term extensions under 35 U.S.C. § 156) as follows:

Trademark Name	US Patent	Present Patent Expiration date
Namenda	5,061,703	April 11, 2010
Aricept	4,895,841	Nov. 25, 2010
Razadyne, formerly Reminyl	4,663,318	Dec. 14, 2008
Exelon	4,948,807	Aug. 14, 2007

If Axonyx or one of its future prospective competitors who already has a drug on the market cannot successfully defend the patents protecting the products from challenge by a generic drug manufacturer, and a generic manufacturer were thus able to enter the market, Axonyx's results of operations could be materially adversely affected. Currently at least Watson Pharmaceuticals and Ranbaxy, Inc. have obtained tentative approval from the FDA to market a generic version of rivastigmine. The owner of U.S. Patent 4,948,807 is in the early stages of enforcing its patent rights against the generic manufacturers.

Axonyx does not pay cash dividends.

Axonyx has never paid cash dividends and does not presently intend to pay any cash dividends in the foreseeable future.

There is only a limited trading market for Axonyx's common stock and it is possible that investors may not be able to sell their shares easily.

There is currently only a limited trading market for Axonyx's common stock. Axonyx's common stock trades on the NASDAQ Capital Market under the symbol "AXYX" with, until recently, very limited trading volume. Axonyx cannot assure investors that a substantial trading market will be sustained for its common stock.

The market price of Axonyx's stock may be adversely affected by market volatility.

The market price of Axonyx's common stock is likely to be volatile and could fluctuate widely in response to many factors, including:

announcements of the results of clinical trials by Axonyx or its competitors;

developments with respect to patents or proprietary rights;

announcements of technological innovations by Axonyx or its competitors;

announcements of new products or new contracts by Axonyx or its competitors;

actual or anticipated variations in Axonyx's operating results due to the level of drug development expenses and other factors;

changes in financial estimates by securities analysts and whether Axonyx's potential earnings or losses meet or exceed such estimates;

conditions and trends in the pharmaceutical and other industries including the successful market launch of competing products or unfavorable pricing conditions;

new accounting standards;

general economic, political and market conditions and other factors; and

the occurrence of any of the risks described in these "Risk Factors Risks Related to Axonyx."

In the past two years, the price range of the bid quotations for Axonyx's common stock has been between a high of \$7.49 and a low of \$0.80. In the past, following periods of volatility in the market price of the securities of companies in Axonyx's industry, securities class action litigation, such as the lawsuits that have been filed against Axonyx, has often been instituted against those companies. Please see the section entitled "Axonyx's Business Legal Proceedings" in this joint proxy statement/prospectus.

Declines in Axonyx's stock price might harm its ability to issue equity under future potential financing arrangements. The price at which Axonyx issues shares in such transactions is generally based on the market price of its common stock and a decline in its stock price would result in Axonyx needing to issue a greater number of shares to raise a given amount of funds or acquire a given amount of goods or services. For this reason, a decline in Axonyx's stock price might also result in increased ownership dilution to its stockholders.

The future issuance of common stock upon exercise of warrants and stock options may depress the price of Axonyx's common stock.

As of August 23, 2006, Axonyx had outstanding options to purchase an aggregate of 5,504,619 shares of its common stock to its employees, officers, directors, and consultants under its existing option plans. Axonyx may issue options to purchase an additional 2,493,861 shares of its common stock under the option plans.

In addition, Axonyx has granted options to purchase an aggregate of 343,000 shares of common stock outside of its stock option plans to consultants and others. These options were all granted prior to June 30, 2003.

There are currently outstanding warrants to purchase an aggregate of 7,107,116 shares of Axonyx common stock.

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During the respective terms of the warrants and options granted or to be granted under Axonyx's stock option plans or otherwise, the holders thereof are given an opportunity to benefit from a rise in the market price of the common stock, with a resultant dilution of the interests of existing stockholders. The existence of these warrants and options could make it more difficult for Axonyx to obtain additional financing while such securities are outstanding. The holders may be expected to exercise their rights to acquire common stock and sell at a time when Axonyx would, in all likelihood, be able to obtain needed capital through a new offering of securities on terms more favorable than those provided by these warrants and options.

Risks Related to TorreyPines

In addition to the other information contained in this joint proxy statement/prospectus, you should carefully consider the material risks described below. As discussed above, Axonyx has entered into the merger agreement with merger sub and TorreyPines pursuant to which merger sub will merge with and into TorreyPines, with TorreyPines as the surviving corporation becoming a wholly owned subsidiary of Axonyx.

TorreyPines is at an early stage of development and has only three product candidates in clinical development. TorreyPines cannot be certain that any of its product candidates will be successfully developed, receive regulatory approval, or be commercialized.

TorreyPines is at an early stage of development and does not have any products that are commercially available. Only three of TorreyPines' product candidates, tezampanel, for migraine, NGX267, for AD, and NGX426, the oral prodrug of tezampanel, for migraine, are in clinical development. TorreyPines' other product candidates, including NGX292, a muscarinic agonist, and NGX555, a gamma-secretase modulator, are in preclinical development. TorreyPines will be required to conduct further clinical trials for all compounds in development as well as perform additional preclinical studies before it can seek the regulatory approvals necessary to begin commercial sales of its drugs.

Although five Phase IIa studies conducted by Eli Lilly on tezampanel have demonstrated proof of concept of its efficacy as an analgesic, TorreyPines will need to demonstrate additional efficacy and continue to confirm the safety of tezampanel in Phase II and large Phase III trials, conduct additional preclinical studies, and obtain necessary approvals from the FDA and similar foreign regulatory agencies before tezampanel can be marketed for the treatment of migraine. TorreyPines' product candidate for AD, NGX267 has been evaluated in two Phase I studies. However, NGX267 has been given to healthy volunteers only and TorreyPines has no data in subjects with AD to suggest that NGX267 will be an effective treatment for AD. TorreyPines will need to demonstrate the efficacy and to confirm the safety of NGX267 in additional Phase I, Phase II, and large Phase III trials, conducted in subjects with AD, perform additional preclinical studies, and obtain necessary approvals from the FDA and similar foreign regulatory agencies before NGX267 can be marketed for the for the treatment of AD. Before TorreyPines can market NGX426, NGX292, and NGX555, it will need to conduct preclinical studies and file an Investigational New Drug application, or IND, to permit commencement of human clinical studies on these product candidates, demonstrate that they are safe and effective in Phase I, Phase II and Phase III human clinical studies and, if those studies are successful, obtain necessary approvals from the FDA and similar foreign regulatory agencies.

TorreyPines does not anticipate that any of its current product candidates will be eligible to receive regulatory approval and begin commercialization for a number of years, if at all. Even if TorreyPines were to ultimately receive regulatory approval for its product candidates, TorreyPines may be unable to successfully commercialize them for a variety of reasons. These reasons include the availability of alternative treatments, cost effectiveness of the product, and the effect of competition with other marketed drugs. The success of TorreyPines' product candidates may also be limited by the prevalence and severity of any adverse side effects. Any delay in obtaining, or failure to obtain, required approvals could materially adversely affect TorreyPines' ability to generate revenues from the particular product candidate. Furthermore, any regulatory approval to market a product may be subject to limitations on the indicated uses for which TorreyPines may market the product. These limitations may reduce the size of the market for the product. If TorreyPines fails to commercialize one or more of its current product candidates, TorreyPines' business, results of operations, financial condition, and prospects for future growth will be materially and adversely affected.

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If clinical trials of TorreyPines' product candidates do not produce successful results, TorreyPines will be unable to commercialize resulting products and its business will be materially adversely affected.

To receive regulatory approval for the commercialization of any of TorreyPines' product candidates, TorreyPines must conduct clinical trials to demonstrate safety and efficacy in humans. TorreyPines cannot predict whether it will encounter problems with any of its planned clinical trials that will cause TorreyPines or regulatory authorities to delay or suspend clinical trials, or delay the analysis of data from its ongoing clinical trials. Any of the following factors could delay the clinical development of TorreyPines' product candidates:

ongoing discussions with the FDA or comparable foreign authorities regarding the scope or design of one or more clinical trials;

delays in receiving, or the inability to obtain, required approvals from institutional review boards or other; reviewing entities at clinical trial sites selected for participation in a clinical trials;

delays or slower than anticipated enrollment of participants into clinical trials;

lower than anticipated retention rate of participants in clinical trials;

need to repeat clinical trials as a result of inconclusive or negative results or unforeseen complications in testing;

inadequate supply or deficient quality of product candidate materials or other materials necessary to conduct its clinical trials;

unfavorable FDA inspection and review of a clinical trial site or records of any clinical or preclinical investigation;

serious, unexpected or undesirable side effects experienced by participants in the clinical trials that delay or preclude regulatory approval or limit the commercial use or market acceptance if approved;

findings that the trial participants are being exposed to unacceptable health risks;

placement by the FDA of a clinical hold on a trial;

restrictions on or post-approval commitments with regard to any regulatory approval TorreyPines ultimately obtains that renders a product candidate not commercially viable; and

unanticipated cost overruns in preclinical and clinical trials.

Human clinical testing is expensive, can take many years, and has an uncertain outcome. Failure can occur at any stage of human clinical testing. TorreyPines may experience numerous unforeseen events during, or as a result of, the clinical trial process that could delay or prevent commercialization of its current or future product candidates.

Success in preclinical testing and early clinical trials does not mean that later clinical trials will be successful. Companies frequently suffer significant setbacks in advanced clinical trials, even after earlier clinical trials have shown promising results. To date, a combined total of 205 subjects have been given tezampanel in two Phase I studies in healthy adult males and in five Phase IIa trials in subjects with migraine, low back pain, dental pain, and muscle spasticity. Tezampanel was well tolerated and, in the Phase IIa trials, tezampanel was shown to be more effective than placebo. In future clinical trials with larger or somewhat different populations, these results may not be reproduced and analysis of new or additional data may not demonstrate sufficient safety and efficacy to support regulatory approval of this product candidate.

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TorreyPines will need to reach agreement with the FDA on the targeted endpoints for its efficacy clinical trials. In some cases, the FDA may not have validated endpoints established and TorreyPines

may work with the FDA to potentially design and validate one or more endpoints. The FDA may not approve any or all of the endpoints and they may ultimately decide that the endpoints are inadequate to demonstrate the safety and efficacy levels required for regulatory approval. TorreyPines' failure to demonstrate the safety and efficacy of its product candidates adequately would jeopardize TorreyPines' ability to achieve regulatory approval for, and ultimately to commercialize the product candidates.

Delays in the commencement or completion of clinical testing of TorreyPines' product candidates could result in increased costs to TorreyPines and delay its ability to generate significant revenues.

Delays in the commencement or completion of clinical testing could significantly impact TorreyPines' product development costs. TorreyPines does not know whether planned clinical trials will begin on time or be completed on schedule, if at all. The commencement of clinical trials can be delayed for a variety of reasons, including delays in:

- obtaining regulatory approval to commence a clinical trial;
- reaching agreement on acceptable terms with prospective contract research organizations and clinical trial sites;
- obtaining sufficient quantities of clinical trial materials for any or all product candidates;
- obtaining institutional review board approval to conduct a clinical trial at a prospective site; and
- recruiting participants for a clinical trial.

In addition, once a clinical trial has begun, it may be suspended or terminated by TorreyPines or the FDA or other regulatory authorities due to a number of factors, including:

- failure to conduct the clinical trial in accordance with regulatory requirements;
- inspection of the clinical trial operations or clinical trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold; or
- lack of adequate funding to continue the clinical trial.

Clinical trials require sufficient participant enrollment, which is a function of many factors, including the size of the target population, the nature of the trial protocol, the proximity of participants to clinical trial sites, the availability of effective treatments for the relevant disease, the eligibility criteria for TorreyPines' clinical trials and competing trials. Delays in enrollment can result in increased costs and longer development times. TorreyPines' failure to enroll participants in its clinical trials could delay the completion of the clinical trials beyond current expectations. In addition, the FDA could require TorreyPines to conduct clinical trials with a larger number of participants than it may project for any of its product candidates. As a result of these factors, TorreyPines may not be able to enroll a sufficient number of participants in a timely or cost-effective manner.

Furthermore, enrolled participants may drop out of clinical trials, which could impair the validity or statistical significance of the clinical trials. A number of factors can influence the discontinuation rate, including, but not limited to: the inclusion of a placebo arm in a trial; possible lack of effect of the product candidate being tested at one or more of the dose levels being tested; adverse side effects experienced, whether or not related to the product candidate; and the availability of numerous alternative treatment options that may induce participants to discontinue from the trial.

TorreyPines, the FDA or other applicable regulatory authorities may suspend clinical trials of a product candidate at any time if TorreyPines or they believe the participants in such clinical trials, or in independent third-party clinical trials for drugs based on similar technologies, are being exposed to unacceptable health risks or for other reasons.

TorreyPines cannot predict whether any of its product candidates will encounter problems during clinical trials that will cause TorreyPines or regulatory authorities to delay or suspend these trials or delay the analysis of data from these trials. In addition, it is impossible to predict whether legislative changes will be enacted, or whether FDA regulations, guidance or interpretations will be changed, or what the impact of such changes, if any, may be. If TorreyPines experiences any such problems, it may not have the financial resources to continue development of the product candidate that is affected or the development of any of its other product candidates. If TorreyPines experiences significant delays in the commencement or completion of clinical testing, financial results and the commercial prospects for the product candidates will be harmed, costs will increase and TorreyPines' ability to generate revenues will be delayed.

TorreyPines relies on third parties to assist it in conducting clinical trials. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, TorreyPines may not be able to obtain regulatory approval for or commercialize its product candidates.

TorreyPines relies, and intends to continue to rely on third parties, such as CROs, medical institutions, clinical investigators and contract laboratories, to conduct clinical trials of its product candidates. TorreyPines' reliance on these third parties for development activities reduces its control over these activities. If these third parties do not successfully carry out their contractual duties or obligations or meet expected deadlines, or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to TorreyPines' clinical protocols or for other reasons, TorreyPines clinical trials may be extended, delayed or terminated. If these third parties do not successfully carry out their contractual duties or meet expected deadlines, TorreyPines may be required to replace them. Although TorreyPines believes there are a number of third-party contractors it could engage to continue these activities, replacing a third-party contractor may result in a delay of the affected trial. Accordingly, TorreyPines may not be able to obtain regulatory approval for or successfully commercialize its product candidates.

TorreyPines has licensed rights to product candidates tezampanel and NGX426 from Eli Lilly. Eli Lilly has rights to negotiate, which could delay or limit TorreyPines' ability to develop and commercialize these product candidates, and rights of termination under the license agreement, which if exercised would adversely affect TorreyPines' business.

In April 2003, TorreyPines entered into an agreement with Eli Lilly to obtain an exclusive license from Eli Lilly to their AMPA/kainate, or AK, antagonist assets including TorreyPines' lead product candidate, tezampanel, as well as NGX426. Under the agreement, if TorreyPines decides to sublicense rights to commercialize either of the product candidates licensed to them under the agreement in the U.S. or all of its rights under the agreement worldwide, TorreyPines is obligated first to provide Eli Lilly the opportunity to negotiate with TorreyPines to obtain those rights. These rights held by Eli Lilly may delay or limit TorreyPines ability to enter into a sublicense with a third party.

TorreyPines has obligations to make payments to Eli Lilly under the agreement and to use commercially reasonable efforts to develop and commercialize the product candidates subject to the agreement, including achievement of specified development events within specified timeframes. Eli Lilly may terminate the agreement for uncured material breach of the agreement by TorreyPines, including any breach of TorreyPines' diligence obligations, if TorreyPines goes into bankruptcy or makes a general assignment of its assets to its creditors, or if TorreyPines undergoes a change of control, unless the party acquiring TorreyPines in the change of control undertakes all of the obligations under the agreement. If Eli Lilly were to terminate the agreement, TorreyPines would lose rights to the AK antagonist product candidates, and TorreyPines' business would be adversely affected.

TorreyPines has licensed rights to product candidates NGX267 and NGX292 from Life Science Research Israel, or LSRI, and LSRI has rights of termination under the license agreement, which if exercised would adversely affect TorreyPines' business.

In May 2004, TorreyPines entered into an agreement with LSRI to obtain an exclusive license from LSRI to their muscarinic agonist assets NGX267 and NGX292. TorreyPines has obligations to make payments to LSRI under the agreement and to use commercially reasonable efforts to develop and commercialize the product candidates subject to the agreement, including achievement of specified development events within specified timeframes. LSRI may terminate the agreement for uncured material breach of the agreement by TorreyPines, including any breach of TorreyPines diligence obligations, or if TorreyPines goes into bankruptcy, makes a general assignment of its assets to its creditors, or dissolves or winds up its business. If LSRI were to terminate the agreement, TorreyPines would lose rights to the muscarinic agonist product candidates, and TorreyPines' business would be adversely affected.

TorreyPines depends on Eisai for funding for its gamma-secretase modulator program and AD genetics research program. Eisai has the first right to obtain rights to gene targets and compounds resulting from these programs, which could delay or limit TorreyPines' ability to develop and commercialize these gene targets and compounds.

In February 2005, TorreyPines entered into an agreement with Eisai to discover small molecule gamma-secretase modulator compounds useful in the field of treatment for AD in humans. The agreement has a two-year term and may be extended by Eisai for up to an additional 12 months. In October 2005, TorreyPines entered into an agreement with Eisai to discover gene targets useful in the field of treatment or prevention of AD in humans. The agreement has a two-year term and may be extended by Eisai for up to an additional 12 months. TorreyPines depends upon Eisai to provide funding for the research TorreyPines conducts under these agreements. If Eisai were to cease funding these programs for any reason, TorreyPines would need to provide its own funding for the programs, seek a strategic partner for further work on the programs, raise additional funding, or curtail or abandon the programs.

During the term of the respective agreements, Eisai has exclusive first rights of negotiation and refusal with regard to a license, collaboration or other arrangement regarding gene targets discovered and validated in the course of the AD genetics research program or compounds discovered and validated in the course of the gamma-secretase modulator program, as applicable. These rights held by Eisai may delay or limit TorreyPines' ability to enter into a license, collaboration or other arrangement for any gene targets resulting from the AD genetic research program or compounds resulting from the gamma-secretase modulator program with a third party.

TorreyPines has an agreement providing Johnson & Johnson Development Corporation the first right to obtain rights to TorreyPines' M1 agonist program, which could delay or limit TorreyPines' ability to develop and commercialize these product candidates.

TorreyPines has an agreement with Johnson & Johnson Development Corporation, or JJDC, regarding TorreyPines' research and development work into the effects of using M1 agonists in the treatment of CNS diseases and disorders. Upon completion of a specified level of development of TorreyPines' lead M1 agonist, TorreyPines is obligated to provide results for the compound to JJDC.

For a specified period following receipt of the results, or at an earlier time as agreed to by JJDC and TorreyPines, JJDC has the exclusive right to negotiate with TorreyPines regarding any sale, transfer, license or other distribution of any TorreyPines' intellectual property rights or products related to TorreyPines' M1 agonist program, referred to as an M1 agonist transaction. If, during the specified period after the end of the period of negotiation with JJDC, TorreyPines proposes to enter in an

agreement with a third party regarding an M1 agonist transaction on terms that are equivalent to or less favorable to TorreyPines than the terms last proposed by JJDC, TorreyPines must first offer JJDC the right to enter into an agreement with TorreyPines on the terms proposed by the third party. If JJDC notifies TorreyPines that it wishes to complete an M1 agonist transaction on the terms offered by the third party within a specified notice period, then the parties will negotiate an agreement on those terms during a specified negotiation period. These rights held by JJDC may delay or limit TorreyPines' ability to enter into an M1 agonist transaction.

If TorreyPines fails to enter into and maintain collaborations for its product candidates, TorreyPines may have to reduce or delay product development or increase expenditures.

TorreyPines' strategy for developing, manufacturing, and commercializing potential products includes establishing and maintaining collaborations with pharmaceutical and biotechnology companies to advance some of its programs and reduce expenditures on those programs. TorreyPines may not be able to negotiate collaborations on acceptable terms, if at all. If TorreyPines is not able to establish and maintain collaborative arrangements, TorreyPines may have to reduce or delay further development of some programs or undertake the development activities at its own expense. If TorreyPines elects to increase capital expenditures to fund development programs on its own, TorreyPines will need to obtain additional capital, which may not be available on acceptable terms or at all. Even if TorreyPines does succeed in securing such collaborations, it may not be able to maintain them if, for example, development or approval of a product candidate is delayed or sales of an approved drug are disappointing. Furthermore, any delay in entering into collaborations could delay the development and commercialization of TorreyPines' product candidates and reduce their competitiveness, even if they reach the market. Any such delay related to TorreyPines' collaborations could adversely affect its business.

If strategic partners do not devote adequate resources to the development and commercialization of TorreyPines' licensed product candidates, TorreyPines may not be able to commercialize its products and achieve revenues.

TorreyPines may enter into collaborations with other strategic partners with respect to TorreyPines' product candidates. If TorreyPines enters into any such collaborations, TorreyPines may have limited or no control over the amount and timing of resources that its partners dedicate to the development of TorreyPines product candidates. TorreyPines' ability to commercialize products which TorreyPines develops with its partners and generate royalties from product sales will depend on the partner's ability to assist TorreyPines in establishing the safety and efficacy of its product candidates, obtaining regulatory approvals and achieving market acceptance of products. TorreyPines' partners may elect to delay or terminate development of a product candidate, independently develop products that could compete with those of TorreyPines, or not commit sufficient resources to the marketing and distribution of products under the collaboration. If TorreyPines' partners fail to perform as expected under the collaborative agreements, TorreyPines' potential for revenue from the related product candidates will be dramatically reduced. In addition, revenue from TorreyPines' future collaborations may consist of contingent payments, such as payments for achieving development and commercialization milestones and royalties payable on sales of any successfully developed drugs. The milestone, royalty or other revenue that TorreyPines may receive under these collaborations will depend upon TorreyPines and its partner's ability to successfully develop, introduce, market and sell new products. In some cases, TorreyPines will not be involved in these processes and, accordingly, will depend entirely on its partners.

TorreyPines currently has no marketing or sales staff. If TorreyPines is unable to enter into or maintain collaborations with marketing partners or if TorreyPines is unable to develop its own sales and marketing capabilities, TorreyPines may not be successful in commercializing its potential drugs and TorreyPines may be unable to generate significant revenues.

TorreyPines may elect to commercialize some of the products it is developing on its own, with or without a partner, where those products can be effectively marketed and sold in concentrated markets that do not require a large sales force to be competitive. TorreyPines currently has no sales, marketing or distribution capabilities. To be able to commercialize its own products, TorreyPines will need to establish its own specialized sales force and marketing organization with technical expertise and with supporting distribution capabilities. Developing such an organization is expensive and time consuming and could delay or limit TorreyPines' ability to commercialize products.

To commercialize any product candidate that TorreyPines decides not to market on its own, TorreyPines will depend on collaborations with third parties which have established distribution systems and direct sales forces. If TorreyPines is unable to enter into such collaborations on acceptable terms, TorreyPines may not be able to successfully commercialize those products.

To the extent that TorreyPines enters into arrangements with collaborators or other third parties to perform sales and marketing services, TorreyPines product revenues are likely to be lower than if TorreyPines directly marketed and sold its product candidates. If TorreyPines is unable to establish adequate sales and marketing capabilities, independently or with others, TorreyPines may not be able to generate significant revenues and may not become profitable and the price of its common stock may be negatively affected.

TorreyPines' product candidates are new therapies for pain and AD, and TorreyPines does not know whether these product candidates will yield commercially viable drugs. If TorreyPines' research and development efforts do not yield commercially viable drugs, TorreyPines' business will be adversely affected.

TorreyPines most advanced product candidate, tezampanel, and a follow-on product candidate, NGX426, are antagonists of the AK receptors. They are part of a new class of compounds that block the AK receptors and, in turn, stop the transmission of pain signals. These product candidates may represent a novel approach to the management of migraine and chronic pain, including neuropathic pain. There are no approved products that are AK antagonists. As a result, TorreyPines cannot be certain that its product candidates will result in commercially viable drugs that safely and effectively treat migraine and other chronic pain indications.

TorreyPines has two product candidates for AD, NGX267 and NGX292, which are muscarinic agonists and a gamma-secretase modulator product candidate for AD, NGX555. These product candidates belong to classes of compounds that have been or are being studied as a treatment for AD, but there are no approved muscarinic agonist products or gamma-secretase modulator products for AD. As a result, TorreyPines cannot be certain that its product candidates will safely and effectively improve the symptoms of AD or modify the progression of the disease or result in commercially viable drugs.

If TorreyPines' efforts to discover new product candidates do not succeed, and product candidates that TorreyPines recommends for clinical development do not actually begin clinical trials, TorreyPines' business will suffer.

TorreyPines intends to use its proprietary technologies and expertise in AD and related neurodegenerative diseases and disorders to discover, develop and commercialize new products for the treatment and prevention of these diseases and disorders. Once recommended for development, a candidate undergoes drug substance scale up, preclinical testing, including toxicology tests, and formulation development. If this work is successful, an IND would need to be prepared, filed, and approved by the FDA and the product candidate would then be ready for human clinical testing.

The process of researching, discovering, and conducting preclinical testing on product candidates is expensive, time-consuming and unpredictable. TorreyPines has one product candidate in preclinical development, NGX555, which was discovered by TorreyPines. Additional data obtained from TorreyPines' current preclinical program for NGX555 may not support advancing it into clinical development. In addition, TorreyPines may not identify any additional compounds suitable to be recommended preclinical or for clinical development. Moreover, any compounds TorreyPines recommends for clinical development, including NGX555, may not be effective or safe for their designated use, which would prevent their advancement into clinical trials and impede TorreyPines' ability to maintain or expand their clinical development pipeline. TorreyPines' ability to identify new compounds and advance them into development also depends upon its ability to fund research and development operations, and TorreyPines cannot be certain that additional funding will be available on acceptable terms, or at all.

If TorreyPines is not successful in acquiring or licensing additional CNS product candidates on acceptable terms, if at all, TorreyPines' business may be adversely affected.

As part of its strategy, TorreyPines intends to acquire or in-license additional product candidates for treatment of diseases and disorders of the CNS. TorreyPines may not be able to identify promising CNS product candidates and may have to compete with other pharmaceutical and biotechnology companies seeking to identify CNS product candidates. Even if TorreyPines is successful in identifying promising CNS product candidates, TorreyPines may not be able to reach an agreement for the acquisition or license of the product candidates with their owners on acceptable terms, if at all.

TorreyPines does not have internal manufacturing capabilities. If TorreyPines fails to develop and maintain supply relationships with collaborators or other third-party manufacturers, TorreyPines may be unable to develop or commercialize its products.

TorreyPines' ability to develop and commercialize its products depends in part on TorreyPines' ability to manufacture, or arrange for future collaborators or other third parties to manufacture, its products at a competitive cost, in accordance with regulatory requirements and in sufficient quantities for clinical testing and eventual commercialization. None of TorreyPines' current product candidates has been manufactured on a commercial scale. TorreyPines and these third-party manufacturers may encounter difficulties with the small- and large-scale formulation and manufacturing processes required to manufacture its product candidates, resulting in delays in clinical trials and regulatory submissions, in the commercialization of product candidates or, if any product candidate is approved, in the recall or withdrawal of the product from the market. TorreyPines' inability to enter into or maintain agreements with capable third-party manufacturers on acceptable terms could delay or prevent the commercialization of its products, which would adversely affect TorreyPines' ability to generate revenues and could prevent TorreyPines from achieving profitability.

TorreyPines has supplies of tezampanel, NGX426 and NGX267 that it expects to need for current clinical trials. TorreyPines will need to identify and reach agreement with third parties for the supply of its product candidates for future clinical trials. TorreyPines does not have long-term supply agreements with third parties, and TorreyPines may not be able to enter into new supply agreements with them in a timely manner or on acceptable terms, if at all. These third parties may also be subject to capacity constraints that would cause them to limit the amount of TorreyPines' product candidates they can produce or the chemicals that TorreyPines can purchase. Any interruption or delay TorreyPines experiences in the supply of its product candidates or the chemicals may impede or delay such product candidates' clinical development and cause TorreyPines to incur increased expenses associated with identifying and qualifying one or more alternate suppliers.

In addition, TorreyPines, its future collaborators or other third-party manufacturers of its products must comply with current good manufacturing practice, or cGMP, requirements enforced by the FDA

through its facilities inspection program. These requirements include quality control, quality assurance and the maintenance of records and documentation. In addition, product manufacturing facilities in California are subject to licensing requirements of the California Department of Health Services and may be inspected by the California Department of Health Services at any time. TorreyPines, its collaborators or other third-party manufacturers of its products may be unable to comply with these cGMP requirements and with other FDA, state and foreign regulatory requirements. A failure to comply with these requirements may result in fines and civil penalties, suspension or delay in product approval, product seizure or recall, or withdrawal of product approval.

If TorreyPines fail to attract and keep key management and scientific personnel, TorreyPines may be unable to develop or commercialize its product candidates successfully.

TorreyPines' success depends on its continued ability to attract, retain and motivate highly qualified management and scientific personnel. The loss of the services of any principal member of TorreyPines' senior management could delay or prevent the commercialization of its product candidates. TorreyPines employs these individuals on an at-will basis and their employment can be terminated by TorreyPines or them at any time, for any reason and with or without notice, subject to the terms contained in their employment offer letters.

Competition for qualified personnel in the biotechnology field is intense. TorreyPines may not be able to attract and retain quality personnel on acceptable terms given the competition for such personnel among biotechnology, pharmaceutical and other companies.

TorreyPines has established a scientific advisory board, the members of which assist TorreyPines in formulating research and development strategies. These scientific advisors are not TorreyPines' employees and may have commitments to, or consulting or advisory contracts with, other entities that may limit their availability to TorreyPines. The failure of TorreyPines' scientific advisors to devote sufficient time and resources to TorreyPines' programs could harm its business. In addition, TorreyPines' scientific advisors may have arrangements with other companies to assist those companies in developing products or technologies that may compete with TorreyPines.

TorreyPines has a history of net losses, which TorreyPines expects to continue for the foreseeable future, and TorreyPines is unable to predict the extent of future losses or when TorreyPines will become profitable, if at all.

Since its inception in 2000, TorreyPines has engaged only in research and development efforts. TorreyPines has incurred operating losses in each year since its inception, and TorreyPines may never achieve profitability. The net loss for each of the fiscal years ended December 31, 2005, December 31, 2004, December 31, 2003, December 31, 2002 and December 31, 2001 was \$11.5 million, \$10.4 million, \$13.1 million, \$6.8 million and \$3.4 million, respectively. The net loss for the six months ended June 30, 2006 was \$9.5 million. As of June 30, 2006, TorreyPines had an accumulated deficit of approximately \$70.7 million. TorreyPines' losses have resulted principally from costs incurred in connection with its research activities and from general and administrative costs associated with its operations.

TorreyPines expects to increase its operating expenses over the next several years as TorreyPines continues and expands its research and development activities, including clinical trials for its product candidates and further development of its product pipeline, acquire or in-license products, technologies or businesses, and fund other working capital and general corporate purposes. As a result, TorreyPines expects to continue to incur significant and increasing operating losses for the foreseeable future. Because of the numerous risks and uncertainties associated with its product development efforts, TorreyPines is unable to predict the extent of any future losses or when TorreyPines will become profitable, if at all.

TorreyPines currently lacks a significant continuing revenue source and may not become profitable.

TorreyPines' ability to become profitable depends upon its ability to generate continuing revenues. To date, TorreyPines' product candidates and strategic collaborations have not generated any significant revenues, other than one-time or time-limited payments associated with current collaborations. TorreyPines' ability to generate significant continuing revenues depends on a number of factors, including:

successful completion of ongoing and future clinical trials for its product candidates;

achievement of regulatory approval for its product candidates;

successful completion of current and future strategic collaborations; and

successful sales, manufacturing, distribution and marketing of its products.

TorreyPines does not anticipate that it will generate significant continuing revenues for several years. If TorreyPines is unable to generate significant continuing revenues, TorreyPines will not become profitable, and TorreyPines may be unable to continue its operations and, in such event, investors could lose their entire investment.

TorreyPines will need substantial additional funding and may be unable to raise capital when needed, which would force TorreyPines to delay, reduce or eliminate its research and development programs or commercialization efforts.

TorreyPines will need to raise substantial additional capital in the future and additional funding requirements will depend on, and could increase significantly as a result of, many factors, including:

the rate of progress and cost of clinical trials;

the scope of TorreyPines' clinical trials and other research and development activities;

the prioritization and number of clinical development and research programs TorreyPines pursues;

the terms and timing of any collaborative, licensing and other arrangements that TorreyPines may establish;

the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights;

the costs and timing of regulatory approvals; and

the costs of establishing or contracting for sales and marketing capabilities.

TorreyPines does not anticipate that it will generate significant continuing revenues for several years, if at all. Until TorreyPines can generate significant continuing revenues, if ever, TorreyPines expects to satisfy its future cash needs through public or private equity offerings, debt financings or corporate collaboration and licensing arrangements, as well as through interest income earned on cash balances. TorreyPines cannot be certain that additional funding will be available on acceptable terms, or at all. If adequate funds are not available, TorreyPines may be required to delay, reduce the scope of, or eliminate one or more of its research and development programs or commercialization efforts.

Raising additional funds by issuing securities or through collaboration and licensing arrangements may cause dilution to existing stockholders, restrict operations or require TorreyPines to relinquish proprietary rights.

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TorreyPines may raise additional funds through public or private equity offerings, debt financings or corporate collaboration and licensing arrangements. To the extent that TorreyPines raises additional capital by issuing equity securities, its existing stockholders' ownership will be diluted. Any debt

financing TorreyPines enter into may involve covenants that restrict its operations. These restrictive covenants may include limitations on additional borrowing, specific restrictions on the use of TorreyPines assets as well as prohibitions on TorreyPines' ability to create liens, pay dividends, redeem stock or make investments. In addition, if TorreyPines raises additional funds through collaboration and licensing arrangements, it may be necessary to relinquish potentially valuable rights to its potential products or proprietary technologies, or grant licenses on terms that are not favorable to TorreyPines.

Changes in, or interpretations of, accounting rules and regulations could result in unfavorable accounting charges or require TorreyPines to change its compensation policies.

Accounting methods and policies for biopharmaceutical companies, including policies governing revenue recognition, expenses, accounting for stock options and in-process research and development costs are subject to further review, interpretation and guidance from relevant accounting authorities, including the Securities and Exchange Commission. Changes to, or interpretations of, accounting methods or policies in the future may require TorreyPines to reclassify, restate or otherwise change or revise its financial statements, including those contained in this joint proxy statement/prospectus.

Risks Related to TorreyPines' Intellectual Property

TorreyPines' success depends upon its ability to protect its intellectual property and proprietary technologies.

TorreyPines' commercial success depends on obtaining and maintaining patent protection and trade secret protection of its product candidates, proprietary technologies and their uses, as well as successfully defending these patents against third-party challenges. TorreyPines will only be able to protect its product candidates, proprietary technologies and their uses from unauthorized use by third parties to the extent that valid and enforceable patents or trade secrets cover them.

The patent positions of pharmaceutical and biotechnology companies can be highly uncertain and involve complex legal and factual questions for which important legal principles remain unresolved. No consistent policy regarding the breadth of claims allowed in biotechnology patents has emerged to date in the U.S. The biotechnology patent situation outside the U.S. is even more uncertain. Changes in either the patent laws or in interpretations of patent laws in the U.S. and other countries may diminish the value of TorreyPines' intellectual property. Accordingly, TorreyPines cannot predict the breadth of claims that may be allowed or enforced in its patents or in third-party patents.

The degree of future protection for TorreyPines' proprietary rights is uncertain because legal means afford only limited protection and may not adequately protect its rights or permit it to gain or keep its competitive advantage. For example:

TorreyPines or its licensors might not have been the first to make the inventions covered by each of its pending patent applications and issued patents;

TorreyPines or its licensors might not have been the first to file patent applications for these inventions;

others may independently develop similar or alternative technologies or duplicate any of TorreyPines' technologies;

it is possible that none of TorreyPines' pending patent applications will result in issued patents;

TorreyPines' issued patents may not provide a basis for commercially viable products, may not provide it with any competitive advantages, or may be challenged by third parties;

TorreyPines' issued patents may not be valid or enforceable;

TorreyPines may not develop additional proprietary technologies that are patentable; and

the patents of others may have an adverse effect on TorreyPines' business.

Proprietary trade secrets and unpatented know-how are also very important to TorreyPines' business. Although TorreyPines has taken steps to protect its trade secrets and unpatented know-how, including entering into confidentiality agreements with third parties and proprietary information and inventions agreements with employees, consultants and advisors, third parties may still obtain this information. Enforcing a claim that a third party illegally obtained and is using TorreyPines' trade secrets or unpatented know-how is expensive and time consuming, and the outcome is unpredictable. In addition, courts outside the U.S. may be less willing to protect this information. Moreover, TorreyPines' competitors may independently develop equivalent knowledge, methods and know-how.

If TorreyPines is sued for infringing intellectual property rights of third parties, it will be costly and time consuming, and an unfavorable outcome in that litigation would have a material adverse effect on its business.

TorreyPines' commercial success depends upon its ability and the ability of any of its collaborators to develop, manufacture, market, and sell its product candidates and use its proprietary technologies without infringing the proprietary rights of third parties. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which TorreyPines is developing products. Because patent applications can take many years to issue, there may be currently pending applications, unknown to TorreyPines, which may later result in issued patents that its product candidates or proprietary technologies may infringe. TorreyPines has not conducted a complete search of existing patents to identify existing patents that its product candidates or proprietary technologies may inadvertently infringe.

TorreyPines may be exposed to future litigation by the companies holding these patents or other third parties based on claims that its product candidates and/or proprietary technologies infringe their intellectual property rights. If one of these patents was found to cover TorreyPines' product candidates, proprietary technologies or their uses, TorreyPines or its collaborators could be required to pay damages and could be unable to commercialize its product candidates or use its proprietary technologies unless it obtained a license to the patent. A license to these patents may not be available to TorreyPines or its collaborators on acceptable terms, if at all.

There is a substantial amount of litigation involving patent and other intellectual property rights in the biotechnology and biopharmaceutical industries generally. If a third party claims that TorreyPines or its collaborators infringe on its technology, it may face a number of issues, including:

infringement and other intellectual property claims which, with or without merit, may be expensive and time-consuming to litigate and may divert management's attention from its core business;

substantial damages for infringement, including treble damages and attorneys' fees, as well as damages for products development using allegedly infringing drug discovery tools or methods which TorreyPines may have to pay if a court decides that the product or proprietary technology at issue infringes on or violates the third party's rights;

a court prohibiting TorreyPines from selling or licensing the product or using the proprietary technology unless the third party licenses its technology to TorreyPines, which it is not required to do;

if a license is available from the third party, TorreyPines may have to pay substantial royalties, fees and/or grant cross licenses to its technology; and

redesigning TorreyPines' products or processes so they do not infringe, which may not be possible or may require substantial funds and time,

TorreyPines may also be subject to claims that it or its employees, who were previously employed at universities or other biotechnology or pharmaceutical companies, have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers. Litigation may be necessary to defend against these claims. If TorreyPines fails in defending such claims, in addition to paying monetary damages, it may lose valuable intellectual property rights or personnel. A loss of key research personnel or their work product could hamper or prevent TorreyPines' ability to commercialize certain potential drugs, which could severely harm its business. Even if TorreyPines is successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

Risks Related to TorreyPines' Industry

TorreyPines' product candidates are subject to extensive regulation, which can be costly and time consuming, cause unanticipated delays or prevent the receipt of the required approvals to commercialize TorreyPines' product candidates.

The clinical development, manufacturing, labeling, storage, record-keeping, advertising, promotion, export, marketing and distribution of TorreyPines' product candidates are subject to extensive regulation by the FDA and other regulatory agencies in the U.S. and by comparable foreign governmental authorities. The process of obtaining these approvals is expensive, often takes many years, and can vary substantially based upon the type, complexity and novelty of the products involved. Approval policies or regulations may change. In addition, although members of TorreyPines' management have drug development and regulatory experience, as a company TorreyPines has not previously filed the marketing applications necessary to gain regulatory approvals for any product. This lack of experience may impede TorreyPines' ability to obtain FDA marketing approval in a timely manner, if at all, for its product candidates for which development and commercialization is TorreyPines' responsibility. TorreyPines will not be able to commercialize its product candidates in the U.S. until TorreyPines obtains FDA approval and in other countries until TorreyPines obtains approval by comparable governmental authorities. Any delay in obtaining, or inability to obtain, these approvals would prevent TorreyPines from commercializing its product candidates.

Even if any of TorreyPines' product candidates receives regulatory approval, they may still face future development and regulatory difficulties.

If any of TorreyPines' product candidates receive regulatory approval, the FDA and foreign regulatory authorities may still impose significant restrictions on the uses or marketing of the product candidates or impose ongoing requirements for post-approval studies. In addition, regulatory agencies subject a product, its manufacturer and the manufacturer's facilities to continuing review and periodic inspections. If previously unknown problems with a product or its manufacturing facility are discovered, a regulatory agency may impose restrictions on that product, TorreyPines, or its partners, including requiring withdrawal of the product from the market. TorreyPines' candidates will also be subject to ongoing FDA requirements for submission of safety and other post-market information. If TorreyPines' product candidates fail to comply with applicable regulatory requirements, a regulatory agency may:

issue warning letters;

impose civil or criminal penalties;

suspend regulatory approval;

suspend any ongoing clinical trials;

refuse to approve pending applications or supplements to approved applications filed by TorreyPines or its collaborators;

impose restrictions on operations, including costly new manufacturing requirements; or

seize or detain products or require a product recall.

In order to market any products outside of the U.S., TorreyPines and its partners must establish and comply with numerous and varying regulatory requirements of other countries regarding safety and efficacy. Approval procedures vary among countries and can involve additional product testing and additional administrative review periods. The time required to obtain approval in other countries might differ from that required to obtain FDA approval. The regulatory approval process in other countries may include all of the risks detailed above regarding FDA approval in the U.S. Regulatory approval in one country does not ensure regulatory approval in another, but a failure or delay in obtaining regulatory approval in one country may negatively impact the regulatory process in others. Failure to obtain regulatory approval in other countries or any delay or setback in obtaining such approval could have the same adverse effects described above regarding FDA approval in the U.S., including the risk that TorreyPines' product candidates may not be approved for all indications requested, which could limit the uses of its product candidates and adversely impact potential royalties and product sales, and that such approval may be subject to limitations on the indicated uses for which the product may be marketed or require costly, post-marketing follow-up studies.

If TorreyPines and its partners fail to comply with applicable foreign regulatory requirements, TorreyPines and its partners may be subject to fines, suspension or withdrawal of regulatory approvals, product recalls, seizure of products, operating restrictions and criminal prosecution.

If TorreyPines' competitors have products that are approved faster, marketed more effectively or demonstrated to be more effective than TorreyPines' products, then TorreyPines' commercial opportunity will be reduced or eliminated.

The biotechnology and biopharmaceutical industries are characterized by rapidly advancing technologies, intense competition and a strong emphasis on proprietary products. TorreyPines faces competition from many different sources, including commercial pharmaceutical and biotechnology enterprises, academic institutions, government agencies and private and public research institutions. Due to the high demand for treatments for CNS diseases and disorders, research is intense and new treatments are being sought out and developed by TorreyPines' competitors.

In addition, many other competitors are developing products for the treatment of the diseases TorreyPines is targeting and if successful, these products could compete with TorreyPines' products. If TorreyPines receives approval to market and sell any of its product candidates, TorreyPines may compete with these companies and their products as well as others in varying stages of development.

Many of TorreyPines' competitors have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, clinical trials, regulatory approvals and marketing approved products than TorreyPines does. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. TorreyPines' competitors may succeed in developing technologies and therapies that are more effective, better tolerated or less costly than any which TorreyPines is developing, or that would render TorreyPines' product candidates obsolete and noncompetitive. TorreyPines' competitors may succeed in obtaining approvals from the FDA and foreign regulatory authorities for their products sooner than TorreyPines does. TorreyPines will also face competition from these third parties in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials, and in acquiring and in-licensing technologies and products complementary to TorreyPines' programs or advantageous to its business.

If TorreyPines' product candidates do not achieve market acceptance among physicians, patients, health care payors and the medical community, they will not be commercially successful and TorreyPines' business will be adversely affected.

The degree of market acceptance of any of TorreyPines' approved product candidates among physicians, patients, health care payors and the medical community will depend on a number of factors, including:

- acceptable evidence of safety and efficacy;
- relative convenience and ease of administration;
- the prevalence and severity of any adverse side effects;
- availability of alternative treatments;
- pricing and cost effectiveness;
- effectiveness of sales and marketing strategies; and
- ability to obtain sufficient third-party coverage or reimbursement.

TorreyPines is subject to uncertainty relating to health care reform measures and reimbursement policies which, if not favorable to its product candidates, could hinder or prevent the commercial success of its product candidates.

The continuing efforts of the government, insurance companies, managed care organizations and other payors of health care costs to contain or reduce costs of health care may adversely affect TorreyPines':

- ability to set a price TorreyPines believes is fair for its products;
- ability to generate revenues and achieve profitability;
- future revenues and profitability of potential customers, suppliers and collaborators; and
- the availability of capital.

In certain foreign markets, the pricing of prescription drugs is subject to government control. In the U.S., given recent federal and state government initiatives directed at lowering the total cost of health care, Congress and state legislatures will likely continue to focus on health care reform, the cost of prescription drugs and the reform of the Medicare and Medicaid systems. For example, a new Medicare prescription drug benefit program began in 2006. While TorreyPines cannot predict the full outcome of the implementation of this legislation or whether any future legislative or regulatory proposals affecting its business will be adopted, the announcement or adoption of these proposals could materially and adversely affect TorreyPines' business, financial condition, and results of operations.

TorreyPines' ability to commercialize its product candidates successfully will depend in part on the extent to which governmental authorities, private health insurers and other organizations establish appropriate reimbursement levels for the cost of its products and related treatments. Third-party payors are increasingly challenging the prices charged for medical products and services. Also, the trend toward managed health care in the U.S., which could significantly influence the purchase of health care services and products, as well as legislative proposals to reform health care or reduce government insurance programs, may result in lower prices for TorreyPines' product candidates or exclusion of its product candidates from reimbursement programs. The cost containment measures that health care payors and providers are

instituting and the effect of any health care reform could materially and adversely affect TorreyPines' results of operations.

Product liability claims may harm TorreyPines' business if its insurance coverage for those claims is inadequate.

TorreyPines faces an inherent risk of product liability exposure related to the testing of its product candidates in human clinical trials, and will face an even greater risk if TorreyPines sells its product candidates commercially. An individual may bring a liability claim against TorreyPines if one of its product candidates causes, or merely appears to have caused, an injury. If TorreyPines cannot successfully defend itself against the product liability claim, TorreyPines will incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for TorreyPines' product candidates;
- injury to TorreyPines' reputation;
- withdrawal of clinical trial participants;
- costs of related litigation;
- substantial monetary awards to patients or other claimants;
- loss of revenues; and
- the inability to commercialize TorreyPines' product candidates.

TorreyPines has product liability insurance that covers its clinical trials, up to an annual aggregate limit of \$5.0 million. TorreyPines intends to expand its insurance coverage to include the sale of commercial products if marketing approval is obtained for any of its product candidates. However, insurance coverage is increasingly expensive. TorreyPines may not be able to maintain insurance coverage at a reasonable cost and TorreyPines may not be able to obtain insurance coverage that will be adequate to satisfy any liability that may arise.

TorreyPines uses hazardous chemicals and radioactive and biological materials in its business. Any claims relating to improper handling, storage or disposal of these materials could be time-consuming and costly.

TorreyPines' research and development processes involve the controlled use of hazardous materials, including chemicals, radioactive and biological materials. TorreyPines' operations produce hazardous waste products. TorreyPines cannot eliminate the risk of accidental contamination or discharge and any resultant injury from those materials. Federal, state and local laws and regulations govern the use, manufacture, storage, handling and disposal of hazardous materials. TorreyPines may be sued for any injury or contamination that results from its use or the use by third parties of these materials. Compliance with environmental laws and regulations may be expensive, and current or future environmental regulations may impair TorreyPines' research, development and production efforts.

Risks Related to the Combined Company

In determining whether you should approve the merger, the issuance of shares of Axonyx common stock and the merger warrants and other matters related to the merger, as the case may be, you should carefully read the following risk factors in addition to the risks described under "Risk Factors Risks Related to Axonyx" and "Risk Factors Risks Related to TorreyPines," which will also apply to the combined company.

The combined company's stock price is expected to be volatile, and the market price of its common stock may drop following the merger.

The market price of the combined company's common stock could be subject to significant fluctuations following the merger. Market prices for securities of early-stage pharmaceutical, biotechnology and other life sciences companies have historically been particularly volatile. Some of the factors that may cause the market price of the combined company's common stock to fluctuate include:

the results of the combined company's current and any future clinical trials of its product candidates;

the results of ongoing preclinical studies and planned clinical trials of the combined company's preclinical product candidates;

the entry into, or termination of, key agreements, including key strategic alliance agreements;

the results and timing of regulatory reviews relating to the approval of the combined company's product candidates;

the initiation of, material developments in, or conclusion of litigation to enforce or defend any of the combined company's intellectual property rights;

failure of any of the combined company's product candidates, if approved, to achieve commercial success;

general and industry-specific economic conditions that may affect the combined company's research and development expenditures;

the results of clinical trials conducted by others on drugs that would compete with the combined company's product candidates;

issues in manufacturing the combined company's product candidates or any approved products;

the loss of key employees;

the introduction of technological innovations or new commercial products by competitors of the combined company;

changes in estimates or recommendations by securities analysts, if any, who cover the combined company's common stock;

future sales of the combined company's common stock;

changes in the structure of health care payment systems; and

period-to-period fluctuations in the combined company's financial results.

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Moreover, the stock markets in general have experienced substantial volatility that has often been unrelated to the operating performance of individual companies. These broad market fluctuations may also adversely affect the trading price of the combined company's common stock.

In the past, following periods of volatility in the market price of a company's securities, stockholders have often instituted class action securities litigation against those companies. Such

litigation, if instituted, could result in substantial costs and diversion of management attention and resources, which could significantly harm the combined company's profitability and reputation.

The combined company's management will be required to devote substantial time to comply with public company regulations.

As a public company, the combined company will incur significant legal, accounting and other expenses that TorreyPines does not incur as a private company. In addition, the Sarbanes-Oxley Act of 2002, or the Sarbanes-Oxley Act, as well as rules subsequently implemented by the SEC and the NASDAQ Global Market, impose various requirements on public companies, including with respect to corporate governance practices. The combined company's management and other personnel will need to devote a substantial amount of time to these requirements. Moreover, these rules and regulations will increase the combined company's legal and financial compliance costs relative to those of TorreyPines and will make some activities more time-consuming and costly.

In addition, the Sarbanes-Oxley Act requires, among other things, that the combined company maintain effective internal controls for financial reporting and disclosure controls and procedures. In particular, the combined company must perform system and process evaluation and testing of its internal controls over financial reporting to allow management to report on the effectiveness of its internal controls over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act. The combined company's compliance with Section 404 will require that it incur substantial accounting and related expense and expend significant management efforts. The combined company will need to hire additional accounting and financial staff to satisfy the ongoing requirements of Section 404. Moreover, if the combined company is not able to comply with the requirements of Section 404, or if the combined company or its independent registered public accounting firm identifies deficiencies in its internal controls over financial reporting that are deemed to be material weaknesses, the market price of the combined company's stock could decline and the combined company could be subject to sanctions or investigations by the NASDAQ Global Market, SEC or other regulatory authorities.

Anti-takeover provisions in the combined company's stockholder rights plan and in its certificate of incorporation and bylaws may prevent or frustrate attempts by stockholders to change the board of directors or current management and could make a third-party acquisition of the combined company difficult.

The combined company will be party to a stockholder rights plan, also referred to as a poison pill, which is intended to deter a hostile takeover of the combined company by making such proposed acquisition more expensive and less desirable to the potential acquirer. The stockholder rights plan and the combined company's certificate of incorporation and bylaws, as amended, will contain provisions that may discourage, delay or prevent a merger, acquisition or other change in control that stockholders may consider favorable, including transactions in which stockholders might otherwise receive a premium for their shares. These provisions could limit the price that investors might be willing to pay in the future for shares of the combined company's common stock.

The combined company may continue to incur losses for the foreseeable future, and might never achieve profitability.

Axonyx began operations in 1997 and has incurred a net operating loss every year since that time. As of June 30, 2006, Axonyx had an accumulated deficit of approximately \$99.3 million. TorreyPines has incurred operating losses in each year since its inception, and TorreyPines may never achieve profitability. As of June 30, 2006, TorreyPines had an accumulated deficit of approximately \$70.7 million. The combined company may never become profitable, even if the combined company is able to commercialize additional products. The combined company will need to conduct significant research, development, testing and regulatory compliance activities that, together with projected general and administrative expenses, is expected to result in substantial increased operating losses for at least

the next several years. Even if the combined company does achieve profitability, it may not be able to sustain or increase profitability on a quarterly or annual basis.

The combined company may be required to suspend, repeat or terminate its clinical trials if they do not meet regulatory requirements, the results are negative or inconclusive, or if the trials are not well designed.

Before regulatory approval for any potential product can be obtained, the combined company must undertake extensive clinical testing in humans to demonstrate the tolerability and efficacy of the product, both on its own terms, and as compared to the other principal drugs on the market that have the same therapeutic indication. Neither Axonyx nor TorreyPines can assure investors that it will obtain authorization to permit product candidates that are already in the preclinical development phase to enter the human clinical testing phase. In addition, neither Axonyx nor TorreyPines can assure investors that any authorized preclinical or clinical testing will be completed successfully within any specified time period by the combined company, or without significant additional resources or expertise to those originally expected to be necessary. Neither Axonyx nor TorreyPines can assure investors that such testing will show potential products to be safe and efficacious or that any such product will be approved for a specific indication. Further, the results from preclinical studies and early clinical trials may not be indicative of the results that will be obtained in later-stage clinical trials. In addition, the combined company or regulatory authorities may suspend clinical trials at any time on the basis that the participants are being exposed to unacceptable health risks.

Completion of clinical tests depends on, among other things, the number of patients available for testing, which is a function of many factors, including the number of patients with the relevant conditions, the nature of the clinical testing, the proximity of patients to clinical testing centers, the eligibility criteria for tests as well as competition with other clinical testing programs involving the same patient profile but different treatments. The combined company will rely on third parties, such as contract research organizations and/or co-operative groups, to assist it in overseeing and monitoring clinical trials as well as to process the clinical results and manage test requests, which may result in delays or failure to complete trials, if the third parties fail to perform or to meet the applicable standards. A failure by the combined company or such third parties to keep to the terms of a product program development for any particular product candidate or to complete the clinical trials for a product candidate in the envisaged time frame could have significant negative repercussions on the combined company's business and financial condition.

Even if the combined company's product candidates are successful in clinical trials, the combined company may not be able to successfully commercialize them.

Since Axonyx's inception in 1997 and since TorreyPines began operations as Neurogenetics, Inc. in 2000, both companies have dedicated substantially all of their resources to the research and development of their technologies and related compounds. All of Axonyx's and TorreyPines compounds currently are in research or development, and none have been submitted for marketing approval. The combined company's compounds may not enter human clinical trials on a timely basis, if at all, and the combined company may not develop any product candidates suitable for commercialization.

Prior to commercialization, each product candidate will require significant additional research, development and preclinical testing and extensive clinical investigation before submission of any regulatory application for marketing approval. Potential products that appear to be promising at early stages of development may not reach the market for a number of reasons, including that they may:

be found ineffective or cause harmful side effects during preclinical testing or clinical trials;

fail to receive necessary regulatory approvals;

be difficult to manufacture on a large scale;

be uneconomical to produce;

fail to achieve market acceptance; or

be precluded from commercialization by proprietary rights of third parties.

The combined company's product development efforts or the combined company's collaborative partners' efforts may not be successfully completed and the combined company may not obtain required regulatory approvals. Any products, if introduced, may not be successfully marketed nor achieve customer acceptance.

If the combined company fails to establish and maintain collaborations or if its partners do not perform, the combined company may be unable to develop and commercialize its product candidates.

Axonyx and TorreyPines have each entered into collaborative arrangements with third parties to develop and/or commercialize product candidates. Additional collaborations might be necessary in order for the combined company to fund its research and development activities and third-party manufacturing arrangements, seek and obtain regulatory approvals and successfully commercialize existing and future product candidates. If the combined company fails to maintain the existing collaborative arrangements held by Axonyx and TorreyPines or fails to enter into additional collaborative arrangements, the number of product candidates from which the combined company could receive future revenues would decline.

The combined company's dependence on collaborative arrangements with third parties will subject it to a number of risks that could harm the combined company's ability to develop and commercialize products:

collaborative arrangements might not be on terms favorable to the combined company;

disagreements with partners may result in delays in the development and marketing of products, termination of collaboration agreements or time consuming and expensive legal action;

the combined company cannot control the amount and timing of resources partners devote to product candidates or their prioritization of product candidates, and partners may not allocate sufficient funds or resources to the development, promotion or marketing of the combined company's products, or may not perform their obligations as expected;

partners may choose to develop, independently or with other companies, alternative products or treatments, including products or treatments which compete with the combined company's;

agreements with partners may expire or be terminated without renewal, or partners may breach collaboration agreements with the combined company;

business combinations or significant changes in a partner's business strategy might adversely affect that partner's willingness or ability to complete its obligations to the combined company; and

the terms and conditions of the relevant agreements may no longer be suitable.

Axonyx and TorreyPines cannot assure you that the combined company will be able to negotiate future collaboration agreements or that those currently in existence will make it possible for the combined company to fulfill its objectives.

The combined company may not complete its clinical trials in the time expected, which could delay or prevent the commercialization of its products.

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Although for planning purposes Axonyx and TorreyPines forecast the commencement and completion of clinical trials, the actual timing of these events can vary dramatically due to factors such

as delays, scheduling conflicts with participating clinicians and clinical institutions and the rate of patient enrollment. Clinical trials involving the combined company's product candidates may not commence nor be completed as forecasted. In certain circumstances the combined company will rely on academic institutions or clinical research organizations to conduct, supervise or monitor some or all aspects of clinical trials involving the combined company's products. The combined company will have less control over the timing and other aspects of these clinical trials than if it conducted them entirely on its own. These trials may not commence or be completed as either Axonyx or TorreyPines expect. They may not be conducted successfully. Failure to commence or complete, or delays in, any of the combined company's planned clinical trials could delay or prevent the commercialization of the combined company's products and harm its business.

If the combined company fails to keep pace with rapid technological change in the biotechnology and pharmaceutical industries, its products could become obsolete.

Biotechnology and related pharmaceutical technology have undergone and are subject to rapid and significant change. Axonyx and TorreyPines expect that the technologies associated with biotechnology research and development will continue to develop rapidly. The combined company's future will depend in large part on its ability to maintain a competitive position with respect to these technologies. Any compounds, products or processes that the combined company develops may become obsolete before the combined company recovers any expenses incurred in connection with developing these products.

If the combined company loses key personnel or is unable to attract and retain additional personnel, the combined company may be unable to pursue collaborations or develop its own products.

The loss of any key members of the combined company's scientific or management staff, or failure to attract or retain other key scientific employees, could prevent the combined company from pursuing collaborations or developing its products and core technologies. Recruiting and retaining qualified scientific personnel to perform research and development work are critical to the combined company's success. There is intense competition for qualified scientists and managerial personnel from numerous pharmaceutical and biotechnology companies, as well as from academic and government organizations, research institutions and other entities. In addition, the combined company will rely on consultants and advisors, including scientific and clinical advisors, to assist it in formulating its research and development strategy. All of the combined company's consultants and advisors will be employed by other employers or be self-employed, and will have commitments to or consulting or advisory contracts with other entities that may limit their availability to the combined company.

FORWARD-LOOKING STATEMENTS

This joint proxy statement/prospectus contains "forward-looking statements" of Axonyx within the meaning of the Private Securities Litigation Reform Act of 1995, which is applicable to Axonyx because Axonyx is a public company subject to the reporting requirements of the Exchange Act but is not applicable to TorreyPines because TorreyPines is not a public company and is not currently subject to the reporting requirements of the Exchange Act. These forward-looking statements include:

the potential value created by the proposed merger for Axonyx's and TorreyPines' securityholders;

the efficacy, safety and intended utilization of TorreyPines' and Axonyx's product candidates;

the conduct and results of TorreyPines' and Axonyx's research, discovery and preclinical efforts and clinical trials;

TorreyPines' and Axonyx's plans regarding future research, discovery and preclinical efforts and clinical activities and collaborative, intellectual property and regulatory activities;

the period in which TorreyPines expects cash will be available to fund its current operating plan, both before and after giving effect to the merger;

the amount of shares Axonyx expects to issue in connection with the merger; and

each of Axonyx's and TorreyPines' results of operations, financial condition and businesses, and products and product candidates under development and the expected impact of the proposed merger on the combined company's financial and operating performance.

Words such as "anticipates," "believes," "forecast," "potential," "contemplates," "expects," "intends," "plans," "believes," "seeks," "estimates," "could," "would," "will," "may," "can" and similar expressions identify forward-looking statements. These forward-looking statements are not guarantees of future performance and are subject to risks and uncertainties that could cause actual results to differ materially from the results contemplated by the forward-looking statements, including the following:

Axonyx and TorreyPines may not be able to complete the proposed merger;

TorreyPines' and Axonyx's product candidates that appear promising in early research and clinical trials may not demonstrate safety and efficacy in subsequent clinical trials;

risks associated with reliance on collaborative partners for further clinical trials and other development activities; and

risks involved with development and commercialization of product candidates.

Many of the important factors that will determine these results and values are beyond Axonyx's and TorreyPines' ability to control or predict. You are cautioned not to put undue reliance on any forward-looking statements. Except as otherwise required by law, Axonyx and TorreyPines do not assume any obligation to update any forward-looking statements. In evaluating the merger, you should carefully consider the discussion of risks and uncertainties in the section entitled "Risk Factors" in this joint proxy statement/prospectus.

THE ANNUAL MEETING OF AXONYX STOCKHOLDERS

Date, Time and Place

The annual meeting of Axonyx stockholders will be held on September 28, 2006, at the offices of Eisner LLP, 750 Third Avenue, 16th Floor, New York, NY 10017 commencing at 2:00 p.m. local time. Axonyx is sending this joint proxy statement/prospectus to its stockholders in connection with the solicitation of proxies by the Axonyx board of directors for use at the Axonyx annual meeting and any adjournments or postponements of the annual meeting. This joint proxy statement/prospectus is first being furnished to stockholders of Axonyx on or about August 30, 2006.

Purposes of the Axonyx Annual Meeting

The purposes of the Axonyx annual meeting are:

1. To consider and vote upon a proposal to approve the issuance of Axonyx common stock and warrants to purchase common stock, referred to herein as the merger warrants, and the resulting change in control pursuant to the Agreement and Plan of Merger and Reorganization, dated as of June 7, 2006, by and among Axonyx, Autobahn Acquisition, Inc., a wholly owned subsidiary of Axonyx, and TorreyPines Therapeutics, Inc., a Delaware corporation, as described in this joint proxy statement/prospectus.
2. To approve an amendment to Axonyx's articles of incorporation effecting the reverse stock split, as described in this joint proxy statement/prospectus.
3. To approve an amendment to Axonyx's articles of incorporation to change the name "Axonyx Inc." to "TorreyPines Therapeutics, Inc."
4. To approve a change of Axonyx's state of incorporation from Nevada to Delaware, as described in this joint proxy statement/prospectus.
5. To approve the adoption, contingent upon and effective as of immediately following the effective time of the merger, of the Axonyx 2006 Equity Incentive Plan, as described in this joint proxy statement/prospectus.
6. To elect the six directors nominated by the nominating/governance committee of Axonyx's board of directors and named herein; provided, however, that if the merger is completed, it is anticipated that the Axonyx board of directors will consist of the ten people identified in this joint proxy statement/prospectus, four of whom are listed nominees.
7. To consider and vote upon an adjournment of the Axonyx annual meeting, if necessary, to solicit additional proxies if there are not sufficient votes in favor of Axonyx Proposal Nos. 1, 2, 3 and 4.
8. To transact such other business as may properly come before the Axonyx annual meeting or any adjournment or postponement thereof.

Recommendation of Axonyx's Board of Directors

The Axonyx board of directors has determined and believes that the issuance of shares of Axonyx common stock pursuant to the merger and the issuance of the merger warrants and the resulting change in control is advisable to, and in the best interests of, Axonyx and its stockholders and has approved such items. The Axonyx board of directors unanimously recommends that Axonyx stockholders vote "FOR" Axonyx Proposal No. 1 to approve the issuance of shares of Axonyx common stock and the merger warrants in the merger and the resulting change in control.

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The Axonyx board of directors has determined and believes that it is advisable to, and in the best interests of, Axonyx and its stockholders to approve an amendment to Axonyx's articles of incorporation effecting the reverse stock split, as described in this joint proxy statement/prospectus. The Axonyx board of directors unanimously recommends that Axonyx stockholders vote "FOR" Axonyx Proposal No. 2 to approve the amendment to Axonyx's articles of incorporation effecting the reverse stock split, as described in this joint proxy statement/prospectus.

The Axonyx board of directors has determined and believes that the amendment of Axonyx's articles of incorporation to change the name of Axonyx to "TorreyPines Therapeutics, Inc." is advisable to, and in the best interests of, Axonyx and its stockholders and has approved such name change. The Axonyx board of directors unanimously recommends that Axonyx stockholders vote "FOR" Axonyx Proposal No. 3 to approve the name change.

The Axonyx board of directors has determined and believes that it is advisable to, and in the best interests of, Axonyx and its stockholders to approve a change of Axonyx's state of incorporation from Nevada to Delaware, as described in this joint proxy statement/prospectus. The Axonyx board of directors unanimously recommends that Axonyx stockholders vote "FOR" Proposal No. 4 to approve a change of Axonyx's state of incorporation from Nevada to Delaware, as described in this joint proxy statement/prospectus.

The Axonyx board of directors has determined and believes that the adoption, contingent upon and effective as of immediately following the effective time of the merger, of the Axonyx 2006 equity incentive plan, as described in this joint proxy statement/prospectus, is advisable to, and in the best interests of, Axonyx and its stockholders and has approved and adopted the Axonyx 2006 equity incentive plan. The Axonyx board of directors unanimously recommends that Axonyx stockholders vote "FOR" Axonyx Proposal No. 5 to approve the adoption of the Axonyx 2006 equity incentive plan, as described in this joint proxy statement/prospectus.

The Axonyx board of directors unanimously recommends a vote in favor of each of the six named nominees in Proposal No. 6.

The Axonyx board of directors has determined and believes that adjourning the Axonyx annual meeting, if necessary, to solicit additional proxies if there are not sufficient votes in favor of Axonyx Proposal Nos. 1, 2, 3 and 4 is advisable to, and in the best interests of, Axonyx and its stockholders and has approved and adopted the proposal. The Axonyx board of directors unanimously recommends that Axonyx stockholders vote "FOR" Axonyx Proposal No. 7 to adjourn the Axonyx annual meeting, if necessary, to solicit additional proxies if there are not sufficient votes in favor of Axonyx Proposal Nos. 1, 2, 3 and 4.

Record Date and Voting Power

Only holders of record of Axonyx common stock at the close of business on the record date, August 14, 2006, are entitled to notice of, and to vote at, the Axonyx annual meeting. There were approximately 334 holders of record of Axonyx common stock at the close of business on the record date. At the close of business on the record date, 53,680,721 shares of Axonyx common stock were issued and outstanding. Each share of Axonyx common stock entitles the holder thereof to one vote on each matter submitted for stockholder approval. See the section entitled "Principal Stockholders of Axonyx" in this joint proxy statement/prospectus for information regarding persons known to the management of Axonyx to be the beneficial owners of more than 5% of the outstanding shares of Axonyx common stock.

Voting and Revocation of Proxies

The proxy accompanying this joint proxy statement/prospectus is solicited on behalf of the board of directors of Axonyx for use at the Axonyx annual meeting.

If you are a stockholder of record of Axonyx as of the record date referred to above, you may vote in person at the Axonyx annual meeting or vote by proxy using the enclosed proxy card. Whether or not you plan to attend the Axonyx annual meeting, Axonyx urges you to vote by proxy to ensure your vote is counted. You may still attend the Axonyx annual meeting and vote in person if you have already voted by proxy. As a stockholder of record:

to vote in person, come to the Axonyx annual meeting and Axonyx will give you a ballot when you arrive.

to vote using the proxy card, simply mark, sign and date your proxy card and return it promptly in the postage-paid envelope provided. If you return your signed proxy card to Axonyx before the Axonyx annual meeting, Axonyx will vote your shares as you direct.

to vote over the telephone, dial the toll-free number on your proxy card or voting instruction form using a touch-tone phone and follow the recorded instructions. You will be asked to provide the company number and control number from the enclosed proxy card. Your vote must be received by 11:59 p.m., Eastern Time on September 27, 2006 to be counted.

to vote on the Internet, go to the website on the proxy card or voting instruction form to complete an electronic proxy card. You will be asked to provide the company number and control number from the enclosed proxy card. Your vote must be received by 11:59 p.m., Eastern Time on September 27, 2006 to be counted.

If your Axonyx shares are held by your broker as your nominee (that is, in street name), the enclosed voting instruction card is sent by the institution that holds your shares. Please follow the instructions included on that proxy card regarding how to instruct your broker to vote your Axonyx shares. If you do not give instructions to your broker, your broker can vote your Axonyx shares with respect to "discretionary" items but not with respect to "non-discretionary" items. Discretionary items are proposals considered routine under the rules of the New York Stock Exchange on which your broker may vote shares held in street name in the absence of your voting instructions. On non-discretionary items for which you do not give your broker instructions, the Axonyx shares will be treated as broker non-votes. It is anticipated that Axonyx Proposal Nos. 1, 2, 3, 4 and 5 will be non-discretionary items.

All properly executed proxies that are not revoked will be voted at the Axonyx annual meeting and at any adjournments or postponements of the Axonyx annual meeting in accordance with the instructions contained in the proxy. If a holder of Axonyx common stock executes and returns a proxy and does not specify otherwise, the shares represented by that proxy will be voted "FOR" Axonyx Proposal No. 1 to approve the issuance of shares of Axonyx common stock and the merger warrants in the merger, and for the resulting change in control; "FOR" Axonyx Proposal No. 2 to approve an amendment to Axonyx's articles of incorporation effecting the reverse stock split described in this joint proxy statement/prospectus; "FOR" Axonyx Proposal No. 3 to approve an amendment to Axonyx's articles of incorporation to change the name of "Axonyx Inc." to "TorreyPines Therapeutics, Inc."; "FOR" Axonyx Proposal No. 4 to approve a change of Axonyx's state of incorporation from Nevada to Delaware, as described in this joint proxy statement/prospectus; "FOR" Axonyx Proposal No. 5 to approve the adoption of the Axonyx 2006 Equity Incentive Plan, as described in this joint proxy statement/prospectus; "FOR" Axonyx Proposal No. 6 for the election of each of the six named nominees to Axonyx's board of directors; and "FOR" Axonyx Proposal No. 7 to adjourn the Axonyx annual meeting, if necessary, to solicit additional proxies if there are not sufficient votes in favor of

Axonyx Proposal Nos. 1, 2, 3 and 4 in accordance with the recommendation of the Axonyx board of directors.

Axonyx stockholders of record, other than those Axonyx stockholders who have executed voting agreements, may change their vote at any time before their proxy is voted at the Axonyx annual meeting in one of three ways. First, a stockholder of record of Axonyx can send a written notice to the Secretary of Axonyx stating that the stockholder would like to revoke its proxy. Second, a stockholder of record of Axonyx can submit new proxy instructions either on a new proxy card, by telephone or via the Internet. Third, a stockholder of record of Axonyx can attend the Axonyx annual meeting and vote in person. Attendance alone will not revoke a proxy. If an Axonyx stockholder of record or a stockholder who owns Axonyx shares in "street name" has instructed a broker to vote its shares of Axonyx common stock, the stockholder must follow directions received from its broker to change those instructions.

Required Vote

The presence, in person or represented by proxy, at the Axonyx annual meeting of the holders of a majority of the shares of Axonyx common stock outstanding and entitled to vote at the Axonyx annual meeting is necessary to constitute a quorum at the meeting. Abstentions and broker non-votes will be counted towards a quorum. Approval of each of Axonyx Proposal Nos. 1, 5 and 7 requires the affirmative vote of the holders of a majority of the Axonyx common stock having voting power present in person or represented by proxy at the Axonyx annual meeting. Approval of each of Axonyx Proposal Nos. 2, 3 and 4 requires the affirmative vote of holders of a majority of the Axonyx common stock having voting power outstanding on the record date for the Axonyx annual meeting. For the election of directors (Axonyx Proposal No. 6), the six nominees receiving the most "For" votes from the shares having voting power present in person or represented by proxy will be elected.

Votes will be counted by the inspector of election appointed for the meeting, who will separately count "For", with respect to proposals other than Axonyx Proposal No. 6, and "Against" votes, abstentions and broker non-votes. Abstentions will be counted towards the vote total for each proposal (other than the election of directors) and will have the same effect as "Against" votes. Broker non-votes will have the same effect as "Against" votes for Axonyx Proposal Nos. 2, 3, and 4. For Axonyx Proposal Nos. 1, 5 and 7, broker non-votes will have no effect and will not be counted towards the vote total.

At the record date for the Axonyx annual meeting, the directors and executive officers of Axonyx beneficially owned approximately 8.5% of the outstanding shares of Axonyx common stock entitled to vote at the Axonyx annual meeting, and the directors and executive officers of Axonyx owning these shares are subject to voting agreements. Each stockholder that entered into a voting agreement has agreed to vote all shares of Axonyx common stock owned by him as of the record date in favor of the approval of the issuance of the shares of Axonyx common stock and merger warrants pursuant to the merger, the amendment to Axonyx's articles of incorporation effecting the reverse stock split and the name change from "Axonyx Inc." to "TorreyPines Therapeutics, Inc.", the change of Axonyx's state of incorporation from Nevada to Delaware, the Axonyx 2006 Equity Incentive Plan and any action in furtherance of the foregoing, and against any matter that would result in a breach of the merger agreement by Axonyx and any other action which is intended to, or could reasonably be expected to, impede, interfere with, delay, postpone, discourage or adversely affect the merger or any of the transactions contemplated by the merger agreement. As of June 15, 2006, neither TorreyPines nor any of TorreyPines' affiliates owned any shares of Axonyx common stock entitled to vote at the Axonyx annual meeting.

Solicitation of Proxies

In addition to solicitation by mail, the directors, officers, employees and agents of Axonyx may solicit proxies from Axonyx's stockholders by personal interview, telephone, telegram or otherwise. Axonyx has retained Georgeson Inc., a proxy solicitation firm, to solicit proxies for a fee of approximately \$25,000 plus reimbursement of out-of-pocket expenses and a \$4.25 per call charge for all telephone calls made in connection with proxy solicitations and a \$5.00 per call charge for stockholder votes over the telephone. Axonyx will pay Georgeson Inc. an additional \$25,000 in the event of a contested solicitation. Axonyx and TorreyPines will share equally the costs of printing and filing this joint proxy statement/prospectus and proxy card. Arrangements will also be made with brokerage firms and other custodians, nominees and fiduciaries who are record holders of Axonyx common stock for the forwarding of solicitation materials to the beneficial owners of Axonyx common stock. Axonyx will reimburse these brokers, custodians, nominees and fiduciaries for the reasonable out-of-pocket expenses they incur in connection with the forwarding of solicitation materials.

Other Matters

As of the date of this joint proxy statement/prospectus, the Axonyx board of directors does not know of any business to be presented at the Axonyx annual meeting other than as set forth in the notice accompanying this joint proxy statement/prospectus. If any other matters should properly come before the Axonyx annual meeting, it is intended that the shares represented by proxies will be voted with respect to such matters in accordance with the judgment of the persons voting the proxies.

THE SPECIAL MEETING OF TORREYPINES STOCKHOLDERS

General

TorreyPines is furnishing this joint proxy statement/prospectus to holders of TorreyPines common stock and TorreyPines preferred stock in connection with the solicitation of proxies by the TorreyPines board of directors for use at the TorreyPines special meeting to be held on September 28, 2006 and at any adjournment or postponement thereof. This joint proxy statement/prospectus is first being furnished to stockholders of TorreyPines on or about August 30, 2006.

Date, Time and Place

The special meeting of TorreyPines stockholders will be held on September 28, 2006 at 9:00 a.m., local time, at the offices of Cooley Godward LLP, 4401 Eastgate Mall, San Diego, CA 92121.

Purposes of the TorreyPines Special Meeting

The purposes of the TorreyPines special meeting are:

1. To consider and vote upon TorreyPines Proposal No. 1 to adopt the merger agreement.
2. To consider and vote upon TorreyPines Proposal No. 2 to approve an amendment to TorreyPines' certificate of incorporation to change the name "TorreyPines Therapeutics, Inc." to "TPTX, Inc."
3. To consider and vote on TorreyPines Proposal No. 3 to adjourn the TorreyPines special meeting, if necessary, to solicit additional proxies if there are not sufficient votes in favor of the adoption of the merger agreement.
4. To transact such other business as may properly come before the TorreyPines special meeting or any adjournments, postponements or continuations of the TorreyPines special meeting.

Recommendations of TorreyPines' Board of Directors

The TorreyPines board of directors has determined and believes that the merger is advisable and fair to, and in the best interests of, TorreyPines and its stockholders and has approved the merger and the merger agreement. The TorreyPines board of directors unanimously recommends that TorreyPines stockholders vote "FOR" TorreyPines Proposal No. 1 to adopt the merger agreement.

The TorreyPines board of directors has determined and believes that the name change is advisable, and in the best interests of, TorreyPines and its stockholders and has approved the name change. The TorreyPines board of directors unanimously recommends that TorreyPines stockholders vote "FOR" TorreyPines Proposal No. 2 to change the name "TorreyPines Therapeutics, Inc." to "TPTX, Inc."

The TorreyPines board of directors has concluded that the proposal to adjourn the TorreyPines special meeting, if necessary, to solicit additional proxies if there are not sufficient votes in favor of the adoption of the merger agreement is advisable to, and in the best interests of, TorreyPines and its stockholders and has approved and adopted the proposal. Accordingly, the TorreyPines board of directors unanimously recommends that TorreyPines stockholders vote "FOR" TorreyPines Proposal No. 3 to adjourn the TorreyPines special meeting, if necessary, to solicit additional proxies if there are not sufficient votes in favor of the adoption of the merger agreement.

Record Date; Shares of Common Stock and Preferred Stock Outstanding and Entitled to Vote

TorreyPines has fixed the close of business on August 14, 2006 as the record date for determination of the holders of TorreyPines common stock and TorreyPines preferred stock entitled to notice of and to attend and vote at the TorreyPines special meeting or at any adjournment or postponement thereof. As of the close of business on August 14, 2006, there were 3,456,052 shares of TorreyPines common stock and 48,994,673 shares of TorreyPines preferred stock, consisting of 8,794,800 shares of Series A preferred stock, 12,736,828 shares of Series B preferred stock, 23,220,199 shares of Series C preferred stock and 4,242,846 shares of Series C-2 preferred stock, outstanding and entitled to vote. Each share of TorreyPines common stock and each share of TorreyPines preferred stock entitles its holder to one vote at the TorreyPines special meeting on all matters properly presented at the TorreyPines special meeting.

Quorum and Vote of TorreyPines Stockholders Required

A quorum of stockholders is necessary to hold a valid meeting. The presence, in person or by proxy, at the TorreyPines special meeting of the holders of a majority of the shares of TorreyPines common stock and TorreyPines preferred stock issued and outstanding and entitled to vote at the TorreyPines special meeting is necessary to constitute a quorum at the TorreyPines special meeting. If a quorum is not present at the TorreyPines special meeting, TorreyPines expects that the meeting will be adjourned or postponed to solicit additional proxies.

The adoption of the merger agreement and the approval of an amendment to TorreyPines' certificate of incorporation to change the name "TorreyPines Therapeutics, Inc." to "TPTX, Inc.", requires the affirmative vote of (a) the holders of a majority of the shares of TorreyPines common stock and TorreyPines preferred stock outstanding on the record date and entitled to vote at the TorreyPines special meeting, voting as a single class and on an as-converted basis, and (b) the holders of two-thirds of the shares of TorreyPines preferred stock outstanding on the record date and entitled to vote at the TorreyPines special meeting, voting as a single class and on an as-converted basis.

The adjournment of the TorreyPines special meeting, if necessary, to solicit additional proxies if there are not sufficient votes in favor of the adoption of the merger agreement requires the affirmative vote of the holders of a majority of the stock having voting power present in person or by proxy at the TorreyPines special meeting.

Abstentions count as being present to establish a quorum and will have the same effect as votes against the adoption of the merger agreement and against the adjournment of the TorreyPines special meeting, if necessary, to solicit additional proxies if there are not sufficient votes in favor of the adoption of the merger agreement.

As of August 23, 2006, stockholders of TorreyPines that owned in the aggregate 1,100,000 shares of common stock and 39,379,400 shares of preferred stock of TorreyPines, representing approximately 32% of the outstanding TorreyPines common stock of the outstanding capital stock, approximately 80% of the outstanding TorreyPines preferred stock and approximately 77% of the aggregate outstanding TorreyPines capital stock, have entered into agreements to vote their shares of common stock and preferred stock in favor of the adoption of the merger agreement and to adjourn the TorreyPines special meeting, if necessary, to solicit additional proxies if there are not sufficient votes in favor of the adoption of the merger agreement. All of these stockholders are executive officers, directors, or entities controlled by such persons, or 5% stockholders, of TorreyPines. Please see the section entitled "Agreements Related to the Merger Voting Agreements" in this joint proxy statement/prospectus. Notwithstanding the foregoing, if the board of directors of TorreyPines withdraws its recommendation in favor of the merger to the extent permitted under the merger agreement and TorreyPines receives a superior offer, as defined in the section entitled "The Merger Agreement No Solicitation" in this joint proxy statement/prospectus, the voting agreement will only apply to the number of shares of

TorreyPines capital stock that is equal to 33% of the outstanding TorreyPines common stock and preferred stock, voting together as a class, and 33% of the TorreyPines preferred stock, voting separately as a class.

If you do not submit a proxy card or vote at the TorreyPines special meeting, your shares of TorreyPines common stock and/or TorreyPines preferred stock will not be counted as present for the purpose of determining a quorum and will have the same effect as votes against the adoption of the merger agreement, but will not be counted for any purpose in determining whether to adjourn the TorreyPines special meeting, if necessary, to solicit additional proxies if there are not sufficient votes in favor of the adoption of the merger agreement.

Voting of Proxies

TorreyPines requests that its stockholders complete, date and sign the accompanying proxy and promptly return it in the accompanying envelope or otherwise mail it to TorreyPines. All properly executed proxies that TorreyPines receives prior to the vote at the TorreyPines special meeting, and that are not revoked, will be voted in accordance with the instructions indicated on the proxies or, if no instruction is indicated, to adopt the merger agreement, to approve the name change and to adjourn the TorreyPines special meeting, if necessary, to solicit additional proxies if there are not sufficient votes in favor of the adoption of the merger agreement. TorreyPines' board of directors does not currently intend to bring any other business before the TorreyPines special meeting and, so far as TorreyPines' board of directors knows, no other matters are to be brought before the special meeting. If other business properly comes before the TorreyPines special meeting, the proxies will vote in accordance with their own judgment.

In addition to solicitation by use of the mails, proxies may be solicited by directors, officers, employees or agents of TorreyPines in person or by telephone, telegram or other means of communication. No additional compensation will be paid to directors, officers or other regular employees of TorreyPines for such services.

Revocation of Proxies

Stockholders may revoke their proxies at any time prior to use by delivering to the Secretary of TorreyPines a signed notice of revocation or a later-dated signed proxy, or by attending the TorreyPines special meeting and voting in person. Attendance at the TorreyPines special meeting does not in itself constitute the revocation of a proxy. You may also attend the TorreyPines special meeting in person instead of submitting a proxy.

THE MERGER

This section and the section entitled "The Merger Agreement" in this joint proxy statement/prospectus describe the material aspects of the merger, including the merger agreement. While Axonyx and TorreyPines believe that this description covers the material terms of the merger and the merger agreement, it may not contain all of the information that is important to you. You should read carefully this entire joint proxy statement/prospectus for a more complete understanding of the merger and the merger agreement, including the merger agreement attached as Annex A, the opinion of Banc of America Securities attached as Annex B, and the other documents to which you are referred herein. See the section entitled "Where You Can Find More Information" in this joint proxy statement/prospectus.

Background of the Merger

Historical Background for Axonyx

In February 2005, Axonyx announced that Phenserine, its lead compound in development for the potential symptomatic and disease progression treatment for mild to moderate AD failed to achieve statistical significance in its primary endpoints in its first Phase III trial. Following this announcement, Axonyx halted additional patient recruitment for the then ongoing two additional Phase III clinical trials for Phenserine in order to reevaluate the planned Phenserine clinical program and consider the alternatives available to Axonyx to maximize stockholder value. Due in part to Phenserine's disappointing Phase III results and the lagging trading price of Axonyx common stock, the board of directors of Axonyx asked Axonyx management to evaluate Axonyx's existing product pipeline and the strategic alternatives available to Axonyx.

On March 23, 2005, Axonyx management presented to the board of directors of Axonyx a variety of strategic directions that Axonyx could pursue, including continuing to develop its existing portfolio of compounds, in-licensing additional products, out-licensing Phenserine, shifting Axonyx's focus from high-risk research and development activities to lower-risk, potentially nearer-term revenue generating activities, and entering into a strategic business combination. Following the presentation, the Axonyx board directed Axonyx management to identify, evaluate and recommend opportunities to expand Axonyx's product portfolio and to continue to explore other strategic alternatives available to Axonyx.

In April 2005, Axonyx management began a process of identifying and evaluating potential compounds that might be added to Axonyx's portfolio. Through the summer of 2005, Axonyx management continued to explore potential product acquisitions and licensing opportunities. As the process continued over the next several months, Axonyx management began to simultaneously identify and consider companies that might be candidates for a strategic business combination. Through February 2006 Axonyx management screened over 150 opportunities for product in-licensing or business combination transactions, evaluated over 50 such opportunities that met Axonyx's initial diligence criteria and had substantive discussions with 18 of these companies. As Axonyx's diligence proceeded, management further narrowed the list of candidates.

In June 2005, Axonyx management reported to the board of directors of Axonyx that it was exploring an out-licensing opportunity with respect to Phenserine rights in South Korea and another out-licensing opportunity for Phenserine in the veterinary market. Axonyx management also reported on its ongoing evaluation of potential product candidates as well as potential strategic business combination candidates.

In June 2005, following due diligence review and negotiation, Axonyx made a non-binding offer to acquire the assets of a privately-held Canadian neuropharmaceutical company. This acquisition did not proceed as the parties were unable to agree upon the value of the assets.

In July 2005, a second interim statistical analysis from a then-ongoing Phase IIb clinical trial of Phenserine again failed to produce statistically significant results for Phenserine. At a meeting of the

board of directors of Axonyx on July 25, 2005, the board of directors of Axonyx considered Axonyx's options with respect to continuing clinical trials with respect to Phenserine, as well as Axonyx's ongoing evaluation of strategic initiatives. Axonyx management reported that it had reviewed and evaluated a significant number of companies and compounds in its effort to identify additional product candidates that might be added to Axonyx's portfolio. Axonyx management reported that it was also continuing to evaluate potential candidates for a possible strategic business combination and seeking potential out-licensing opportunities for Phenserine. The Axonyx board of directors authorized Axonyx management to continue its examination of all of these strategic alternatives.

During July through October 2005 Axonyx conducted extensive due diligence review of and negotiations with a European biopharmaceutical company for in-licensing its CNS product candidates. These discussions evolved into negotiations regarding the potential acquisition of the company by Axonyx. However, this acquisition did not proceed as the parties were unable to agree upon relative valuations.

In August 2005, Axonyx entered into a non-binding letter of intent to acquire a potential CNS drug candidate from a different European pharmaceutical company, which was subject to further preclinical due diligence. Axonyx elected not to in-license this compound based on the results of that diligence and terminated discussions with this company.

In early November 2005, the Axonyx board of directors determined to retain a financial advisor to assist Axonyx in its review and consideration of strategic alternatives. After meeting with a number of investment banks, in November 2005, Axonyx engaged Banc of America Securities as its financial advisor. By mid-November 2005, with the assistance of Banc of America Securities, Axonyx management evaluated two potential strategic business combination candidates that met Axonyx's revised diligence criteria, referred to as Company A and Company B. Axonyx management also evaluated two additional potential strategic business combination candidates that met Axonyx's revised diligence criteria, referred to as Company C and Company D. In late November 2005, Axonyx retained Latham & Watkins LLP as special legal counsel to assist Axonyx in any merger or acquisition transaction that might occur.

In November 2005, Axonyx received a non-binding expression of interest from Company A with respect to a potential business combination. Axonyx and Company A conducted extensive mutual due diligence and negotiations during November and December 2005, but were unable to agree upon relative valuations.

During November through December 2005 Axonyx evaluated Company B, and in December 2005 Axonyx received an offer from Company B related to a potential business combination. Following due diligence, Axonyx management determined that the product candidates under development by Company B, which were primarily in the genetics area, were not an appropriate strategic fit for Axonyx's business strategy.

During November 2005 through February 2006 Axonyx held discussions with Company C and Company D, and by the end of 2005 had not received an offer from either company.

In December 2005, Axonyx retained a healthcare consultant to assist Axonyx in its efforts to outlicense Phenserine. By January 2006, Axonyx entered into an agreement to license the rights to Phenserine in South Korea to Daewoong Pharmaceutical Company, Ltd. However, despite contacting over 30 potential licensing partners and engaging in varying degrees of discussion and information exchange with a number of these companies, Axonyx was unable to outlicense Phenserine to any other parties through July 2006.

Historical Background for TorreyPines

On December 3, 2005, the board of directors and management of TorreyPines initiated a process to evaluate the advantages and disadvantages of various strategic options for TorreyPines, including an initial public offering, a private equity financing or a merger transaction. As part of this process, they conducted a review of potential merger partners that included United States based public companies. In parallel, they performed an exploratory assessment of the financial markets to evaluate the possibilities of, and risks associated with, an initial public offering in the United States or a private equity financing. The board of directors of TorreyPines subsequently decided that, given the then-current market conditions, it would not pursue an initial public offering or a private equity financing until at least the third quarter of 2006.

Background of Discussions between Axonyx and TorreyPines

On January 11, 2006, while attending the JPMorgan Annual Healthcare Conference, TorreyPines learned that Axonyx had retained Banc of America Securities as its financial advisor.

On January 17, 2006, representatives from TorreyPines' management requested that Banc of America Securities set up a meeting with members of Axonyx's board of directors and management to discuss the possibility of a merger transaction between Axonyx and TorreyPines.

In January 2006, Axonyx continued discussions with both Company C and Company D regarding a potential business combination.

On February 2, 2006, the board of directors of TorreyPines met and agreed to initiate discussions with Axonyx regarding a possible merger.

On February 8, 2006, TorreyPines and Axonyx entered into a confidentiality agreement and representatives of the board of directors and management of TorreyPines met with representatives of the board of directors and management of Axonyx at Axonyx's offices in New York. At the meeting, representatives of both companies gave presentations regarding their respective businesses. At this meeting, the representatives of TorreyPines presented a rationale for a merger of Axonyx and TorreyPines.

On February 9, 2006, Gosse B. Bruinsma M.D., President and Chief Executive Officer of Axonyx called Neil Kurtz, M.D., President and Chief Executive Officer of TorreyPines to inform him that Axonyx was interested in pursuing further discussions with at least three companies, one of which was TorreyPines. A brief discussion was held at that time between Drs. Bruinsma and Kurtz regarding what a merger between Axonyx and TorreyPines might entail and the due diligence process that the parties would need to undertake. During February 2006, Axonyx continued discussions with TorreyPines, Company C and Company D.

On February 16, 2006, Axonyx management met with Banc of America Securities to discuss Axonyx's ongoing exploration of strategic alternatives as well as TorreyPines and Company D.

On February 22, 2006, TorreyPines selected Piper Jaffray as its financial advisor in connection with a potential merger with Axonyx.

On February 28, 2006, the board of directors of Axonyx met and discussed the ongoing discussions and due diligence efforts in which Axonyx had engaged regarding the evaluation of potential companies and compounds and the due diligence reviews Axonyx had been performing. At this meeting, the board of directors of Axonyx considered a non-binding proposal it had received from Company C relating to a potential business combination of Company C and Axonyx. Negotiations with Company D concluded without Company D making any proposal to Axonyx regarding a transaction.

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On March 6, 2006, Piper Jaffray, on behalf of TorreyPines, contacted Banc of America Securities, on behalf of Axonyx, to discuss generally the possible form and structure for the potential merger of Axonyx and TorreyPines.

On March 8, 2006, Dr. Bruinsma informed Dr. Kurtz that Axonyx was interested in moving forward with further discussions and in performing due diligence at TorreyPines' offices in La Jolla, California.

On March 8, 2006, Dr. Kurtz sent a letter to Eisai Co. Ltd., referred to as Eisai, one of TorreyPines' collaborators, informing Eisai, as required by TorreyPines' collaboration agreements with Eisai, that TorreyPines was considering the possibility of a merger with a third party. Dr. Kurtz subsequently met with representatives of Eisai at Eisai's offices in Tokyo, Japan to discuss the potential transaction and Eisai's rights under its collaboration agreements with TorreyPines.

From March 13, 2006 to March 15, 2006, representatives from Axonyx visited TorreyPines' offices in La Jolla, California for the purpose of conducting financial, business and scientific due diligence on TorreyPines.

On March 17, 2006, the board of directors of Axonyx held a meeting to discuss the status of discussions with TorreyPines and Company C. A representative from Latham & Watkins LLP reviewed with the board members their fiduciary duties in considering and evaluating the potential transactions. Axonyx's management informed the board that representatives from TorreyPines' management would attend the March 22 meeting of the Axonyx board of directors to provide the board with additional information regarding TorreyPines.

From March 21, 2006 to March 22, 2006, representatives of TorreyPines visited Axonyx's offices in New York for the purpose of conducting financial, business and scientific due diligence on Axonyx.

On March 22, 2006, at a meeting of the board of directors of Axonyx at Axonyx's offices in New York Dr. Kurtz gave a presentation on TorreyPines' drug portfolio and the rationale for the proposed merger to representatives of the board of directors and management of Axonyx at Axonyx's offices in New York. Following the presentation, the board of directors of Axonyx considered the relative strengths and weaknesses of the merger opportunities presented by TorreyPines and Company C. Following the discussion, the board of directors of Axonyx authorized Axonyx management to continue discussions with TorreyPines and Company C.

On March 22, 2006, TorreyPines executed an engagement letter formally retaining Piper Jaffray as TorreyPines' financial advisor in connection with the potential merger.

On March 28, 2006, TorreyPines submitted a non-binding written term sheet to Axonyx that outlined general terms of a proposed merger between TorreyPines and Axonyx.

On April 4, 2006, the board of directors of Axonyx held a meeting to review the term sheet provided by TorreyPines and the non-binding proposal received from Company C. A representative from Latham & Watkins LLP reviewed with the board members their fiduciary duties in considering and evaluating the potential transactions. Representatives of Banc of America Securities reviewed the TorreyPines proposal with the Axonyx board of directors. Following a discussion of the relative strengths and weaknesses of the two proposals, the board of directors of Axonyx authorized Axonyx management to continue discussions with TorreyPines regarding the potential merger transaction.

From March 28, 2006 through April 6, 2006, Axonyx and TorreyPines, together with their respective legal counsel, continued their mutual due diligence and engaged in discussions regarding the proposed terms of the merger, including among other things the general structure of the merger, the relative ownership of the securityholders of TorreyPines and Axonyx following the merger, the issuance of warrants to purchase Axonyx common stock to holders of TorreyPines preferred stock and the composition of the board of directors of the combined company following the merger.

On April 8, 2006, representatives of Axonyx and TorreyPines met at TorreyPines' offices in La Jolla, California to further discuss the financial terms of the merger, including the relative ownership of the securityholders of TorreyPines and Axonyx following the merger.

On April 12, 2006, the board of directors of TorreyPines met to discuss the proposed terms of the merger. Representatives of Piper Jaffray reviewed with the board of directors the proposed timeline for completing the merger and proposed deal terms including among other things the general structure of the merger, the relative ownership of the securityholders of TorreyPines and Axonyx following the merger, the exchange ratio in the merger and potential adjustments to such exchange ratio, the issuance of warrants to purchase Axonyx common stock to holders of TorreyPines preferred stock and the composition of the board of directors of Axonyx following the merger. In addition, the board of directors of TorreyPines discussed a potential private equity investment by certain stockholders of TorreyPines concurrent with the proposed merger. Following the presentation, the board of directors of TorreyPines unanimously approved the management of TorreyPines and outside legal counsel to TorreyPines continuing discussions related to a potential merger with Axonyx and negotiating deal terms and definitive documentation related thereto, subject to approval of the final deal terms and definitive documentation by the board of directors.

From April 12, 2006 to June 7, 2006 TorreyPines and Axonyx, together with their respective outside legal counsel, and financial advisors, continued their mutual due diligence and engaged in negotiations regarding the merger agreement, lock-up agreements and voting agreements, including potential adjustments to the exchange ratio in the merger, net cash requirements of Axonyx, the ability for each of the parties to consummate certain out-licensing transactions during the period between signing and closing of the merger, the requirement that Axonyx change the state of its incorporation from Nevada to Delaware in connection with the merger, the requirement that Axonyx effect a reverse stock split in connection with the merger, termination rights and termination fees and representations and warranties and covenants of the parties. Final agreement on these and other issues was reached over the course of numerous discussions involving members of TorreyPines' and Axonyx's respective management and legal counsel.

On April 25, 2006, the board of directors of Axonyx met to discuss the status and proposed terms of the merger agreement and the negotiations with TorreyPines, and the continuing discussions with Company C. The board also discussed a new proposal recently received from Company B related to a potential business combination and discussed Company B's product portfolio. The board then discussed the fact that TorreyPines had requested that Axonyx enter into an exclusivity agreement pursuant to which each of Axonyx and TorreyPines would agree to continue further merger discussions only with the other and to terminate all existing merger discussions with third parties. Following discussion and evaluation, the board of directors of Axonyx concluded that the opportunities presented by the TorreyPines proposal were superior to the opportunities presented by the other proposals, and that terminating merger discussions with Company C and Company B was prudent in order to enhance Axonyx's chances of reaching a negotiated agreement with TorreyPines. The board of directors of Axonyx then approved Axonyx entering into an exclusivity agreement with TorreyPines, provided that the exclusivity agreement permit each party to continue discussions with respect to the out-licensing of its product candidates.

On April 29, 2006, Axonyx and TorreyPines entered into an exclusivity agreement pursuant to which each of Axonyx and TorreyPines agreed to continue further merger discussions only with the other and which permitted each party to continue discussions with respect to the out-licensing of its product candidates.

During the week of May 8, 2006, Axonyx engaged consultants to assist Axonyx in evaluating TorreyPines' assumptions with respect to TorreyPines' product candidates and their future financial prospects in the relevant markets.

On May 10, 2006, the board of directors of TorreyPines met to discuss the status of the merger agreement and negotiations with Axonyx. Representatives from Cooley Godward LLP, outside legal counsel to TorreyPines, provided an update regarding the merger agreement including certain issues, including adjustments to the exchange ratios for certain events, the ability for each of the parties to consummate certain out-licensing transactions during the period between signing and closing of the merger, termination rights and termination fees. In addition, the board of directors of TorreyPines discussed a potential private equity investment by certain stockholders of TorreyPines in connection with the proposed merger. The board noted that certain issues remained open for resolution and authorized the management of TorreyPines and Cooley Godward LLP to continue negotiations with Axonyx.

On May 24, 2006, the board of directors of Axonyx met to discuss the status of discussions with TorreyPines. Representatives of Banc of America Securities reviewed with the board of directors of Axonyx the preliminary financial aspects of the transaction with TorreyPines. Representatives from Latham & Watkins LLP reviewed with the board members their fiduciary duties in considering and evaluating the potential transactions and discussed the terms of the draft merger agreement and other transaction documents, noting that certain issues remained open for resolution, including the final amount of the private equity investment that certain stockholders of TorreyPines would be making in TorreyPines in connection with the proposed merger. The board of directors authorized the management of Axonyx and Latham & Watkins LLP to continue negotiations with TorreyPines.

On June 5, 2006, the board of directors of TorreyPines convened by teleconference to discuss the proposed merger with Axonyx. TorreyPines management, together with representatives of Cooley Godward LLP, summarized the terms of the merger agreement for the board of directors and discussed the resolution of the various issues discussed at the meeting of the board of directors of TorreyPines on May 10, 2006. Following this summary and discussion, the board of directors of TorreyPines, after considering the terms of the merger agreement, unanimously approved the merger, the merger agreement and the transactions contemplated by the merger agreement and recommended the adoption of the merger agreement by the stockholders of TorreyPines. In addition, the board of directors authorized the sale of shares of TorreyPines preferred stock to certain stockholders of TorreyPines.

On June 5, 2006, the board of directors of Axonyx held a meeting to discuss the proposed merger with TorreyPines. Prior to the meeting, the board of directors of Axonyx had received copies of the transaction documents and written summaries thereof. Representatives from Latham & Watkins LLP reviewed with the board members their fiduciary duties in considering and evaluating the potential transaction. Axonyx management, together with representatives from Latham & Watkins LLP, summarized the terms of the merger agreement for the board of directors, including the consideration to be paid by Axonyx, the representations and warranties to be made by the parties, the non-solicitation provisions, the management of the combined company following the merger, the treatment of stock options and warrants in the merger, employee benefits, conditions to each party's obligation to complete the merger, the termination provisions of the merger agreement and the provisions governing the payment of expenses and termination fees. The board of directors also discussed the resolution of the various issues discussed at the meeting of the board of directors of Axonyx on May 24, 2006. Representatives of Banc of America Securities reviewed with the board of directors of Axonyx Banc of America Securities' updated financial analysis of the consideration to be paid by Axonyx in the proposed merger as of that date. Representatives of Latham & Watkins LLP advised the board of directors of Axonyx that the final amount of the TorreyPines private equity investment had not yet been finalized by TorreyPines, and that the amount of this financing was necessary in order to finalize the exchange ratio for the merger transaction. The board of directors of Axonyx then adjourned the meeting.

On June 6, 2006, the board of directors of Axonyx held a meeting in which Axonyx management advised the board of directors of the status of discussions with TorreyPines. The board of directors of Axonyx then adjourned the meeting.

On June 7, 2006, the board of directors of Axonyx held a meeting to discuss the proposed merger with TorreyPines. Representatives from Latham & Watkins LLP reviewed with the board members their fiduciary duties in considering and evaluating the potential transaction. Axonyx management, together with representatives of Latham & Watkins LLP, summarized the proposed final terms of the merger agreement. Representatives of Banc of America Securities reviewed with the board of directors of Axonyx its financial analysis of the consideration to be paid by Axonyx in the merger and delivered to the board of directors of Axonyx an oral opinion, which was confirmed by delivery of a written opinion dated June 7, 2006, to the effect that, as of that date and based on and subject to various assumptions and limitations described in its opinion, the consideration provided for in the proposed merger was fair, from a financial point of view, to Axonyx. Following this summary and discussion, the board of directors of Axonyx, after considering the terms of the merger agreement, unanimously approved the merger, the merger agreement, the voting agreements and the transactions contemplated by the merger agreement and recommended the adoption of the merger agreement by the stockholders of Axonyx.

On June 7, 2006 a definitive merger agreement was signed between Axonyx and TorreyPines. In addition, certain directors, officers and stockholders of TorreyPines executed voting agreements with Axonyx and certain directors, officers and stockholders of Axonyx executed voting agreements with TorreyPines. Prior to the opening of trading markets on June 8, 2006, the parties issue a joint press release announcing the execution of the merger agreement.

On August 23, 2006, Axonyx and TorreyPines entered into an amendment to the merger agreement that increased the number of directors of the combined company from eight to ten, four of whom would be continuing directors of Axonyx and six of whom would be appointed by TorreyPines. This amendment is included with the merger agreement attached as *Annex A* to this joint proxy statement/prospectus.

Reasons for the Merger

The following discussion of the parties' reasons for the merger contains a number of forward-looking statements that reflect the current views of TorreyPines and/or Axonyx with respect to future events that may have an effect on their future financial performance. Forward-looking statements are subject to risks and uncertainties. Actual results and outcomes may differ materially from the results and outcomes discussed in the forward-looking statements. Cautionary statements that identify important factors that could cause or contribute to differences in results and outcomes included those discussed in the sections entitled "Risk Factors" and "Forward-Looking Statements" in this joint proxy statement/prospectus.

Mutual Reasons for the Merger

Axonyx and TorreyPines believe that the merger will result in a biopharmaceutical company with the following potential advantages:

Pipeline. The product candidate pipeline of the combined company will be composed of eight product candidates in various stages of development, with two product candidates for treatment of pain and six product candidates for AD. Of the two product candidates for treatment of pain, one product candidate has completed Phase IIa clinical trials and the other began a Phase I clinical trial in August 2006. Of the six candidates for AD, two product candidates are in Phase I clinical trials, and three product candidates are in preclinical development. The combined company's pipeline in AD also includes Phenserine, which is in Phase III clinical development and which the combined company may make available to third parties for licensing.

Markets. The combined company will have discovery and development capabilities across a spectrum of CNS diseases and disorders. The markets to be addressed by the clinical and preclinical stage product candidates of the combined company represent sizable and underserved or unmet medical needs. The product candidates may provide significant medical benefits for patients.

Financial Resources. The financial resources of the combined company will position it well to focus on execution with respect to its product candidate portfolio.

Management Team. The combined company will be led by experienced senior management from TorreyPines and a board of directors with representation from each of TorreyPines and Axonyx.

Axonyx's Reasons for the Merger

The Axonyx board of directors approved the merger based on a number of factors, including the following:

Expanded Pipeline. Axonyx currently has two product candidates in clinical development and one product candidate in preclinical development. The addition of the three TorreyPines product candidates currently being evaluated in clinical trials and a number of additional TorreyPines product candidates in preclinical development, broadens the product pipeline for treatments of CNS diseases and disorders.

Fairness Opinion. The board of directors considered the financial presentation of Banc of America Securities, including its opinion, dated June 7, 2006, to the board of directors of Axonyx as to the fairness, from a financial point of view and as of the date of the opinion, of the consideration provided for in the merger, as more fully described below under the caption "The Merger Opinion of Axonyx's Financial Advisor."

In addition to considering the factors outlined above, the Axonyx board of directors considered the following factors in reaching its conclusion to approve the merger and to recommend that the Axonyx stockholders approve the issuance of shares of Axonyx common stock and the merger warrants in the merger and the resulting change of control of Axonyx, all of which it viewed as supporting its decision to approve the business combination with TorreyPines:

the results of the due diligence review of TorreyPines' business and operations by Axonyx's management, legal advisors and financial advisors, which review supported Axonyx's belief that the addition of the TorreyPines product candidates would broaden Axonyx's product pipeline for the treatment of CNS diseases and disorders;

the terms and conditions of the merger agreement, including the following related factors:

the determination that the relative percentage ownership of Axonyx securityholders and TorreyPines securityholders is based on Axonyx's perceived valuations of each company at the time of the Axonyx board of directors' approval of the merger agreement;

the expectation that the merger will be treated as a reorganization for United States federal income tax purposes, with the result that in the merger Axonyx's securityholders will generally not recognize taxable gain or loss for United States federal income tax purposes;

the nature of the conditions to TorreyPines' obligation to consummate the merger and the limited risk of non-satisfaction of such conditions;

the limited number and nature of the conditions to TorreyPines' obligation to consummate the merger;

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Axonyx's rights under the merger agreement to consider certain unsolicited acquisition proposals under certain circumstances should Axonyx receive a superior proposal;

the conclusion of Axonyx's board of directors that the potential termination fee of up to \$2 million, and the circumstances when such fee may be payable, were reasonable;

the no solicitation provisions governing TorreyPines' ability to engage in negotiations with, provide any confidential information or data to, and otherwise have discussions with, any person relating to an alternative acquisition proposal;

belief that the terms of the merger agreement, including the parties' representations, warranties and covenants, and the conditions to their respective obligations, are reasonable under the circumstances; and

the ability to increase Axonyx securityholders' ownership of the combined company if Axonyx completes an out-license of any of its product candidates to specified companies;

the voting agreements entered into by stockholders of TorreyPines representing approximately 77% of the outstanding capital stock as of June 7, 2006, pursuant to which those stockholders agreed, solely in their capacity as stockholders, to vote all of their shares of TorreyPines capital stock in favor of adoption of the merger agreement, unless the TorreyPines board of directors withdraws its recommendation in favor of the merger agreement under certain permitted circumstances in light of a superior proposal, in which case the voting agreement will only apply to 33% of the outstanding TorreyPines common stock and preferred stock (voting together as a class) and 33% of the TorreyPines preferred stock (voting separately as a class);

the likelihood of retaining key TorreyPines employees to help manage the combined company;

the likelihood that the merger will be consummated on a timely basis, including the likelihood that the merger will receive all necessary regulatory approvals;

the opportunity for Axonyx's securityholders to participate in the long-term value of TorreyPines' product candidate development programs as a result of the merger;

the complementary nature of the two companies' clinical programs;

the possibility that the combined entity would be able to take advantage of the potential benefits resulting from the combination of Axonyx's public company infrastructure and TorreyPines experienced management team;

the Axonyx board of directors' consideration of strategic alternatives to the merger, including engaging in a merger transaction with another company, continuing to operate Axonyx on a stand-alone basis or undertaking a liquidation of Axonyx; and

its understanding of Axonyx's business, including its product candidates, the expenses and fixed costs associated with Axonyx's operations and Axonyx's cash position, and of TorreyPines' business, including its product candidates, TorreyPines experienced management team, TorreyPines need for financing to continue development of its product candidates, and the prospects for value creation for Axonyx stockholders in connection with the merger.

In the course of its deliberations, Axonyx's board of directors also considered a variety of risks and other countervailing factors related to entering into the merger agreement, including:

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the risk that TorreyPines may terminate the merger agreement if Axonyx's net cash balance at closing or at interim measurement dates, as calculated pursuant to the merger agreement, is less than \$38 million;

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the risk that TorreyPines may terminate the merger agreement if Axonyx completes an out-license of any of its product candidates to specified companies;

the risk that TorreyPines securityholders may increase their ownership of the combined company if TorreyPines completes an out-license of any of its product candidates to specified companies;

the \$2 million termination fee payable to TorreyPines upon the occurrence of certain events and the potential effect of such termination fee in deterring other potential acquirors from proposing an alternative transaction that may be more advantageous to Axonyx securityholders;

the risks, challenges and costs inherent in combining the operations of the two companies and the substantial expenses to be incurred in connection with the merger, including the possibility that delays or difficulties in completing the integration could adversely affect the combined company's operating results and preclude the achievement of some of the benefits anticipated from the merger;

the possible volatility, at least in the short term, of the trading price of Axonyx's common stock resulting from the merger announcement;

the risk of diverting management's attention from other strategic priorities to implement merger integration efforts;

the risk that the merger might not be consummated in a timely manner or at all and the potential adverse effect of the public announcement of the merger on Axonyx's reputation;

the risk to Axonyx's business, operations and financial results in the event that the merger is not consummated;

the strategic direction of the combined board; and

various other risks associated with the combined company and the merger, including those described in the section entitled "Risk Factors" in this joint proxy statement/prospectus.

The foregoing information and factors considered by Axonyx's board of directors are not intended to be exhaustive but are believed to include all of the material factors considered by Axonyx's board of directors. In view of the wide variety of factors considered in connection with its evaluation of the merger and the complexity of these matters, Axonyx's board of directors did not find it useful, and did not attempt, to quantify, rank or otherwise assign relative weights to these factors. In considering the factors described above, individual members of Axonyx's board of directors may have given different weight to different factors. Axonyx's board of directors conducted an overall analysis of the factors described above, including thorough discussions with, and questioning of, Axonyx's management and Axonyx's legal and financial advisors, and considered the factors overall to be favorable to, and to support, its determination.

TorreyPines' Reasons for the Merger

TorreyPines' board of directors approved the merger based on a number of factors, including the following:

the fact that Axonyx's available cash, together with TorreyPines' cash resources, are anticipated to meet TorreyPines projected operating requirements through 2007 and to enable TorreyPines to reach its projected near-term product development milestones, and that, without Axonyx's cash, TorreyPines would need to raise additional funds through private or public equity offerings, partnerships with pharmaceutical companies, project financing, debt financing or other arrangements;

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the merger with Axonyx was judged to be a more time and cost-effective means to access capital than other options considered, including an initial public offering and a private equity financing given TorreyPines' stage of development and the state of the market for initial public offerings;

the relative certainty of amount and timing of access to capital through the merger with Axonyx compared to other financing options considered;

the combination of Axonyx's status as an existing public company with a product candidate pipeline in the AD area combined with TorreyPines' product candidate pipeline in the migraine, chronic pain and AD areas;

the range of options available to the combined company to access private and public equity markets should additional capital be needed in the future will likely be greater as a public company than TorreyPines' existing options;

its understanding of TorreyPines' business including, its product candidates, TorreyPines' experienced management team, TorreyPines' need for financing to continue development of its product candidates, and the prospects for value creation for TorreyPines stockholders in connection with the merger, and of Axonyx's business, including its product candidates, the expenses and fixed costs associated with Axonyx's operations and Axonyx's cash position.

the belief that the terms of the merger agreement, including the parties' representations, warranties and covenants, and the conditions to their respective obligations, such as the condition that Axonyx have a specified amount of net cash at closing and at interim measurement dates, as calculated pursuant to the merger agreement, are reasonable under the circumstances.

In addition to considering the strategic factors outlined above, the TorreyPines board considered the following factors in reaching its conclusion to approve the merger, all of which it viewed as supporting its decision to approve the business combination with Axonyx:

Axonyx's attractiveness as a merger partner, including its:

existing capital resources, particularly in light of TorreyPines' cash needs and current cash resources;

potential access to public capital and stock liquidity; and

significant synergy between the product candidate pipelines of TorreyPines and Axonyx;

the opportunity for TorreyPines stockholders to participate in the long-term value of TorreyPines' and Axonyx's product candidate development programs through the ownership of common stock in a public company;

the aggregate value to be received by TorreyPines securityholders in the merger;

the terms and conditions of the merger agreement, including the following related factors:

the determination that the relative percentage ownership of Axonyx securityholders and TorreyPines securityholders is consistent with market practice for a merger of this type and captures the respective ownership interests of the Axonyx and TorreyPines securityholders in the combined company based on TorreyPines' perceived valuations of each company at the time of the TorreyPines board of directors' approval of the merger agreement;

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the expectation that the merger will be treated as a reorganization for United States federal income tax purposes, with the result that in the merger TorreyPines stockholders will generally not recognize taxable gain or loss for United States federal income tax purposes;

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the limited number and nature of the conditions to Axonyx's obligation to consummate the merger;

TorreyPines' rights under the merger agreement to consider certain unsolicited acquisition proposals under certain circumstances should TorreyPines receive a superior proposal; and

the conclusion of TorreyPines' board of directors that the potential termination fee of up to \$2 million, and the circumstances when such fee may be payable, were reasonable;

the fact that shares of Axonyx common stock issued to TorreyPines stockholders will be registered on Form S-4 and will be freely tradable for TorreyPines stockholders who are not affiliates of TorreyPines and who are not parties to lock-up agreements;

the likelihood that the merger will be consummated on a timely basis, including the likelihood that the merger will receive all necessary regulatory approvals; and

the major risks and uncertainties of financing alternatives to the merger.

In the course of its deliberations, TorreyPines' board of directors also considered a variety of risks and other countervailing factors related to entering into the merger agreement, including the following:

the possibility that the merger might not be completed and the potential adverse effect of the public announcement of the merger on the reputation of TorreyPines and TorreyPines' ability to obtain financing in the future in the event the merger is not completed;

the termination fee of up to \$2 million payable to Axonyx upon the occurrence of certain events, and the potential effect of such termination fee in deterring other potential acquirers from proposing an alternative transaction that may be more advantageous to TorreyPines stockholders;

the risk of diverting management's attention from other strategic priorities to implement the merger and integrate each company's operations and infrastructure following the merger;

the risk that the merger might not be consummated in a timely manner or at all;

the challenges and costs of combining each company's operations and the substantial expenses to be incurred in connection with the merger, including the risks that delays or difficulties in completing integration activities and such other expenses, as well as the additional public company expenses and obligations that TorreyPines will be subject to in the merger that it has not previously been subject to, could adversely affect the combined company's operating results and preclude the achievement of some benefits anticipated from the merger; and

various other applicable risks associated with the combined company and the merger, including the risks associated with obtaining a positive Axonyx shareholder vote and including those described in the section entitled "Risk Factors" in this joint proxy statement/prospectus.

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The foregoing information and factors considered by TorreyPines' board of directors are not intended to be exhaustive but are believed to include all of the material factors considered by TorreyPines' board of directors. In view of the wide variety of factors considered in connection with its evaluation of the merger and the complexity of these matters, the TorreyPines board of directors did not find it useful, and did not attempt, to quantify, rank or otherwise assign relative weights to these factors. In considering the factors described above, individual members of the TorreyPines board of directors may have given different weight to different factors. The TorreyPines board of directors conducted an overall analysis of the factors described above, including thorough discussions with, and questioning of, TorreyPines' management and TorreyPines' legal and financial advisors, and considered the factors overall to be favorable to, and to support, its determination.

Opinion of Axonyx's Financial Advisor

The board of directors of Axonyx retained Banc of America Securities as its financial advisor in connection with a potential transaction. Banc of America Securities is an internationally recognized investment banking firm which is regularly engaged in the valuation of businesses and securities in connection with mergers and acquisitions, negotiated underwritings, secondary distributions of listed and unlisted securities, private placements and valuations for corporate and other purposes. The board of directors of Axonyx selected Banc of America Securities on the basis of Banc of America Securities' experience in transactions similar to the merger, its reputation in the healthcare industry and investment community and its familiarity with Axonyx and its business.

On June 7, 2006, at a meeting of the board of directors of Axonyx held to evaluate the proposed merger, Banc of America Securities delivered to the board of directors of Axonyx an oral opinion, which was confirmed by delivery of a written opinion dated June 7, 2006, to the effect that, as of the date of the opinion and based on and subject to various assumptions and limitations described in its opinion, the consideration provided for in the proposed merger was fair, from a financial point of view, to Axonyx.

The full text of Banc of America Securities' written opinion to the board of directors of Axonyx, which describes, among other things, the assumptions made, procedures followed, factors considered and limitations on the review undertaken, is attached as *Annex B* to this joint proxy statement/prospectus and is incorporated by reference in its entirety into this joint proxy statement/prospectus. Holders of Axonyx common stock are encouraged to read the opinion carefully in its entirety. The following summary of Banc of America Securities' opinion is qualified in its entirety by reference to the full text of the opinion.

Banc of America Securities delivered its opinion to the board of directors of Axonyx for the benefit and use of the board of directors in connection with and for purposes of its evaluation of the consideration provided for in the merger. It does not constitute a recommendation to you on how to vote or act in connection with the merger.

For purposes of its opinion, Banc of America Securities:

reviewed certain publicly available financial statements of Axonyx and other publicly available business and financial information of Axonyx and TorreyPines, respectively;

reviewed certain internal financial statements and other internal financial and operating data concerning Axonyx and TorreyPines, respectively;

discussed the past and current operations, financial condition and prospects of Axonyx and TorreyPines with senior executives of Axonyx and TorreyPines;

reviewed certain financial forecasts relating to Axonyx prepared by the management of Axonyx, referred to as the Axonyx forecasts, and certain financial forecasts relating to TorreyPines prepared by the management of Axonyx and based on assumptions, data and guidance provided by the managements of TorreyPines and Axonyx, referred to as the TorreyPines forecasts;

reviewed and discussed with Axonyx and its tax advisors certain net operating losses of Axonyx and TorreyPines, referred to as NOLs, the benefits of which are anticipated by Axonyx to be available to Axonyx and TorreyPines;

reviewed the reported prices and trading activity for Axonyx common stock;

compared the future financial performance of Axonyx and the prices and trading activity of Axonyx common stock with that of certain other publicly traded companies Banc of America Securities deemed relevant and compared the financial performance of TorreyPines with that of certain publicly traded companies Banc of America Securities deemed relevant;

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reviewed the relative financial contributions of Axonyx and TorreyPines to the future financial performance of the combined company on a pro forma basis following consummation of the transaction;

participated in discussions and negotiations among representatives of Axonyx, TorreyPines and their respective advisors;

considered the results of the efforts of Axonyx and Banc of America Securities, at the direction of the board of directors of Axonyx, to solicit indications of interest from third parties with respect to a possible transaction with Axonyx;

reviewed with Axonyx a report relating to the revenue potential for oral migraine products in TorreyPines' pipeline prepared for Axonyx by a third party consultant and a report relating to NGX-424 SC, the subcutaneous migraine product in TorreyPines' pipeline, prepared for TorreyPines by another third party consultant, which are together referred to as the consultants' reports;

reviewed the merger agreement;

reviewed the terms of the warrant;

reviewed the financing agreement; and

performed such other analyses and considered such other factors as Banc of America Securities deemed appropriate.

Banc of America Securities assumed and relied upon, without independent verification, the accuracy and completeness of the financial and other information reviewed by them for the purposes of its opinion. With respect to the Axonyx forecasts prepared by the management of Axonyx, Banc of America Securities assumed, at Axonyx's direction, that such forecasts had been reasonably prepared on bases reflecting the best currently available estimates and good faith judgments of the management of Axonyx as to the future financial performance of Axonyx. Axonyx advised Banc of America Securities that the management of TorreyPines had not prepared financial forecasts related to TorreyPines. Accordingly, upon TorreyPines' advice and at Axonyx's direction, Banc of America Securities assumed that the TorreyPines forecasts had been reasonably prepared on bases reflecting the best currently available estimates and good faith judgments of the managements of Axonyx and TorreyPines as to the future financial performance of TorreyPines. In addition, Banc of America Securities relied, at Axonyx's direction, upon the assessments of Axonyx and TorreyPines as to the products and product candidates of each of Axonyx and TorreyPines and as to the risks (including the probability of successful testing, development, approval by appropriate governmental authorities and launch) associated with such products and product candidates. Banc of America Securities also relied, at Axonyx's direction, on the assessments of Axonyx as to Axonyx's and TorreyPines' ability to utilize the NOLs and Banc of America Securities assumed, at Axonyx's direction, that such NOLs will be utilized in the amounts and at the times projected by Axonyx.

Banc of America Securities did not make any independent appraisal or valuations of the assets or liabilities of Axonyx or TorreyPines, nor had Banc of America Securities been furnished with any such appraisals or valuations (other than the consultants' reports, which Banc of America Securities reviewed and relied upon without independent verification for purposes of this opinion). With respect to the consultants' reports, Banc of America Securities assumed, at the direction of Axonyx, that each consultant report was reasonably prepared on bases reflecting the best currently available estimates and good faith judgments of the third party consultant that prepared such report as to the subject matter contained therein. For purposes of its opinion, Banc of America Securities assumed, at Axonyx's direction, that neither Axonyx or TorreyPines will complete an Axonyx permitted out-license or a TorreyPines permitted out-license, respectively, and accordingly, no adjustment will be made to the

exchange ratio with respect thereto. Banc of America Securities further assumed, with the consent of Axonyx, that the merger will qualify for federal income tax purposes as a reorganization under the provisions of Section 368(a) of the Internal Revenue Code of 1986, as amended, referred to herein as the Code, and that the merger and related transactions will be consummated as provided in or contemplated by the merger agreement, with full satisfaction of all covenants and conditions set forth in the merger agreement and without any waivers thereof. Banc of America Securities further assumed, with the consent of Axonyx, that all governmental, regulatory or other consents and approvals necessary for the consummation of the merger will be obtained without any adverse effect on Axonyx, TorreyPines or the merger.

Banc of America Securities expressed no view or opinion as to any terms or aspects of the merger (including, without limitation, the form or structure of the merger or the effect of any adjustment to the exchange ratio should Axonyx or TorreyPines complete an Axonyx permitted out-license or a TorreyPines permitted out-license, respectively, on or prior to five business days before the annual meeting of Axonyx stockholders) other than the consideration to the extent expressly specified in its opinion, and Banc of America Securities expressed no view or opinion as to any related transactions (including, without limitation, the reincorporation and the reverse stock split). In addition, no opinion was expressed as to the relative merits of the transaction in comparison to other transactions available to Axonyx or in which Axonyx might engage or as to whether any transaction might be more favorable to Axonyx as an alternative to the transaction, nor did Banc of America Securities express any opinion as to the underlying business decision of the board of directors of Axonyx to proceed with or effect, the transaction. The opinion does not in any manner address the prices at which Axonyx common stock may trade at any time.

Banc of America Securities' opinion was necessarily based on economic, market and other conditions as in effect on, and the information made available to Banc of America Securities as of, the date of its opinion. Accordingly, although subsequent developments may affect its opinion, Banc of America Securities did not assume any obligation to update, revise or reaffirm its opinion.

The following represents a brief summary of the material financial analyses presented by Banc of America Securities to the board of directors of Axonyx in connection with its opinion. **The financial analyses summarized below include information presented in tabular format. In order to fully understand the financial analyses performed by Banc of America Securities, the tables must be read together with the text of each summary. The tables alone do not constitute a complete description of the financial analyses performed by Banc of America Securities. Considering the data in the tables below without considering the full narrative description of the financial analyses, including the methodologies and assumptions underlying the analyses, could create a misleading or incomplete view of the financial analyses performed by Banc of America Securities.**

Implied Equity Ownership Percentage Split

Based on the terms of the merger agreement, and assumptions, data and guidance from management of Axonyx and TorreyPines, Banc of America Securities calculated the equity value of Axonyx, implied equity value of TorreyPines and the resulting implied equity ownership percentage in the combined company of stockholders of Axonyx and TorreyPines resulting from the merger. Banc of Americas Securities determined an equity value of Axonyx of \$50.7 million by calculating the product of the number of Axonyx shares of common stock on a fully-diluted basis and the Axonyx common stock price of \$0.942, which was the average price of Axonyx common stock for the period of five business days prior to two days before June 7, 2006, the date of the merger agreement. Banc of America Securities compared the equity value of Axonyx with the implied equity value reference ranges derived from Banc of America Securities' analyses, described in this joint proxy statement/prospectus beginning on page 84. Banc of America Securities then calculated an implied equity value of TorreyPines of \$70.9 million based on the Axonyx common stock price of \$0.942 per share, the

proposed equity ownership percentage split to result from the merger of 58.3% to 41.7% in favor of TorreyPines shareholders, and the fact that in the merger, holders of shares of TorreyPines common and preferred stock would receive 1.299 shares of Axonyx common stock for each share of TorreyPines common or preferred stock held (prior to any adjustment of the exchange ratio as provided for in the merger agreement). Banc of America Securities compared the implied equity value of TorreyPines with the implied equity value reference ranges derived from Banc of America Securities' analyses, described in this joint proxy statement/prospectus beginning on page 87.

In addition, Banc of America Securities calculated an adjusted implied equity value of TorreyPines of \$73.2 million based on the fact that holders of shares of TorreyPines preferred stock will be granted a number of warrants to purchase 12,000,000 shares of Axonyx common stock, in the aggregate, at a price of \$1.04 per share of Axonyx common stock, subject to adjustment as provided by the terms of each warrant. All share information was based on data furnished by the managements of Axonyx and TorreyPines. Banc of America Securities calculated the net value of the warrants to be \$2.29 million using a Black-Scholes model. Banc of America Securities compared the adjusted implied equity value of TorreyPines with the implied equity value reference ranges derived from Banc of America Securities' analyses, described in this joint proxy statement/prospectus beginning on page 87.

As more fully described in the merger agreement, the exchange ratio of 1.299 assumed that, pursuant to the Series C-2 Participating Preferred Stock Purchase Agreement, referred to as the financing agreement, dated June 7, 2006, by and among TorreyPines and certain existing stockholders of TorreyPines, there was an investment by such stockholders of \$6,364,269 million, in the aggregate, in TorreyPines Series C-2 preferred stock, referred to herein as the TorreyPines preferred stock financing, on or prior to five business days before the annual meeting of Axonyx stockholders, which TorreyPines preferred stock financing was consummated on June 22, 2006. The aggregate consideration to be received by holders of shares of TorreyPines common stock and TorreyPines preferred stock pursuant to the exchange ratio, as it may be adjusted, as applicable, and holders of shares of TorreyPines preferred stock pursuant to the warrants, is hereinafter referred to as the consideration.

Based upon the consideration to be received in the merger, Banc of America Securities calculated the equity value of Axonyx, the implied equity value of TorreyPines, the adjusted implied equity value of TorreyPines and implied equity ownership percentage split in the combined company resulting from the merger:

Implied Ownership by Stockholders of:	Without warrants	Adjusted for net value of warrants
Axonyx	41.7%	40.9%
TorreyPines	58.3%	59.1%
Exchange Ratio	1.299	1.342

Axonyx Financial Analysis

Selected Publicly Traded Company Analysis. Banc of America Securities reviewed certain publicly available financial information relating to Axonyx and the following fifteen selected publicly traded companies:

Advancis Pharmaceutical Corporation

Avalon Pharmaceuticals, Inc.

Corautus Genetics Inc.

EntreMed, Inc.

Inhibitex, Inc.

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Iomai Corporation

La Jolla Pharmaceutical Company

Medivation, Inc.

Manhattan Pharmaceuticals, Inc.

Pharmos Corporation

Praecis Pharmaceuticals Incorporated

Prana Biotechnology Limited

Repros Therapeutics Inc.

Tapestry Pharmaceuticals, Inc.

Threshold Pharmaceuticals, Inc.

Banc of America Securities reviewed the technology value for each selected company, which value is the difference between each selected company's fully-diluted market cap as of June 6, 2006 and the net cash for each selected company. The number of shares outstanding and the net cash for each selected company was as of the last reported quarter for each selected company and pro forma for subsequent equity financings, to the extent applicable to each such selected company. Banc of America Securities then compared the implied equity value of Axonyx by adding Axonyx's cash balance of approximately \$49.5 million as of June 30, 2006, as provided by management of Axonyx, to the range of selected technology values for the selected companies, and then compared the resulting implied equity value of Axonyx to the fully-diluted market capitalization of Axonyx based on an a stock price of Axonyx common stock of \$0.942 per share, which was the average stock price for Axonyx common stock for the period of five business days prior to two days before the date of the merger agreement. The analysis indicated the following implied equity value reference range, as compared to the fully-diluted market capitalization of Axonyx:

Axonyx Market Capitalization	Implied Equity Value Reference Range
\$ 50.7 million	\$70 to \$100 million

No company used in this analysis is identical to Axonyx or its business. Accordingly, an evaluation of the results of this analysis is not entirely mathematical. Rather, this analysis involves complex considerations and judgments concerning differences in financial and operating characteristics and other factors that could affect the public trading or other values of the companies to which Axonyx was compared.

Discounted Forward Price/Earnings Multiple Analysis. Banc of America Securities performed a discounted forward price/earnings multiple, referred to herein as P/E multiple, analysis to derive the implied current equity value of Axonyx based on the projected net income of Axonyx for the calendar years of 2013 and 2014 based on the Axonyx forecasts. In this analysis, Banc of America Securities reviewed the P/E multiples for the following profitable biotech companies as of June 6, 2006:

Amgen Inc.

Biogen Idec Inc.

Celgene Corporation

Cephalon, Inc.

Genentech, Inc.

Genzyme Corporation

Gilead Sciences Inc.

ImClone Systems Incorporated

MedImmune, Inc.

Sepracor Inc.

Serono S.A.

Banc of America Securities reviewed P/E multiples for the selected companies and derived a mean P/E multiple of 23.9x and a median P/E multiple of 21.8x. Banc of America Securities then calculated the hypothetical future equity value of Axonyx in each of calendar years 2013 and 2014 by applying selected P/E multiple ranges to the net income of Axonyx for the calendar years of 2013 and 2014 based on net income of Axonyx calculated using pre-tax earnings estimates and applying an assumed tax rate of 38%. Banc of America Securities then calculated the implied current equity value of Axonyx for each of calendar year 2013 and 2014 by discounting back to the present at a discount rate of 22%. Banc of America Securities then compared the implied current equity value of Axonyx for each of calendar year 2013 and 2014 to the fully-diluted market capitalization of Axonyx based on a stock price of Axonyx common stock of \$0.942 per share, which was the average stock price for Axonyx common stock for the period of five business days prior to two days before the date of the merger agreement. Estimated financial data for Axonyx were provided by the Axonyx forecasts. Financial data for the selected companies were based on publicly available information. The analysis indicated the following implied equity value reference range, as compared to the fully-diluted market capitalization of Axonyx:

Axonyx Market Capitalization	Implied Equity Value Reference Range	
	2013 Net Income (\$18.1 million)	2014 Net Income (\$31.9 million)
\$ 50.7 million	\$90 to \$113 million	\$130 to \$163 million

No company used in this analysis is identical to Axonyx or its business. Accordingly, an evaluation of the results of this analysis is not entirely mathematical. Rather, this analysis involves complex considerations and judgments concerning differences in financial and operating characteristics and other factors that could affect the public trading or other values of the companies to which Axonyx was compared.

Discounted Cash Flow Analysis. Banc of America Securities performed a discounted cash flow analysis of Axonyx to calculate the estimated present value, as of June 30, 2006, of the implied equity value plus the value of any Axonyx's NOLs, in light of the standalone unlevered, after-tax free cash flows that Axonyx could generate through the fiscal year 2026. In this analysis, Banc of America Securities calculated a range of estimated terminal values, which are estimates of the future value of Axonyx's business at the end of fiscal year 2025, by applying a range of perpetuity growth rates ranging from 0.0% to 2.0%. The enterprise values of Axonyx, which is a measure of equity value plus total debt minus excess cash and cash equivalents, each as of June 30, 2006, were then calculated based on the present value of the terminal value and free cash flows using discount rates ranging from 20.0% to 24.0%. Corresponding equity values were calculated by adding cash on hand at Axonyx as of June 30, 2006 and subtracting total debt, whereupon the net present value of Axonyx's NOLs were added to calculate the implied equity value of Axonyx. Historical financial data for Axonyx was provided by the management of Axonyx and estimated financial data, including the value and availability of NOLs, for

Axonix were provided by the Axonix forecasts. The analysis indicated the following implied equity value reference range, as compared to the fully-diluted market capitalization of Axonix:

	<u>Axonix Market Capitalization</u>	<u>Implied Equity Value Reference Range</u>
TorreyPines Financial Analysis	\$ 50.7 million	\$67 to \$81 million

Selected Publicly Traded Company Analysis. Banc of America Securities reviewed certain publicly available financial information relating to TorreyPines and the following seven selected publicly traded companies:

Arqule, Inc.

Idera Pharmaceuticals, Inc.

Kosan Biosciences Incorporated

Neurogen Corporation

Sangamo BioSciences, Inc.

Sgx Pharmaceuticals, Inc.

Sunesis Pharmaceuticals, Inc.

Banc of America Securities reviewed the technology value for each selected company, which value is the difference between each selected company's fully-diluted market cap as of June 6, 2006 and the net cash for each selected company. The number of shares outstanding and the net cash for each selected company was as of the last reported quarter for each selected company and pro forma for subsequent equity financings, to the extent applicable to each such selected company. Banc of America Securities then compared the range of selected technology values for the selected companies with the implied value of TorreyPines based on the exchange ratio provided for in the merger as well as the adjusted implied equity value of TorreyPines giving effect to the value of the warrants, applying a 20% private company discount to the value of TorreyPines. Financial information for TorreyPines was based on publicly available sources as well as the TorreyPines forecasts, including as assumption provided by TorreyPines management of an amount of net cash equal to \$27 million as of June 30, 2006, which assumed that the TorreyPines preferred stock financing was consummated. This analysis indicated the following implied equity value reference range, as compared to the implied equity value and adjusted implied equity value for TorreyPines:

<u>Implied Equity Value for TorreyPines</u>	<u>Adjusted Implied Equity Value for TorreyPines</u>	<u>Implied Equity Value Reference Range</u>
\$ 70.9 million	\$73.2 million	\$86 to \$102 million

No company used in this analysis is identical to TorreyPines or its business. Accordingly, an evaluation of the results of this analysis is not entirely mathematical. Rather, this analysis involves complex considerations and judgments concerning differences in financial and operating characteristics and other factors that could affect the public trading or other values of the companies to which TorreyPines was compared.

Discounted Forward Price/Earnings Multiple Analysis. Banc of America Securities performed a discounted forward P/E multiple analysis to derive the implied current equity value of TorreyPines based on the projected net income of TorreyPines for the calendar years of 2013 and 2014 based on the

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TorreyPines forecasts. In this analysis, Banc of America Securities reviewed the P/E multiples for the following profitable biotech companies as of June 6, 2006:

Amgen Inc.

Biogen Idec Inc.

Celgene Corporation

Cephalon, Inc.

Genentech, Inc.

Genzyme Corporation

Gilead Sciences Inc.

ImClone Systems Incorporated

MedImmune, Inc.

Sepracor Inc.

Serono S.A.

Banc of America Securities reviewed P/E multiples for the selected companies and derived a mean P/E multiple of 23.9x and a median P/E multiple of 21.8x. Banc of America Securities then calculated the hypothetical future equity value of TorreyPines in each of calendar years 2013 and 2014 by applying selected P/E multiple ranges to the net income of TorreyPines for the calendar years of 2013 and 2014 based on net income of TorreyPines calculated using pre-tax earnings estimates and applying an assumed tax rate of 38%. Banc of America Securities then calculated the implied public market equity value for TorreyPines for each of calendar year 2013 and 2014 by discounting back to the present at a discount rate of 22%. Banc of America Securities then calculated the implied current equity value of TorreyPines in each of calendar years 2013 and 2014 by deducting an estimate of required future equity financing based on a cash burn of \$101.8 million from 2006 through 2011 until the first year of positive cash flow in 2012, less cash on hand of \$27 million as of June 30, 2006, all as per the TorreyPines forecasts and assuming that the TorreyPines preferred stock financing was consummated, and applying a private company discount of 20%. Historical financial data for TorreyPines was provided by the management of TorreyPines and estimated financial data for TorreyPines were provided by the TorreyPines forecasts. Financial data for the selected companies were based on publicly available information. This analysis indicated the following implied equity value reference range, as compared to the implied equity value and adjusted implied equity value for TorreyPines:

Implied Equity Value for TorreyPines	Adjusted Implied Equity Value for TorreyPines	Implied Equity Value Reference Range	
		2013 Net Income (\$41 million)	2014 Net Income (\$71.5 million)
\$ 70.9 million	\$73.2 million	\$103 to \$144 million	\$173 to \$231 million

No company used in this analysis is identical to TorreyPines or its business. Accordingly, an evaluation of the results of this analysis is not entirely mathematical. Rather, this analysis involves complex considerations and judgments concerning differences in financial and operating

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characteristics and other factors that could affect the public trading or other values of the companies to which TorreyPines was compared.

Discounted Cash Flow Analysis. Banc of America Securities performed a discounted cash flow analysis of TorreyPines to calculate the estimated present value, as of June 30, 2006, of the implied

equity value, plus the value of any TorreyPines NOLs, in light of the standalone unlevered, after-tax free cash flows that TorreyPines could generate through fiscal year 2025. In this analysis, Banc of America Securities calculated a range of estimated terminal values, which are estimates of the future value of TorreyPines' business at the end of fiscal year 2025, by applying a range of perpetuity growth rates ranging from 0.0% to 2.0%. The enterprise values of TorreyPines, which is a measure of equity value plus total debt minus excess cash and cash equivalents, were then calculated based on the present value of the terminal value and free cash flows using discount rates ranging from 20.0% to 24.0%. Corresponding equity values were calculated by adding cash on hand as of June 30, 2006 and subtracting total debt as of June 30, 2006, whereupon the net present value of TorreyPines' NOLs were added to calculate the implied equity value of TorreyPines. Historical financial data for TorreyPines was provided by the management of TorreyPines and estimated financial data, including the value and availability of NOLs, for TorreyPines were provided by the TorreyPines forecasts. This analysis indicated the following implied equity value reference range, as compared to the implied equity value and adjusted implied equity value for TorreyPines:

Implied Equity Value for TorreyPines	Adjusted Implied Equity Value for TorreyPines	Implied Equity Value Reference Range
\$ 70.9 million	\$73.2 million	\$67 to \$105 million

Relative Financial Analysis

Net Income Contribution Analysis. Banc of America Securities performed a contribution analysis in order to evaluate the percentage contribution of each of Axonyx and TorreyPines to the combined company based on projected net income for each of Axonyx and TorreyPines for the years 2013 through 2015. Projected net income of Axonyx was provided by the Axonyx forecasts and projected net income of TorreyPines was provided by the TorreyPines forecasts. The resulting relative percentage contribution based on projected net income for each of Axonyx and TorreyPines is set forth below, as compared with the adjusted implied equity ownership of TorreyPines in the combined company resulting from the merger of 58.3% and 59.1% as adjusted by the net value of the warrants:

Year	Projected Net Income of Axonyx	Projected Net Income of TorreyPines	Axonyx Net Income Contribution to Combined Company	TorreyPines Net Income Contribution to Combined Company
2013P	\$ 18.1	\$ 41.0	30.7%	69.3%
2014P	31.9	71.5	30.9	69.1
2015P	36.9	101.9	26.6	73.4

Implied Ownership Analysis. Based on the implied valuations for each of Axonyx and TorreyPines derived in the analyses described above, Banc of America Securities calculated an implied equity ownership valuation range for TorreyPines in the combined company and compared it with the implied equity ownership of TorreyPines in the combined company resulting from the merger. The implied equity ownership percentage of TorreyPines in the combined company of 58.3% and 59.1%, as adjusted by the net value of the warrants, was compared with the TorreyPines implied equity ownership valuation range derived from the above analyses set forth below:

	TorreyPines Implied Equity Ownership Valuation Range
Selected Publicly Traded Companies Analysis	46.2%-59.4%
Discounted Forward P/E Multiple Analysis	
2013P Net Income	47.8-61.5
2014P Net Income	51.6-64.0
Discounted Cash Flow Analysis	45.2-60.9

Other Factors

In rendering its opinion, Banc of America Securities also reviewed and considered other factors, including:

the historical trading prices and trading volumes of Axonyx common stock during the 12-month period ended June 6, 2006;
and

the effects of any possible adjustment to the exchange ratio should the TorreyPines preferred stock financing have been consummated in an amount less than \$6,364,269, or not consummated at all.

Miscellaneous

As noted above, the discussion set forth above is merely a summary of the material financial analyses presented by Banc of America Securities to the board of directors of Axonyx in connection with its opinion and is not a comprehensive description of all analyses undertaken by Banc of America Securities in connection with its opinion. The preparation of a financial opinion is a complex analytical process involving various determinations as to the most appropriate and relevant methods of financial analysis and the application of those methods to the particular circumstances and, therefore, a financial opinion is not readily susceptible to partial analysis or summary description. Banc of America Securities believes that its analyses and the summary above must be considered as a whole. Banc of America Securities further believes that selecting portions of its analyses and the factors considered or focusing on information presented in tabular format, without considering all analyses and factors or the narrative description of the analyses, could create a misleading or incomplete view of the processes underlying Banc of America Securities' analyses and opinion. Banc of America Securities did not assign any specific weight to any of the analyses described above. The fact that any specific analysis has been referred to in the summary above is not meant to indicate that such analysis was given greater weight than any other analysis.

In performing its analyses, Banc of America Securities considered industry performance, general business and economic conditions and other matters, many of which are beyond the control of Axonyx and TorreyPines. The estimates of the future performance of Axonyx provided by the management of Axonyx in or underlying Banc of America Securities' analyses, including, but not limited to, the Axonyx forecasts, and the estimates of the future performance of TorreyPines provided by the management of Axonyx, based on assumptions, data and guidance provided by the managements of TorreyPines and Axonyx, in or underlying Banc of America Securities' analyses, including, but not limited to, the TorreyPines forecasts, are not necessarily indicative of actual values or actual future results, which may be significantly more or less favorable than those estimates or those suggested by Banc of America Securities' analyses. These analyses were prepared solely as part of Banc of America Securities' analysis of the financial fairness of the consideration provided for in the merger and were provided to the board of directors of Axonyx in connection with the delivery of Banc of America Securities' opinion. The analyses do not purport to be appraisals or to reflect the prices at which a company might actually be sold or the prices at which any securities have traded or may trade at any time in the future. Accordingly, the estimates used in, and the ranges of valuations resulting from, any particular analysis described above are inherently subject to substantial uncertainty and should not be taken to be Banc of America Securities' view of the actual value of Axonyx or TorreyPines.

The consideration provided for in the merger was determined through negotiations between Axonyx and TorreyPines and was approved by the board of directors of Axonyx. The decision of Axonyx to enter into the merger agreement was solely that of the board of directors of Axonyx. As described above, Banc of America Securities' opinion and analyses were only one of many factors considered by the board of directors of Axonyx in making its determination to recommend the merger

agreement and should not be viewed as determinative of the views of the board of directors of Axonyx or Axonyx management with respect to the merger or the consideration to be paid therein.

Banc of America Securities has acted as financial advisor to the board of directors of Axonyx in connection with the merger, for which services Banc of America Securities will receive a fee of \$1.5 million, contingent and payable upon and concurrently with the consummation of the merger. Axonyx also has agreed to reimburse Banc of America Securities for all reasonable expenses, including reasonable fees and disbursements of Banc of America Securities' counsel, incurred in connection with Banc of America Securities' engagement, and to indemnify Banc of America Securities, any controlling person of Banc of America Securities and each of their respective directors, officers, employees, agents, affiliates and representatives against specified liabilities, including liabilities under the federal securities laws.

Banc of America Securities has provided financial advisory services to Axonyx in connection with its adoption of a shareholders' rights plan and Banc of America Securities or its affiliates may in the future provide financial advisory and financing services to Axonyx, for which services Banc of America Securities has received and in the future would expect to receive, compensation. In the ordinary course of its businesses, Banc of America Securities and its affiliates may actively trade or hold the debt and equity securities or loans of Axonyx and TorreyPines for its own account or for the accounts of customers, and accordingly, Banc of America Securities or its affiliates may at any time hold long or short positions in such securities or loans.

Interests of Axonyx's Directors and Executive Officers in the Merger

In considering the recommendation of the Axonyx board of directors with respect to issuing shares of Axonyx common stock and the merger warrants as contemplated by the merger agreement and the other matters to be acted upon by Axonyx's stockholders at the Axonyx annual meeting, Axonyx's stockholders should be aware that certain members of the board of directors and executive officers of Axonyx have interests in the merger that may be different from, or in addition to, the interests of Axonyx's stockholders. These interests relate to or arise from, among other things:

certain benefits to which Gosse B. Bruinsma, M.D. is entitled due to the non-renewal of his employment agreement in connection with the merger;

severance benefits to which each of Gosse B. Bruinsma, M.D., S. Colin Neill and Paul Feuerman would become entitled in the event of his qualifying termination of employment within a specified period of time before or after the merger; and

the accelerated vesting of stock options to purchase approximately 1,110,625 shares of Axonyx common stock held by Axonyx's executive officers and board members in connection with the consummation of the merger;

the possibility the certain Axonyx directors will continue to serve on the board of directors of the combined company following the consummation of the merger.

Each of Axonyx's and TorreyPines' board of directors was aware of these potential conflicts of interest and considered them, among other matters, in reaching their respective decisions to approve the merger agreement and the merger, and, in the case of each board, to recommend that their respective stockholders approve the Axonyx and TorreyPines proposals, as applicable, contemplated by this joint proxy statement/prospectus to be presented to their stockholders for consideration at their respective stockholder meetings.

Ownership Interests

As of August 23, 2006, all directors and executive officers of Axonyx, together with their affiliates, beneficially owned approximately 8.9% of the shares of Axonyx common stock. The affirmative vote of the holders of a majority of the Axonyx common stock having voting power present in person or represented by proxy at the Axonyx annual meeting is required for approval of Axonyx Proposal Nos. 1, 5 and 7. The affirmative vote of holders of a majority of the Axonyx common stock having voting power outstanding on the record date for the Axonyx annual meeting is required for approval of Axonyx Proposal Nos. 2, 3 and 4. Certain Axonyx officers and directors, and their affiliates, have also entered into voting agreements in connection with the merger. For a more detailed discussion of the voting agreements see the section entitled "Agreements Related to the Merger Voting Agreements" in this joint proxy statement/prospectus.

Employment Agreement of Gosse B. Bruinsma, M.D.

Shortly following the execution of the merger agreement and in anticipation of the merger, Axonyx elected not to renew the employment agreement of Gosse B. Bruinsma, M.D., its President and Chief Executive Officer. Consequently, pursuant to the terms of his amended employment agreement, Dr. Bruinsma is entitled to receive certain benefits, regardless of whether or not the merger occurs. Specifically, the employment agreement provides that Dr. Bruinsma is entitled to receive continued salary and benefits with undiminished terms and conditions for six months following the expiration of his employment agreement, or through March 21, 2007.

Change of Control Agreements

In March 2004, Axonyx entered into change of control agreements with Gosse B. Bruinsma, M.D., its President and Chief Executive Officer, and S. Colin Neill, its Chief Financial Officer. In September 2005, Axonyx entered into a change of control agreement with Paul Feuerman, its General Counsel. Under these agreements, as amended, each executive will be entitled to certain severance benefits if his employment is terminated under either of the following circumstances:

the executive's employment is terminated by Axonyx without cause (as described below) at any time during the period from 90 days prior to the commencement or public announcement of a change of control, such as the merger, until one year after a change of control; or

the executive's employment is terminated by the executive for good reason (as described below) at any time during the one-year period immediately following the occurrence of a change of control.

For purposes of these agreements, "cause" is generally defined to mean: (a) the executive's willful failure to perform the duties of his employment (other than as a result of the executive's incapacity due to physical or mental illness) for at least 10 days after a demand for substantial performance, (b) the executive's engaging in negligent or willful misconduct in carrying out the duties of his or her employment or conduct injurious to Axonyx or any of its affiliates, (c) the executive's conviction of, or entering a plea of guilty, nolo contendere (or similar plea) to a crime that constitutes a felony or any crime of moral turpitude, (d) the executive's directly or indirectly selling, passing on or otherwise using or disclosing without permission any confidential information of Axonyx; or (e) the executive's direct or indirect participation in business activities in competition with Axonyx.

For purposes of these agreements, "good reason" is generally defined to mean: (a) a material diminution in the nature of the executive's authority, duties, responsibilities or status, from those in effect immediately prior to the change of control, (b) the required relocation of the executive's place of employment to a location in excess of thirty miles from his or her place of employment at the time of his termination, or (c) any substantial reduction by Axonyx in the executive's base salary, bonus

opportunities, profit sharing opportunities, or other incentive opportunities from those in effect immediately prior to the change of control.

In the event of an executive's qualifying termination of employment, the executive will be entitled to receive the following:

a lump sum cash payment equal to the sum of (a) 200% of the executive's highest annual base salary in effect during the one year period immediately preceding his resignation or termination, plus (b) 40% of the executive's base salary at the time of termination or resignation in the case of Dr. Bruinsma and 30% of the executive's base salary at the time of termination or resignation in the case of Messrs. Neill and Feuerman;

the right to continue participation for a one-year period in any group health plan sponsored by Axonyx in which the executive was participating on the date of his termination or resignation, at a cost to the executive equal to the amount charged by Axonyx to its then-current employees; and

the immediate accelerated vesting of all unvested options held by the executive and the lapse of all post-termination exercise period restrictions applicable to the executive's outstanding options, such that all of the executive's options shall become fully vested and shall remain outstanding and exercisable until their respective expiration dates.

Stockholder approval of the merger will constitute a "change of control" for purposes of these agreements. Set forth below is an estimate of the value of the severance benefits that would become payable to Dr. Bruinsma and Messrs. Neill and Feuerman under the change of control agreements, assuming a qualifying termination of each individual's employment as of August 23, 2006 and excluding the value of any accelerated vesting of stock options or lapsing of any post-termination stock option exercise restrictions. The amount shown for Dr. Bruinsma also includes an estimate of the benefits to which he is entitled under his employment agreement as described above. The amounts shown below are in addition to the values shown in the next table regarding the accelerated vesting of stock options.

Name of Executive Officer	Estimated Value of Severance Benefits
Gosse B. Bruinsma, M.D.	\$1,317,500
S. Colin Neill	\$619,570
Paul Feuerman	\$696,185

- (1) Dr. Bruinsma resides in the Netherlands and operates from the Axonyx Europe BV offices in Leiden, The Netherlands and is therefore compensated in the local currency, i.e. Euro. The amount reflected in the table above was calculated using a USD/Euro exchange rate of 1.2801, which was the USD/Euro exchange rate reported for August 23, 2006 in *The Wall Street Journal*.

Stock Options

Each of Axonyx's executive officers and non-employee directors holds options to purchase shares of Axonyx common stock. The options were granted under Axonyx's equity participation plans pursuant to a stock option agreement. Each option grant typically vests in a series of annual installments over a number of years. However, the option agreements provide that each option will vest and become exercisable as to all shares covered by such option upon the consummation of a merger involving Axonyx, subject to certain exceptions that would not apply to the contemplated merger. As a result, all of the outstanding options held by Axonyx's executive officers and non-employee directors will immediately vest and become exercisable in full upon consummation of the merger.

The following table shows the total number of option shares held as of August 23, 2006 by each director and executive officer. The options have exercise prices ranging between \$0.825 and \$11.50 per

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share. Based on the difference between \$0.87 (the closing price of a share of Axonyx common stock as quoted on The NASDAQ Capital Market on August 22, 2006) and the actual exercise price of each individual's unvested options, none of the unvested options held by Axonyx's executive officers and non-employee directors has any intrinsic value.

Name	Total Options Held	Vested	Unvested	Weighted Average Exercise Price Per Share
Executive Officers:				
Gosse B. Bruinsma, M.D.(2)	1,047,000	730,500	316,500	\$ 3.67
S. Colin Neill	366,400	209,100	157,300	\$ 3.39
Paul Feuerman	206,400	51,600	154,800	\$ 1.16
Directors(1):				
Marvin S. Hausman, M.D.	941,500	793,750	147,750	\$ 5.43
Steven B. Ratoff	293,307	146,032	147,275	\$ 1.13
Louis G. Cornacchia	216,500	162,500	54,000	\$ 2.74
Steven H. Ferris, Ph.D.	205,500	151,500	54,000	\$ 3.32
Ralph Snyderman, M.D. (2)	223,412	144,412	79,000	\$ 4.64

(1) Gosse B. Bruinsma, M.D., the President and Chief Executive Officer of Axonyx, is also a director of Axonyx.

(2) Such director will not serve on the board of directors of the combined company following the merger.

Combined Company's Board of Directors After the Merger

The merger agreement provides that, following the merger, the combined company will initially have a ten member board of directors, including four individuals from Axonyx's current board of directors, Louis G. Cornacchia, Marvin S. Hausman, M.D., Steven H. Ferris, Ph.D. and Steven B. Ratoff.

Indemnification of Axonyx's Officers and Directors

The merger agreement provides that, for a period of six years following the effective time of the merger, the combined company will, to the fullest extent permitted by Delaware law, indemnify and hold harmless all present and former directors and officers of Axonyx against all claims, losses, liabilities, damages, judgments, fines and reasonable fees, costs and expenses, including attorneys' fees and disbursements, incurred in connection with any claim, action, suit, proceeding or investigation, whether civil, criminal, administrative or investigative, arising out of or pertaining to the fact that such person is or was a director or officer of Axonyx. In addition, for a period of six years following the effective time of the merger, the certificate of incorporation and bylaws of the combined company and surviving company will contain provisions no less favorable with respect to indemnification of present and former directors and officers of Axonyx than are presently set forth in the certificate of incorporation and bylaws of Axonyx.

The merger agreement also provides that, for a period of six years following the consummation of the merger, the combined company will maintain in effect a directors' and officers' liability insurance policy covering the directors and officers of Axonyx, with coverage in amount and scope at least as favorable as the coverage under Axonyx's existing policy as of the time the merger becomes effective. If the annual premiums payable for such insurance coverage exceed 200% of the current annual

premiums paid by Axonyx for its existing policy, the combined company may reduce the amount of coverage to the amount of coverage available for a cost equal to that amount.

Interests of TorreyPines' Directors and Executive Officers in the Merger

In considering the recommendation of the TorreyPines board of directors with respect to adopting the merger agreement, TorreyPines' stockholders should be aware that certain members of the board of directors and executive officers of TorreyPines have interests in the merger that may be different from, or in addition to, interests they may have as TorreyPines' stockholders. Each of Axonyx's and TorreyPines' board of directors was aware of these potential conflicts of interest and considered them, among other matters, in reaching their respective decisions to approve the merger agreement and the merger, and, in the case of each board of directors, to recommend that their respective stockholders approve the Axonyx and TorreyPines proposals, as applicable, contemplated by this joint proxy statement/prospectus to be presented to their stockholders for consideration at their respective stockholder meetings.

Ownership Interests

As of August 23, 2006, all directors and executive officers of TorreyPines, together with their affiliates, beneficially owned (including through ownership of warrants) approximately 79% of the shares of TorreyPines capital stock. TorreyPines cannot complete the merger unless the merger agreement is adopted by the affirmative vote of (a) the holders of a majority of the shares of TorreyPines common stock and TorreyPines preferred stock outstanding on the record date and entitled to vote at the TorreyPines special meeting, voting as a single class and on an as-converted basis, and (b) the holders of two-thirds of the shares of TorreyPines preferred stock outstanding on the record date and entitled to vote at the TorreyPines special meeting, voting as a single class and on an as-converted basis. Certain TorreyPines officers and directors, and their affiliates, have also entered into voting agreements in connection with the merger. For a more detailed discussion of the voting agreements see the section entitled "Agreements Related to the Merger - Voting Agreements" in this joint proxy statement/prospectus.

Stock Options

At the effective time of the merger, each outstanding stock option to purchase TorreyPines common stock not exercised prior to the merger will be assumed by Axonyx and become exercisable (a) for such number of shares of Axonyx common stock as is determined by multiplying the number of shares of TorreyPines common stock subject to the option by the exchange ratio and rounding that result down to the nearest whole number of shares of Axonyx common stock, and (b) at a per share exercise price as is determined by dividing the existing exercise price of the option by the exchange ratio and rounding that result up to the nearest whole cent.

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The table below sets forth, as of August 23, 2006, information with respect to options held by each of TorreyPines' current executive officers and directors.

Name	Total Options Held	Vested	Unvested	Weighted Average Exercise Price Per Share
Executive Officers:				
Neil M. Kurtz, M.D.	1,371,560	1,161,872	209,688	\$ 0.16
Evelyn Graham	450,000	190,625	259,375	\$ 0.20
Craig Johnson	450,000	190,625	259,375	\$ 0.20
Michael Murphy, M.D., Ph.D.	450,000	257,291	192,709	\$ 0.20
Steven Wagner, Ph.D.	50,000	15,625	34,375	\$ 0.20
Directors(1):				
William T. Comer, Ph.D.	50,000	50,000	0	\$ 0.15
Roy Cosan(2)				
Peter Davis, Ph.D.	10,000		10,000	\$ 0.20
Jean Deleage, Ph.D.				
Jason S. Fisherman, M.D.				
Rudolph E. Tanzi, Ph.D.(2)	200,000	50,000	150,000	\$ 0.22
Patrick Van Beneden				

(1) Neil M. Kurtz, M.D., the chief executive officer of TorreyPines, is also a director of TorreyPines.

(2) Such director will not serve on the board of directors of the combined company following the merger.

Combined Company's Board of Directors After the Merger

The merger agreement provides that, following the merger, the combined company will initially have a ten member board of directors, including six individuals from TorreyPines' current board of directors, Neil M. Kurtz, M.D., William T. Comer, Ph.D., Peter Davis, Ph.D., Jean Deleage, Ph.D., Jason Fisherman, M.D. and Patrick Van Beneden.

Indemnification of TorreyPines' Officers and Directors

The merger agreement provides that, for a period of six years following the effective time of the merger, the combined company will, to the fullest extent permitted by Delaware law, indemnify and hold harmless all present and former directors and officers of TorreyPines against all claims, losses, liabilities, damages, judgments, fines and reasonable fees, costs and expenses, including attorneys' fees and disbursements, incurred in connection with any claim, action, suit, proceeding or investigation, whether civil, criminal, administrative or investigative, arising out of or pertaining to the fact that such person is or was a director or officer of TorreyPines. In addition, for a period of six years following the effective time of the merger, the certificate of incorporation and bylaws of the combined company and surviving company will contain provisions no less favorable with respect to indemnification of present and former directors and officers of TorreyPines than are presently set forth in the certificate of incorporation and bylaws of TorreyPines.

The merger agreement also provides that, for a period of six years following the consummation of the merger, the combined company will maintain in effect a directors' and officers' liability insurance policy covering the directors and officers of TorreyPines, with coverage in amount and scope at least as favorable as the coverage under TorreyPines' existing policy as of the time the merger becomes effective. If the annual premiums payable for such insurance coverage exceed 200% of the current

annual premiums paid by TorreyPines for its existing policy, the combined company may reduce the amount of coverage to the amount of coverage available for a cost equal to that amount.

Stock Options and Warrants

TorreyPines has granted options to purchase shares of its common stock under its 2000 Equity Incentive Plan. Each outstanding option to purchase shares of TorreyPines common stock that is not exercised prior to the effective time of the merger will be assumed by Axonyx at the effective time of the merger in accordance with the terms of the 2000 Equity Incentive Plan and the terms of the related stock option agreement and will become an option to purchase shares of Axonyx common stock. The number of shares of Axonyx common stock subject to each assumed option will be determined by multiplying the number of shares of TorreyPines common stock that was subject to each option prior to the effective time of the merger by the exchange ratio and rounding that result down to the nearest whole number of shares of Axonyx common stock. The per share exercise price for the assumed options will be determined by dividing the per share exercise price of the TorreyPines common stock subject to each option as in effect immediately prior to the effective time of the merger by the exchange ratio and rounding that result up to the nearest whole cent.

TorreyPines has issued warrants to purchase shares of its Series A preferred stock, Series B preferred stock, Series C-2 preferred stock and common stock. Each outstanding warrant to purchase shares of TorreyPines Series A preferred stock, Series B preferred stock, Series C-2 preferred stock and common stock not terminated or exercised at or prior to the merger will be assumed by Axonyx at the effective time of the merger in accordance with its terms and will become a warrant to purchase shares of Axonyx common stock. The number of shares of Axonyx common stock subject to each assumed warrant will be determined by multiplying the number of shares of TorreyPines common stock, or the number of shares of TorreyPines common stock issuable upon conversion of the shares of TorreyPines preferred stock issuable upon exercise of such warrant, as applicable, that were subject to such warrant prior to the effective time of the merger by the exchange ratio and rounding that result down to the nearest whole number of shares of Axonyx common stock. The per share exercise price for the assumed warrants will be determined by dividing the per share exercise price of the TorreyPines preferred stock or common stock subject to each warrant as in effect immediately prior to the effective time of the merger by the exchange ratio and rounding that result up to the nearest whole cent.

For a more detailed discussion of the exchange ratio and possible adjustments to the exchange ratio to reflect certain events that could occur prior to closing, see the section entitled "The Merger Agreement Merger Consideration and Adjustment" in this joint proxy statement/prospectus. If there is no adjustment to the exchange ratio to reflect certain events that could occur prior to closing, the exchange ratio will be 1.299, subject to adjustment to account for the reverse stock split to be implemented prior to the consummation of the merger, and in such case, subject to further adjustment to account for the reverse stock split:

the options to purchase 5,565,227 shares of TorreyPines common stock that were outstanding as of June 7, 2006 would, if not earlier terminated or exercised, become options to purchase an aggregate of 7,229,229 shares of Axonyx common stock at the effective time of the merger. Such options which were exercisable at prices per share ranging from \$0.10 to \$0.24 as of June 7, 2006, would become exercisable at prices per share ranging from \$0.07 to \$0.18 at the effective time of the merger.

the warrants to purchase an aggregate of 76,924 shares of TorreyPines Series A preferred stock that were outstanding as of June 7, 2006 would, if not earlier terminated or exercised, become warrants to purchase an aggregate of 99,924 shares of Axonyx common stock at the effective time of the merger. Such Series A preferred stock warrants, which were exercisable at a price per share of \$0.91 as of June 7, 2006, would become exercisable at a price per share of \$0.70.

the warrants to purchase an aggregate of 80,000 shares of TorreyPines Series B preferred stock that were outstanding as of June 7, 2006 would, if not earlier terminated or exercised, become warrants to purchase an aggregate of 103,920 shares of Axonyx common stock at the effective time of the merger. Such Series B preferred stock warrants, which were exercisable at a price per share of \$1.50 as of June 7, 2006, would become exercisable at a price per share of \$1.15.

the warrants to purchase an aggregate of 366,664 shares of TorreyPines Series C-2 preferred stock that were outstanding as of June 7, 2006 would, if not earlier terminated or exercised, become warrants to purchase an aggregate of 476,296 shares of Axonyx common stock at the effective time of the merger. Such Series C-2 preferred stock warrants, which were exercisable at a price per share of \$1.50 as of June 7, 2006, would become exercisable at a price per share of \$1.15.

the warrants to purchase an aggregate of 885,706 shares of TorreyPines common stock that were outstanding as of June 7, 2006 would, if not earlier terminated or exercised, become warrants to purchase an aggregate of 1,150,532 shares of Axonyx common stock at the effective time of the merger. Such common stock warrants, which were exercisable at a price per share of \$0.01 as of June 7, 2006, would become exercisable at a price per share of \$0.01.

Form of the Merger

The merger agreement provides that at the effective time, merger sub will be merged with and into TorreyPines. Upon the consummation of the merger, TorreyPines will continue as the surviving corporation and will be a wholly owned subsidiary of Axonyx.

After completion of the merger, assuming Axonyx Proposal No. 3 is approved by Axonyx's stockholders at the Axonyx annual meeting, Axonyx will be renamed "TorreyPines Therapeutics, Inc." and expects to trade on the NASDAQ Global Market under the symbol "TPTX".

Merger Consideration and Adjustment

At the effective time of the merger,

each share of TorreyPines common stock and preferred stock outstanding immediately prior to the effective time of the merger will automatically be converted into the right to receive 1.299 shares of Axonyx common stock, subject to adjustment to account for the reverse stock split, which is referred to as the exchange ratio;

each share of TorreyPines preferred stock outstanding immediately prior to the effective time of the merger will also automatically be converted into the right to receive a merger warrant to acquire a number of shares of Axonyx common stock determined by dividing a total of 12,000,000 shares of Axonyx common stock, subject to adjustment to account for the reverse stock split, by the total number of outstanding shares of TorreyPines preferred stock;

each option to purchase shares of TorreyPines common stock outstanding and unexercised immediately prior to the effective time of the merger will be assumed by Axonyx and will become an option to purchase shares of Axonyx common stock; and

each warrant to purchase shares of TorreyPines preferred stock or common stock outstanding and not terminated or exercised immediately prior to the effective time of the merger will be assumed by Axonyx and will become a warrant to purchase shares of Axonyx common stock.

Immediately after the merger, based on the exchange ratio, which is subject to adjustments to reflect certain events that could occur prior to closing of the merger as described below, TorreyPines securityholders will own approximately 58% of the fully-diluted shares of the combined company (excluding the merger warrants) with Axonyx securityholders holding approximately 42% of the fully-

diluted shares of the combined company, in each case calculated using the treasury stock method. If the merger warrants were exercised as of the closing of the merger, when combined with the shares of Axonyx common stock issued in the merger, TorreyPines securityholders would own approximately 62% of the fully-diluted shares of the combined company, with Axonyx securityholders holding approximately 38% of the fully-diluted shares of the combined company, in each case calculated using the treasury stock method. These percentages assume:

a reference price of \$0.942 per share of Axonyx common stock for treasury stock method calculation purposes, calculated based on the average closing price per share of Axonyx common stock for the five trading days ending June 5, 2006;

that the number of shares subject to TorreyPines options and warrants does not change between the date of this joint proxy statement/prospectus and the closing of the merger; and

that the exchange ratio is not adjusted, as described below.

The merger agreement does not include a price-based termination right, so there will be no adjustment to the total number of shares of Axonyx common stock that TorreyPines securityholders will be entitled to receive for changes in the market price of Axonyx common stock. Accordingly, the market value of the shares of Axonyx common stock issued pursuant to the merger will depend on the market value of the shares of Axonyx common stock at the time the merger closes, and could vary significantly from the market value on the date of this joint proxy statement/prospectus.

The exchange ratio of 1.299 is subject to adjustment to account for the effect of the reverse stock split and is also subject to adjustment upon the occurrence of certain events, as follows:

if Axonyx completes an Axonyx permitted out-license prior to the date that is five business days before the date of the Axonyx annual meeting of stockholders, then the exchange ratio will be adjusted in accordance with a formula set forth in the merger agreement to reflect the addition to Axonyx's valuation of 75% of the cash paid to Axonyx at or prior to the closing of the Axonyx permitted out-license, which will have the effect of increasing the percentage of the combined company owned by Axonyx's securityholders and reducing the percentage of the combined company owned by TorreyPines' securityholders. In addition, if Axonyx completes an Axonyx permitted out-license, TorreyPines may elect to terminate the merger agreement and require Axonyx to reimburse it for its expenses, up to a maximum of \$1 million; and

if TorreyPines completes a TorreyPines permitted out-license prior to the date that is five business days before the date of the Axonyx annual meeting of stockholders, then the exchange ratio will be adjusted in accordance with a formula set forth in the merger agreement to reflect the addition to TorreyPines' valuation of 75% of the cash paid to TorreyPines at or prior to the closing of the TorreyPines permitted out-license, which will have the effect of increasing the percentage of the combined company owned by TorreyPines' securityholders and reducing the percentage of the combined company owned by Axonyx's securityholders. In addition, if TorreyPines completes a TorreyPines permitted out-license, Axonyx may elect to terminate the merger agreement and require TorreyPines to reimburse it for its expenses, up to a maximum of \$1 million.

No fractional shares of Axonyx common stock will be issuable pursuant to the merger to TorreyPines stockholders. Instead, each TorreyPines stockholder who would otherwise be entitled to receive a fraction of a share of Axonyx common stock, after aggregating all fractional shares of Axonyx common stock issuable to such stockholder, will be entitled to receive in cash the dollar amount, rounded to the nearest whole cent, without interest, determined by multiplying such fraction by the closing price of a share of Axonyx common stock as quoted on the NASDAQ Capital Market, on the date the merger becomes effective.

The merger agreement provides that, at the effective time of the merger, Axonyx will deposit with an exchange agent acceptable to Axonyx and TorreyPines stock certificates representing the shares of Axonyx common stock issuable to the TorreyPines stockholders, the merger warrants issuable to the hold