RIGEL PHARMACEUTICALS INC Form 424B3 September 14, 2004

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Prospectus Supplement No. 8 Dated September 14, 2004 To Prospectus Dated July 23, 2003

Rigel Pharmaceuticals, Inc. 9,583,331 Shares Common Stock

This prospectus supplements the prospectus, dated July 23, 2003, of Rigel Pharmaceuticals, Inc. relating to the offering and sale by selling stockholders of Rigel (or by donees, pledgees, transferees and other successors in interest that receive such shares as a gift, pledge, partnership distribution or other non-sale transfer) of 9,583,331 shares of our common stock. This prospectus supplement should be read in conjunction with the prospectus, and is qualified by reference to the prospectus, except to the extent that the information presented herein supercedes the information contained in the prospectus. The term "Selling Stockholders" as used in the prospectus shall be deemed to include the selling stockholders identified in the table below. This prospectus supplement is not complete without, and may not be delivered or utilized except in connection with, the prospectus, including any amendments or supplements thereto.

#### Investing in our securities involves a high degree of risk. See "Risk Factors" beginning on page 1 of the prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

This prospectus supplement is being filed in connection with the distribution of shares held by MPM BioVentures III-QP, L.P., MPM BioVentures III Parallel Fund L.P., MPM Asset Management Investors 2003 BVIII LLC, and MPM BioVentures III GmbH & Co. Beteiligungs KG (the "MPM Funds") each identified in the prospectus as a selling stockholder, to their respective partners and members. No additional shares of Rigel common stock are being offered for resale hereunder. Except with respect to directors and officers of Rigel, the MPM Funds and entities that have filed reports pursuant to Section 13(f) of the Securities Exchange Act of 1934, as amended (the "Act"), and statements of beneficial ownership filed pursuant to Sections 13(d) and 13(g) of the Act, the ownership indicated in the table below is based solely on shares owned by the indicated selling stockholders as a result of a distribution of shares by the MPM Funds on September 13, 2004. The table appearing on pages 16 and 17 of the prospectus under the caption "Selling Stockholders" is supplemented and amended to include the following stockholders in addition to those identified in the prospectus:

		ficial Ownership fore Offering			Ownership Offering
Name and Address of Beneficial Owner***	Shares	Percent*	Shares Offered	Shares	Percent*
MPM BioVentures III-QP, L.P.(1) 601 Gateway Blvd., Suite 350 South San Francisco, CA 94080	722,589	3.9%	722,589	0	3.9%
MPM BioVentures III L.P.(1) 601 Gateway Blvd., Suite 350 South San Francisco, CA 94080	48,585	**	48,585	0	**

MPM BioVentures III Parallel Fund L.P.(1) 601 Gateway Blvd., Suite 350 South San Francisco, CA 94080	21,823	**	21,823	0	**
MPM Asset Management Investors 2003 BVIII LLC(1) 601 Gateway Blvd., Suite 350 South San Francisco, CA 94080	13,990	**	13,990	0	**
MPM BioVentures III GmbH & Co. Beteiligungs KG(1) 601 Gateway Blvd., Suite 350 South San Francisco, CA 94080	61,068	**	61,068	0	**
A. Segal Holdings	2,458	**	2,458	0	**
AAG Peakham LLC	557	**	557	0	**
Abbott Laboratories	24,579	**	24,579	0	**
AH Investments Limited (Wyeth)	12,290	**	12,290	0	**
Alexandria Equities, LLC	6,022	**	6,022	0	**
Allianz Leben Private Equity Fonds 2001 GmbH	24,579	**	24,579	0	**
Allianz Private Equity Partners GmbH	6,145	**	6,145	0	**
Altana AG	13,270	**	13,270	0	**
American Family Mutual Insurance Company	12,290	**	12,290	0	**
Anatolia College	307	**	307	0	**
Ann Arbor Partners, L.P.	614	**	614	0	**
Anthem Insurance Companies	6,145	**	6,145	0	**
Auda Advisors	3,254	**	3,254	0	**
Auda Management	28,419	**	28,419	0	**
Auda Securities GmbH	6,635	**	6,635	0	**
Autumn Ventures LLC	2,458	**	2,458	0	**
Ayers, Gregory	18	**	18	0	**
Bank of America Capital Corporation	24,579	**	24,579	0	**
Banque de Luxembourg	12,290	**	12,290	0	**
BB TRUST under authorized date 2/21/03	1,229	**	1,229	0	**
Bechtle Revocable Trust Dated October 18, 1991	1,536	**	1,536	0	**
Biogen Idec MA, Inc.	4,916	**	4,916	0	**
BioMedical Sciences Investment Fund Pte Ltd	6,145	**	6,145	0	**
BSC Venture Fund 2001 LLC	6,145	**	6,145	0	**
Burda, Hubert	1,327	**	1,327	0	**

Canada Pension Plan Investment Board	92,173	**	92,173	0	**
Carl-Th. Epping GmbH	1,327	**	1,327	0	**
Case Western Reserve University	3,687	**	3,687	0	**
CDK Associates, L.L.C.	6,145	**	6,145	0	**
Chabner, Brandon S.	18	**	18	0	**
Chabner, Bruce Allan	18	**	18	0	**
China Development Industrial Bank Inc.	6,145	**	6,145	0	**
Comerica Capital Advisors Incorporated	614	**	614	0	**
Commerce and Industry Insurance Company by AIG Global Investment Corp., its Investment Advisor	6,145	**	6,145	0	**
Daley, George Q.	177	**	177	0	**
Danske Private Equity Partners II (USD) K/S	30,724	**	30,724	0	**
Danske Private Equity Partners K/S	43,014	**	43,014	0	**
Dombkowski, Ashley	15	**	15	0	**
Dottinger/Straubinger Vermogensverwaltung GmbH	20,701	**	20,701	0	**
Erickson, Thomas J.	461	**	461	0	**
Evnin, Anthony B.	1,229	**	1,229	0	**
Evnin, Luke	139,895	**	139,895	0	**
Ewing Marion Kauffman Foundation	7,374	**	7,374	0	**
Fiduciary Trust Co., Trustee u/a 4/23/93	6,145	**	6,145	0	**
Fiduciary Trust Company, Trustee u/a 10/9/91	6,145	**	6,145	0	**
Foley, Todd	25	**	25	0	**
Forbes Jr., John G.	184	**	184	0	**
Gadicke, Ansbert	133,836	**	133,836	0	**
Galakatos, Nicholas	56,973	**	56,973	0	**
General Electric Capital Corporation	6,145	**	6,145	0	**
Genzyme Corporation	6,145	**	6,145	0	**
Gollamudi, Raj L.	246	**	246	0	**
Greene, William	88	**	88	0	**
GS PEP 1999 Manager Fund Technology Holdings, LLC	695	**	695	0	**
GS PEP Technology Fund 2000 Offshore Holdings, L.P.	9,532	**	9,532	0	**

GS PEP Technology Fund 2000, L.P.	24,153	**	24,153	0	**

GS Private Equity Partners 2000 Manager Fund L.P.	6,698	**	6,698	0	**
GS Private Equity Partners 2000 Offshore Holdings, LP	6,071	**	6,071	0	**
GS Private Equity Partners 2000, LP	17,955	**	17,955	0	**
GS Private Equity Partners 2002 Manager Fund, LP	6,391	**	6,391	0	**
GS Private Equity Partners 2002 Employee Fund, LP	1,708	**	1,708	0	**
GS Private Equity Partners 2002 Offshore Holdings, LP	14,612	**	14,612	0	**
GS Private Equity Partners 2002, LP	3,650	**	3,650	0	**
Haas, Sylvia	1,327	**	1,327	0	**
HAPEP II Holding GmbH	13,270	**	13,270	0	**
Henner, Dennis(2)	13,918	**	13,918	0	**
Henner Irrevocable Trust	3,335	**	1,766	1,569	**
Henney, Jane	50	**	50	0	**
Henzler, Herbert	1,327	**	1,327	0	**
HFI Private Equity Ltd.	12,290	**	12,290	0	**
Hosang, Markus	71	**	71	0	**
Hunter Portsmouth, LLC	1,229	**	1,229	0	**
ITOCHU Corporation	33,501	**	33,501	0	**
Jax Partners	2,950	**	2,950	0	**
Jovan, Morana	707	**	707	0	**
K Investments IV, LLC	6,145	**	6,145	0	**
Knightsbridge Integrated Holdings V, LP	18,435	**	18,435	0	**
Kowloon Ltd.	3,687	**	3,687	0	**
Kucherlapati, Raju	246	**	246	0	**
Langton Ltd.	6,145	**	6,145	0	**
Legacy I, LLC	6,145	**	6,145	0	**
Legacy Venture II, LLC	6,145	**	6,145	0	**
Liptak, Robert	101	**	101	0	**
Maassen, Hans Peter	2,322	**	2,322	0	**
Maraganore, John	246	**	246	0	**

Merck & Co., Inc.	24,579	**	24,579	0	**
Neugebauer, Klaus	2,654	**	2,654	0	**
Newtech International Limited	24,579	**	24,579	0	**
Next Chapter Holdings, LP	614	**	614	0	**
Nippon Life Insurance Company	24,579	**	24,579	0	**
Nipponkoa Insurance Co., Ltd.	6,145	**	6,145	0	**
Nunn, Jake	126	**	126	0	**
Old Westbury Private Equity Fund 2001, LLC (Series A)	4,701	**	4,701	0	**
Old Westbury Private Equity Fund 2001, LLC (Series B)	1,444	**	1,444	0	**
Oscar L. Tang Grantor Trust	246	**	246	0	**
Overbrook Limited Partnership	6,145	**	6,145	0	**
Paster, Anne-Mari	18	**	18	0	**
Peter E. and Miriam L. Haas, CPWROS	2,458	**	2,458	0	**
Phillip W. Moffitt Revocable Trust	614	**	614	0	**
Potts, John	505	**	505	0	**
Prince Holdings, Inc.	1,843	**	1,843	0	**
ProSA-Feuer Beteiligungsgesellschaft der Westfälischen Provinzial-Feuersozietät	4,645	**	4,645	0	**
ProSA-Leben Beteiligungsgesellschaft der Westfälischen Provinzial-Lebensversicherungsanstalt	8,626	**	8,626	0	**
Puren Elisabeth	614	**	614	0	**
Rinconada LLC	1,229	**	1,229	0	**
Rivercoast & Co. (State Treasurer of the State of Michigan, Custodian of the Michigan Public School Employees' Retirement System, State Employees' Retirement System, and Michigan State Police Retirement System)	30,724	**	30,724	0	**
Rose Nominees Limited a/c 29977	4,916	**	4,916	0	**
Rosenzweig, Anne L.	18	**	18	0	**
Scolnick, Edward	1,766	**	1,766	0	**
Scottish Widows Investment Partnership Limited	18,435	**	18,435	0	**
Seizinger, Bernd R.	133	**	133	0	**
Selby, Norman C.	614	**	614	0	**
Shiosaki, Kazumi	177	**	177	0	**

5,025	**	5,025	0	**
1,327	**	1,327	0	**
8,603	**	8,603	0	**
14,956	**	14,956	0	**
123	**	123	0	**
6,145	**	6,145	0	**
12,290	**	12,290	0	**
19,302	**	19,302	0	**
87,164	**	87,164	0	**
14	**	14	0	**
8,635	**	8,635	0	**
18,435	**	18,435	0	**
61,449	**	61,449	0	**
9,217	**	9,217	0	**
3,981	**	3,981	0	**
4,670	**	4,670	0	**
492	**	492	0	**
49,159	**	49,159	0	**
6,145	**	6,145	0	**
307	**	307	0	**
922	**	922	0	**
20,585	**	20,585	0	**
3,072	**	3,072	0	**
18	**	18	0	**
6,145	**	6,145	0	**
6,145	**	6,145	0	**
1,229	**	1,229	0	**
6,145	**	6,145	0	**
6,759	**	6,759	0	**
	1,327 8,603 14,956 123 6,145 12,290 19,302 87,164 14 8,635 18,435 61,449 9,217 3,981 4,670 492 49,159 6,145 307 922 20,585 3,072 18 6,145 6,145 6,145 1,229 6,145	1,327       **         8,603       **         14,956       **         123       **         6,145       **         12,290       **         19,302       **         87,164       **         14       **         8,635       **         18,435       **         61,449       **         9,217       **         3,981       **         4,670       **         492       **         49,159       **         6,145       **         307       **         922       **         20,585       **         3,072       **         18       **         6,145       **         1,229       **         6,145       **         1,229       **         6,145       **	1,327       **       1,327         8,603       **       8,603         14,956       **       14,956         123       **       123         6,145       **       6,145         12,290       **       12,290         19,302       **       19,302         87,164       **       87,164         14       **       14         8,635       **       8,635         18,435       **       18,435         61,449       **       61,449         9,217       **       9,217         3,981       **       3,981         4,670       **       4,670         492       **       492         49,159       **       49,159         6,145       **       6,145         307       **       307         922       **       922         20,585       **       20,585         3,072       **       3,072         18       **       6,145         6,145       **       6,145         6,145       **       6,145         1,229       **       1,229	1,327       **       1,327       0         8,603       **       8,603       0         14,956       **       14,956       0         123       **       123       0         6,145       **       6,145       0         12,290       **       12,290       0         19,302       **       19,302       0         87,164       **       87,164       0         14       **       14       0         8,635       **       8,635       0         18,435       **       18,435       0         61,449       **       61,449       0         9,217       **       9,217       0         3,981       **       3,981       0         4,670       **       4,670       0         492       **       492       0         49,159       **       49,159       0         6,145       **       6,145       0         3,072       **       3,072       0         18       **       18       0         6,145       **       6,145       0         6,145

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The Tang Fund	737	**	737	0	**
Todd, Karla	1,628	**	1,628	0	**
Trust dated 12/19/1966 f/b/o Shirley S. Katzenbach #1	3,687	**	3,687	0	**
Trust U/Article Third of L/W/T of Shirley W. Steinman	3,687	**	3,687	0	**
Turner, Stacy	71	**	71	0	**
Valinco Investments Limited	1,229	**	1,229	0	**
Vander Vort, John W.	369	**	369	0	**
Vierte MPC Global Equity GmbH & Co. KG	1,327	**	1,327	0	**
von Emster, Kurt	631	**	631	0	**
von Schoenborn, Albert Graf	1,194	**	1,194	0	**
W.M. Keck Foundation	30,724	**	30,724	0	**
Wachovia Investors, Inc.	6,145	**	6,145	0	**
Walker, Paul	141	**	141	0	**
Walsh, Christopher	265	**	265	0	**
Walton Investment V, LLC	3,687	**	3,687	0	**
Weissman, Carl	50	**	50	0	**
Wheeler, Kurt	56,601	**	56,601	0	**
Wheeler, Mary	930	**	930	0	**
Winkey, Travis J.	154	**	154	0	**
Winterthur Life Einzel (Winterthur Life Insurance Co.)	12,289	**	12,289	0	**
Winterthur Life Kollektiv (Winterthur Life Insurance Co.)	12,290	**	12,290	0	**
Total	2,556,696	13.8%	2,555,127	1,569	**

Less than 1%

Addresses that are not listed are c/o MPM Capital, 601 Gateway Blvd., Suite 350, South San Francisco, CA 94080.

(1)
Includes 722,589 shares of common stock subject to a currently exercisable warrant held by MPM BioVentures III-QP, L.P., 48,585 shares of common stock subject to a currently exercisable warrant held by MPM BioVentures III L.P., 21,823 shares of common stock subject to a currently exercisable warrant held by MPM BioVentures III Parallel Fund L.P., 13,990 shares of common stock subject to

Percentage calculations based on 18,466,867 shares of our common stock that were issued and outstanding as of September 13, 2004.

a currently exercisable warrant held by MPM Asset Management Investors  $2003\,BVIII\,LLC$ , and  $61,068\,shares$  of common stock subject to a currently exercisable warrant held by

MPM BioVentures III GmbH & Co. Beteiligungs KG. Dennis Henner, PhD, and Nicholas Simon, each directors of Rigel since June 26, 2003, are managing members of MPM BioVentures III LLC and MPM Asset Management Investors 2003 BVIII, LLC. MPM BioVentures III LLC is the general partner of MPM BioVentures III GP, L.P., which is the general partner of MPM BioVentures III, L.P., MPM BioVentures III-QP, L.P. and MPM BioVentures III Parallel Fund, L.P. and the Managing Limited Partner of MPM BioVentures III GmbH & Co. Beteiligungs KG. Each of Mr. Simon and Dr. Henner disclaims beneficial ownership of all such shares except to the extent of their respective proportionate pecuniary interests therein.

- (2) Dr. Henner is a director of Rigel.
- (3) Mr. Simon is a director of Rigel.

#### QuickLinks

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