Bacterin International Holdings, Inc. Form 8-A12B November 05, 2010

UNITED STATES SECURITIES AND EXCHANGE COMMISSION Washington, DC 20549

FORM 8-A

FOR REGISTRATION OF CERTAIN CLASSES OF SECURITIES PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934

20-5313323

(I.R.S. Employer Identification No.)

59714

(Zip Code)

Bacterin International Holdings, Inc. (Exact name of registrant as specified in its charter)

Delaware (State of incorporation or organization)

600 Cruiser Lane, Belgrade, Montana (Address of principal executive offices)

Securities to be registered pursuant to Section 12(b) of the Act:

| Title of each class | Name of each exchange on which |
|--|--------------------------------|
| to be so registered | each class is to be registered |
| Common Stock, par value \$0.000001 per share | The NASDAQ Stock Market LLC |

If this form relates to the registration of a class of securities pursuant to Section 12(b) of the Exchange Act and is effective pursuant to General Instruction A.(c), check the following box. x

If this form relates to the registration of a class of securities pursuant to Section 12(g) of the Exchange Act and is effective pursuant to General Instruction A.(d), check the following box. "

Securities Act registration statement file number to which this form relates:

333-158426 (S-1 effective September 29, 2009) and 333-169620 (S-1 filed September 28, 2010, not yet effective)

Securities to be registered pursuant to Section 12(g) of the Act: None

Item 1. Description of Registrant's Securities to be Registered.

The description of the securities being registered is set forth under "Description of Securities – Common Stock" in the Company's registration statement on Form S-1 (File No. 333-169620), originally filed with the Securities and Exchange Commission on September 28, 2010, as amended, including any form of prospectus contained therein pursuant to Rule 424(b) under the Securities Act of 1933, which description and prospectus are incorporated herein by reference. Copies of such description will be filed with The NASDAQ Stock Market LLC.

Item 2. Exhibits.

Under the Instructions to Exhibits with respect to Form 8-A, no exhibits are required to be filed as the securities being registered on this form are (a) being registered on an exchange on which no other securities of the Company are registered, and (b) are not being registered pursuant to Section 12(g) of the Exchange Act.

SIGNATURE

Pursuant to the requirements of Section 12 of the Securities Exchange Act of 1934, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereto duly authorized.

BACTERIN INTERNATIONAL HOLDINGS, INC.

By: Name: Title: /s/ Guy S. Cook Guy S. Cook President and Chief Executive Officer

Dated: November 5, 2010