

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**

Washington, D.C. 20549

**FORM S-8
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

ENTEROMEDICS INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

48-1293684
(I.R.S. Employer
Identification No.)

**2800 Patton Road
St. Paul, MN 55113**
(Address, including zip code, of registrant's principal executive offices)

ENTEROMEDICS INC. 2003 STOCK INCENTIVE PLAN
(Full title of the plan)

Greg S. Lea
Chief Financial Officer and Secretary
EnteroMedics Inc.
2800 Patton Road
St. Paul, MN 55113
(651) 634-3003
(Name, address and telephone number, including area code, of agent for service)

Indicate by check mark, whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer," and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer Accelerated Filer
Non-accelerated filer (Do not check if a smaller reporting company) Smaller Reporting Company

CALCULATION OF REGISTRATION FEE

Title of securities to be registered	Amount to be registered(1)	Proposed maximum offering price per share	Proposed maximum aggregate offering price	Amount of registration fee
Common Stock (\$0.01 par value per share)	1,149,817	(2)	\$2,923,410(2)	\$209

- (1) Pursuant to Rule 416 under the Securities Act of 1933, as amended (the "Securities Act"), this Registration Statement also covers additional shares of EnteroMedics Inc. common stock that may become issuable in accordance with the adjustment and anti-dilution provisions of the EnteroMedics Inc. 2003 Stock Incentive Plan.
- (2) Estimated solely for the purpose of determining the registration fee pursuant to Rule 457(h)(1) and (c) under the Securities Act, based on the average of the high and low sale prices of EnteroMedics Inc.'s common stock as reported on the NASDAQ Capital Market on December 16, 2010.

EXPLANATORY NOTE

This Registration Statement on Form S-8 of EnteroMedics Inc. (the "Company") is being filed pursuant to General Instruction E to Form S-8 under the Securities Act of 1933, as amended, to register an additional 1,149,817 shares of common stock, par value \$0.01 per share, of the Company issuable pursuant to the Company's 2003 Stock Incentive Plan (the "Plan"). These additional shares were authorized by an amendment to the Plan which was approved by the stockholders at the Company's special meeting of stockholders on October 29, 2010. The remaining shares of common stock issuable under the Plan have been previously registered by Registration Statements on Form S-8 (Registration Nos. 333-149662 and 333-159592), which registration statements are hereby incorporated by reference.

PART II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

There are hereby incorporated by reference into this Registration Statement on Form S-8 the following documents and information, which have been filed with the Securities and Exchange Commission ("SEC") by EnteroMedics Inc. (the "Company"):

1. The Company's Annual Report on Form 10-K for the year ended December 31, 2009;
2. The Company's Quarterly Reports on Form 10-Q for the quarterly periods ended March 31, 2010, June 30, 2010 and September 30, 2010;
3. The Company's Current Reports on Form 8-K filed with the SEC on January 15, 2010, January 20, 2010, January 21, 2010, February 10, 2010, February 12, 2010, February 23, 2010, March 15, 2010, March 17, 2010, April 19, 2010, May 11, 2010, May 19, 2010, June 29, 2010, July 13, 2010, August 2, 2010; October 5, 2010, October 22, 2010, October 29, 2010, November 1, 2010, December 9, 2010, December 10, 2010 and December 14, 2010; and
4. The description of the Company's common stock contained in its Registration Statement on Form 8-A filed with the SEC on November 8, 2007, including any amendment or report filed for the purpose of updating such description.

All documents filed by the Company pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934, as amended, (excluding any portions thereof furnished under Items 2.02 or 7.01 of Form 8-K) subsequent to the date hereof and prior to the filing of a post-effective amendment which indicates that all securities offered hereby have been sold or which deregisters all securities remaining unsold shall be deemed to be incorporated by reference herein and to be a part hereof from the respective dates of filing of such documents.

Item 8. Exhibits.

- 5.1 Opinion of Dorsey & Whitney LLP.
- 23.1 Consent of Deloitte & Touche LLP, Independent Registered Public Accounting Firm.
- 23.2 Consent of Dorsey & Whitney LLP (included in Exhibit 5.1 to this Registration Statement).
- 24.1 Power of Attorney (included on signature page to this Registration Statement).

EXHIBIT INDEX

<u>Exhibit No.</u>	<u>Description</u>
5.1	Opinion of Dorsey & Whitney LLP.
23.1	Consent of Deloitte & Touche LLP, Independent Registered Public Accounting Firm.
23.2	Consent of Dorsey & Whitney LLP (included in Exhibit 5.1 to this Registration Statement).
24.1	Power of Attorney (included on signature page to this Registration Statement).

[Letterhead of Dorsey & Whitney LLP]

December 17, 2010

EnteroMedics Inc.
2800 Patton Road
St. Paul, MN 55113

Re: Registration Statement on Form S-8

Ladies and Gentlemen:

We have acted as counsel to EnteroMedics Inc., a Delaware corporation (the "Company"), in connection with the registration under the Securities Act of 1933, as amended, on a registration statement on Form S-8 (the "Registration Statement") of an aggregate of 1,149,817 shares of the Company's common stock, \$0.01 par value per share (the "Shares"), issuable under the EnteroMedics Inc. 2003 Stock Incentive Plan (the "Plan").

We have examined such documents and have reviewed such questions of law as we have considered necessary and appropriate for the purposes of this opinion. In rendering our opinion set forth below, we have assumed the authenticity of all documents submitted to us as originals, the genuineness of all signatures and the conformity to authentic originals of all documents submitted to us as copies. We have also assumed the legal capacity for all purposes relevant hereto of all natural persons. As to questions of fact material to our opinion, we have relied upon certificates of officers of the Company and of public officials.

Based on the foregoing, we are of the opinion that the Shares have been duly authorized and, upon issuance, delivery and payment therefor in accordance with the terms of the Plan, and any relevant agreements thereunder, will be validly issued, fully paid and nonassessable.

Our opinion expressed above is limited to the Delaware General Corporation Law.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement. The foregoing opinion is being furnished to you solely for your benefit and may not be relied upon by, nor may copies be delivered to, any other person without our prior written consent.

Very truly yours,

/s/ Dorsey & Whitney LLP



Deloitte & Touche LLP
50 South Sixth Street
Suite 2800
Minneapolis, MN 55402-1538
USA
Tel: +1 612 397 4000
Fax: +1 612 397 4450
www.deloitte.com

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-8 of our report dated March 29, 2010, relating to the consolidated financial statements of EnteroMedics Inc. and subsidiary (the "Company") (which report expresses an unqualified opinion and includes an explanatory paragraph relating to the January 1, 2009 adoption of new authoritative accounting guidance regarding the financial reporting for outstanding equity-linked financial instruments and an explanatory paragraph regarding going concern uncertainty), appearing in the Annual Report on Form 10-K of the Company for the year ended December 31, 2009.

DELOITTE & TOUCHE LLP

Minneapolis, Minnesota
December 17, 2010

Member of
Deloitte Touche Tohmatsu Limited