
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

FORM S-1
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)

3845
(Primary Standard Industrial
Classification Code Number)

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

2800 Patton Road
St. Paul, Minnesota 55113
(651) 634-3071
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

Mark B. Knudson, Ph.D.
Chief Executive Officer
EnteroMedics Inc.
2800 Patton Road
St. Paul, Minnesota 55113
(651) 634-3003
(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to:

Kenneth L. Cutler
Timothy S. Hearn
Dorsey & Whitney LLP
50 South Sixth Street
Minneapolis, Minnesota 55402
Tel: (612) 340-2600
Fax: (612) 340-2868

W. Morgan Burns
Jonathan R. Zimmerman
Faegre & Benson LLP
2200 Wells Fargo Center
90 South Seventh Street
Minneapolis, Minnesota 55402
Tel: (612) 766-7000
Fax: (612) 766-1600

Approximate date of commencement of proposed sale to the public: As soon as practicable after this registration statement becomes effective.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933 check the following box:

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. 333-170503

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

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. (Check one):

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 Each Class of Securities to be Registered	Proposed Maximum Aggregate Offering Price(1)(2)	Amount of Registration Fee(3)
Common stock, \$0.01 par value per share	\$1,050,000	
Warrants to purchase common stock	(4)	(4)
Common stock underlying warrants	\$1,312,500(5)	
Total	\$2,362,500	\$169

- (1) In accordance with Rule 462(b) promulgated under the Securities Act of 1933, as amended, an additional amount of securities having a proposed maximum aggregate offering price of no more than 20% of the maximum aggregate offering price of the securities eligible to be sold under the related Registration Statement on Form S-1 (File No. 333-170503), as amended, is hereby registered.
- (2) Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(o) under the Securities Act of 1933. Includes the offering price attributable to shares available for purchase by the underwriter to cover over-allotments, if any.
- (3) Calculated pursuant to Rule 457(o) based on an estimate of the proposed maximum aggregate offering price.
- (4) No fee pursuant to Rule 457(g).
- (5) Determined in accordance with Rule 457(g) based upon the estimated exercise price of the warrants.

This Registration Statement shall become effective upon filing in accordance with Rule 462(b) under the Securities Act of 1933, as amended.

EXPLANATORY NOTE AND INCORPORATION BY REFERENCE

This Registration Statement on Form S-1 (this "Registration Statement") is being filed with respect to the registration of additional shares of common stock, par value \$0.01 per share, and warrants to purchase common stock of EnteroMedics Inc., a Delaware corporation (the "Company"), pursuant to Rule 462(b) under the Securities Act of 1933, as amended. The contents of the Company's Registration Statement on Form S-1, as amended (File No. 333-170503), initially filed by the Company on November 10, 2010 and declared effective by the Securities and Exchange Commission (the "Commission") on December 8, 2010, are incorporated by reference into this Registration Statement.

The required opinion and consents are listed on an Exhibit Index attached hereto and filed herewith.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 16. Exhibits

All exhibits filed with or incorporated by reference in the Company's Registration Statement on Form S-1, as amended (File No. 333-170503), are incorporated by reference into, and shall be deemed part of, this Registration Statement, except the following, which are filed herewith.

<u>Exhibit Number</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 the signature page to the Company's Registration Statement on Form S-1 (File No. 333-170503) filed with the Commission on November 10, 2010.

EXHIBIT INDEX

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[Letterhead of Dorsey & Whitney LLP]

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

Re: Registration Statement on Form S-1

Ladies and Gentlemen:

We have acted as counsel to EnteroMedics Inc., a Delaware corporation (the "Company"), in connection with the preparation of its Registration Statement on Form S-1 (the "Registration Statement") filed under Rule 462(b), relating to (a) the offering and sale by the Company of up to an additional \$1,050,000 aggregate public offering price of shares (the "Shares") of its common stock, par value \$0.01 per share (the "Common Stock"), (b) additional warrants to purchase a share of Common Stock for each Share sold in the offering (the "Warrants") and (c) up to an additional \$1,312,500 aggregate public offering price of shares of Common Stock issuable upon exercise of the Warrants (the "Warrant Shares"). The Shares and the Warrants are to be sold to the underwriter for resale to the public together with the securities registered pursuant to the Registration Statement on Form S-1 (File No. 333-170503) that was declared effective on December 8, 2010 (the "Initial Registration Statement") and the form of underwriting agreement filed as an exhibit to such Initial Registration Statement.

We have examined such documents and have reviewed such questions of law as we have considered necessary and appropriate for the purposes of our opinions set forth below. In rendering our opinions 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 and, with respect to all parties to agreements or instruments relevant hereto other than the Company, that such parties had the requisite power and authority (corporate or otherwise) to execute, deliver and perform such agreements or instruments, that such agreements or instruments have been duly authorized by all requisite action (corporate or otherwise), executed and delivered by such parties and that such agreements or instruments are the valid, binding and enforceable obligations of such parties. As to questions of fact material to our opinions, we have relied upon certificates of officers of the Company and of public officials. We have also assumed that the Shares, the Warrants and the Warrant Shares will be issued and sold as described in the Initial Registration Statement.

Based on the foregoing, we are of the opinion that:

(1) The Company has the authority pursuant to its Amended and Restated Certificate of Incorporation (the "Certificate of Incorporation") to issue up to 85,000,000 shares of Common Stock. Upon adoption by the Company's Board of Directors or a duly constituted and empowered committee thereof (a "Committee") of resolutions in sufficient form and content under the Delaware General Corporation Law (the "DGCL"), as then in effect, and the Company's Certificate of Incorporation and Amended and Restated Bylaws (the "Bylaws"), as then in effect, to authorize the issuance of a particular number of Shares (and the issuance of the Warrant Shares upon the exercise of any validly issued Warrants exercisable for Common

Stock) and upon the due execution, issuance and delivery of certificates representing such Shares and Warrant Shares (or, if uncertificated, the making of valid book-entry notations in the stock register of the Company) and payment for such Shares in the manner contemplated by such resolutions and by the Initial Registration Statement and the prospectus included therein (the "Prospectus") (and in the case of the issuance of such Warrant Shares pursuant to the exercise of any validly issued Warrants exercisable for Common Stock, upon the satisfaction of and compliance with the conditions to such exercise), such Shares and Warrant Shares will be validly issued, fully paid and nonassessable.

(2) When (a) a warrant agreement for the Warrants has been duly authorized, executed and delivered by the Company and (b) the Warrants have been duly executed and delivered and issued and sold in the form and in the manner contemplated in the Initial Registration Statement and the Prospectus and as required by applicable law, such Warrants will constitute valid and legally binding obligations of the Company, enforceable against the Company in accordance with their terms.

The opinions set forth above are subject to the following qualifications and exceptions:

(a) Our opinions are subject to the effect of any applicable bankruptcy, insolvency, reorganization, moratorium or other similar law of general application affecting creditors' rights.

(b) Our opinions are subject to the effect of general principles of equity, including (without limitation) concepts of materiality, reasonableness, good faith and fair dealing, and other similar doctrines affecting the enforceability of agreements generally (regardless of whether considered in a proceeding in equity or at law).

(c) In rendering our opinions set forth above, we have assumed that, at the time of the authentication and delivery of the Shares, the Warrants and the Warrant Shares, the resolutions referred to above will not have been modified or rescinded, there will not have occurred any change in the law affecting the authorization, execution, delivery, validity or enforceability of the Shares, the Warrants or the Warrant Shares, the Initial Registration Statement and any required amendment (including post-effective amendments), the Registration Statement and the Prospectus have become effective under the Securities Act of 1933, as amended, and will continue to be effective, and none of the particular terms of the Shares, the Warrants or the Warrant Shares will violate any applicable law and neither the issuance and sale thereof nor the compliance by the Company with the terms thereof will result in the violation of any agreement or instrument then binding on the Company or any order of any court or governmental body having jurisdiction over the Company.

Our opinions expressed above are limited to the Delaware General Corporation Law and the federal laws of the United States of America.

We hereby consent to your filing of this opinion as an exhibit to the Registration Statement and to the reference to our firm under the captions "Legal Matters" contained in the Prospectus.

Dated: December 8, 2010

Very truly yours,

/s/ Dorsey & Whitney LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in this Registration Statement on Form S-1 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 and incorporated by reference in the Prospectus included in the Registration Statement No. 333-170503.

DELOITTE & TOUCHE LLP

Minneapolis, Minnesota
December 8, 2010