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

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**Form S-3**  
**REGISTRATION STATEMENT**  
*UNDER*  
**THE SECURITIES ACT OF 1933**

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**ENTEROMEDICS INC.**  
(Exact name of registrant as specified in its charter)

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**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

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

**2800 Patton Road**  
**St. Paul, Minnesota 55113**  
**(651) 634-3003**  
(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

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**Greg S. Lea**  
**Chief Financial Officer,**  
**Chief Operating Officer and Secretary**  
**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)

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*Copy to:*

**Timothy S. Hearn**  
**Dorsey & Whitney LLP**  
**50 South Sixth Street, Suite 1500**  
**Minneapolis, Minnesota 55402**  
**(612) 340-2600**

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**Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this registration statement.**

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

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, other than securities offered only in connection with dividend or interest reinvestment plans, 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.  333-195855

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 registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

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   
Non-accelerated filer  (Do not check if a smaller reporting company)

Accelerated filer   
Smaller reporting company

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**CALCULATION OF REGISTRATION FEE**

<b>Title of each class of securities to be registered</b>	<b>Amount to be registered</b>	<b>Proposed maximum price per Unit(1)</b>	<b>Proposed maximum aggregate offering price(1)</b>	<b>Amount of registration fee(2)</b>
Common Stock (\$0.01 par value per share) Warrants(3) Units(4)	\$15,000,000		\$15,000,000	\$1,743

- (1) The Registrant previously registered the securities at an aggregate initial offering price not to exceed \$75,000,000 on the Registration Statement Form S-3 (File No. 333-195855), which was declared effective on May 22, 2014. In accordance with Rule 462(b) promulgated under the Securities Act of 1933, as amended, and certain interpretations by the U.S. Securities and Exchange Commission, an additional amount of securities (\$15,000,000) having a proposed maximum aggregate offering price of no more than 20% of the remaining amount (\$75,000,000) of the offering price of the securities eligible to be sold under the above referenced Registration Statements is hereby registered.
- (2) The registration fee has been calculated in accordance with Rule 457(o) under the Securities Act.
- (3) Warrants may be combined with common stock registered under this registration statement and sold as units.
- (4) Units may consist of two or more of the securities registered under this registration statement and offered and sold together.

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**This registration statement shall become effective upon filing with the U.S. Securities and Exchange Commission in accordance with Rule 462(b) under the Securities Act.**

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## EXPLANATORY NOTE

We are filing this Registration Statement on Form S-3 with the U.S. Securities and Exchange Commission pursuant to Rule 462(b) and General Instruction IV of Form S-3, both as promulgated under the Securities Act of 1933, as amended. This Registration Statement on Form S-3 relates to the public offering of securities contemplated by the Registration Statement on Form S-3 (File No. 333-195855), originally filed by us on May 9, 2014. This Registration Statement on Form S-3 is being filed for the sole purpose of increasing the maximum aggregate offering price of the securities registered for sale by the Company. We are registering an additional amount of securities equal to 20% of the remaining \$75,000,000 of securities eligible to be sold under Registration Statement No. 333-195855, or \$15,000,000 of additional securities, for a total maximum in the aggregate of \$90,000,000.

The Commission declared the Registration Statement on Form S-3 (File No. 333-195855) effective on May 22, 2014. The contents of such registration statement are incorporated by reference into this registration statement pursuant to Rule 462(b) under the Securities Act.

## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of St. Paul, State of Minnesota, on June 30, 2015.

ENTEROMEDICS INC.

By: /s/ Mark B. Knudson  
Mark B. Knudson, Ph.D.  
President and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the date indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Mark B. Knudson</u> Mark B. Knudson, Ph.D.	President and Chief Executive Officer, Chairman and Director (principal executive officer)	June 30, 2015
<u>/s/ Greg S. Lea</u> Greg S. Lea	Chief Financial Officer and Chief Operating Officer (principal financial and accounting officer)	June 30, 2015
<u>*</u> Catherine Friedman	Director	June 30, 2015
<u>*</u> Carl Goldfischer, M.D.	Director	June 30, 2015
<u></u> Bobby I. Griffin	Director	June 30, 2015
<u>*</u> Anthony P. Jansz	Director	June 30, 2015
<u>*</u> Nicholas L. Teti, Jr.	Director	June 30, 2015
<u>*</u> Jon T. Tremmel	Director	June 30, 2015

\*By: /s/ Greg S. Lea  
Greg S. Lea  
(Attorney-in-fact for each person indicated)

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**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 (filed as Exhibit 24.1 to the Registration Statement on Form S-3 filed by EnteroMedics, Inc. on May 9, 2014).

\* Filed herewith.

[Letterhead of Dorsey &amp; Whitney LLP]

June 30, 2015

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

Re: Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to EnteroMedics Inc., a Delaware corporation (the "Company"), in connection with (i) a Registration Statement on Form S-3 (No. 333-195855), the prospectus included therein (the "Prospectus") and the related prospectus supplement(s) (each, a "Prospectus Supplement") (collectively, the "Initial Registration Statement") filed by the Company with the Securities and Exchange Commission (the "Commission") under the Securities Act of 1933, as amended (the "Securities Act"), relating to the offer and sale by the Company from time to time for an aggregate initial offering price of up to \$75,000,000 of (a) shares of its common stock, par value \$0.01 per share (the "Common Stock"); (b) shares of its preferred stock, par value \$0.01 per share (the "Preferred Stock" and, together with the Common Stock, the "Capital Stock"); (c) its debt securities, which may be senior debt securities (the "Senior Debt Securities") or subordinated debt securities (the "Subordinated Debt Securities" and, together with the Senior Debt Securities, the "Debt Securities"); (d) warrants to purchase Common Stock (the "Common Stock Warrants"), Preferred Stock (the "Preferred Stock Warrants") or Debt Securities (the "Debt Securities Warrants" and, together with the Common Stock Warrants and Preferred Stock Warrants, the "Securities Warrants") and (e) units consisting of any combination of Common Stock, Preferred Stock, Debt Securities and Securities Warrants, offered and sold together (the "Units"); and (ii) a second Registration Statement on Form S-3 (the "Rule 462(b) Registration Statement" and together with the Initial Registration Statement, the "Registration Statement") filed by the Company with the Commission pursuant to Rule 462(b) of the Securities Act, relating to the offer and sale by the Company of (a) shares of its Common Stock; (b) Common Stock Warrants and (c) Units for an aggregate offering price of up to \$15,000,000. In connection with the filing of a Prospectus Supplement, the Company will offer and sell units (the "Offering Units"), consisting of (i) either (a) one share of Common Stock or (b) one Series C pre-funded warrant to purchase one share of Common Stock; (ii) 0.50 of a Series A Warrant to purchase one share of Common Stock; and (iii) 0.50 of a Series B Warrant to purchase one share of Common Stock. The Offering Units will be sold pursuant to an Underwriting Agreement, dated June 30, 2015, between the Company and Canaccord Genuity, Inc. as representative of the underwriters named therein.

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 and 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 and 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.

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

1. The shares of Common Stock, when issued and delivered (i) against payment of the consideration therefor specified in the Underwriting Agreement or (ii) upon the valid exercise of the Warrants, will be validly issued, fully paid and non-assessable.
2. When the Warrants have been duly executed and delivered by the Company against payment of the consideration therefor specified in the Underwriting Agreement, such Warrants will constitute binding obligations of the Company.
3. When the Units have been duly executed and delivered by the Company against payment of the consideration therefor specified in the Underwriting Agreement, such Units will constitute binding obligations of the Company.

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

- a. Our opinions stated above are subject to the effect of any applicable bankruptcy, insolvency (including, without limitation, all laws relating to fraudulent transfers), reorganization, moratorium or other similar laws of general application relating to or affecting creditors' rights.
- b. Our opinions stated above 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 enforcement is considered in a proceeding in equity or at law).
- c. Our opinions stated above are subject to limitations regarding the availability of indemnification and contribution where such indemnification and contribution may be limited by applicable law or the application of principles of public policy.

- d. We express no opinion as to the enforceability of (i) provisions that relate to choice of law or forum selection or submission to jurisdiction (including, without limitation, any express or implied waiver of any objection to venue in any court or of any objection that a court is an inconvenient forum), (ii) waivers by the Company of any statutory or constitutional rights or remedies, (iii) terms which excuse any person or entity from liability for, or require the Company to indemnify such person or entity against, such person's or entity's negligence or willful misconduct, or (iv) obligations to pay any prepayment premium, default interest rate, early termination fee or other form of liquidated damages, if the payment of such premium, interest rate, fee or damages may be construed as unreasonable in relation to actual damages or disproportionate to actual damages suffered as a result of such prepayment, default or termination.
- e. We draw your attention to the fact that, under certain circumstances, the enforceability of terms to the effect that provisions may not be waived or modified except in writing may be limited.

Our opinions expressed above are limited to the Delaware General Corporation Law.

We hereby consent to the filing of this opinion as an exhibit to the Registration Statement and to the reference to our firm under the caption "Legal Matters" contained in the Prospectus constituting part of the Registration Statement. In giving this consent, we do not admit that we are within the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission thereunder.

Very truly yours,

/s/ Dorsey & Whitney LLP

TSH/JBA



**CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM**

We consent to the incorporation by reference in this Registration Statement on Form S-3 of our reports dated March 13, 2015, relating to the financial statements of EnteroMedics Inc. and subsidiary and the effectiveness of EnteroMedics Inc. and subsidiary's internal control over financial reporting appearing in the Annual Report on Form 10-K of EnteroMedics Inc. and subsidiary for the year ended December 31, 2014, and incorporated by reference in the Prospectus included in Registration Statement No. 333-195855.

/s/ Deloitte & Touche LLP  
Minneapolis, Minnesota  
June 30, 2015