

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 13G

INFORMATION TO BE INCLUDED IN STATEMENTS FILED PURSUANT
TO RULES 13d-1(b), (c) AND (d) AND AMENDMENTS THERETO FILED
PURSUANT TO 13d-2(b)

(Amendment No.)*

EnteroMedics Inc.
(Name of Issuer)

Common Stock, par value \$0.01 per share
(Title of Class of Securities)

29365M208
(CUSIP Number)

January 4, 2011
(Date of event which requires filing of this statement)

Check the appropriate box to designate the rule pursuant to which this Schedule 13G is filed:

- Rule 13d-1(b)
 Rule 13d-1(c)
 Rule 13d-1(d)

(Page 1 of 15 Pages)

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter the disclosures provided in a prior cover page.

The information required in the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

1	NAMES OF REPORTING PERSONS S.S. OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS Ardley Partners Fund II, L.P.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP**	(a) X (b) <input type="checkbox"/>
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER -0-
	6	SHARED VOTING POWER 628,000
	7	SOLE DISPOSITIVE POWER -0-
	8	SHARED DISPOSITIVE POWER 628,000
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 628,000	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES**	<input type="checkbox"/>
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 2.25%	
12	TYPE OF REPORTING PERSON** PN	

** SEE INSTRUCTIONS BEFORE FILLING OUT!

1	NAMES OF REPORTING PERSONS S.S. OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS Ardley Partners Institutional Fund, L.P.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP**	(a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER -0-
	6	SHARED VOTING POWER 552,200
	7	SOLE DISPOSITIVE POWER -0-
	8	SHARED DISPOSITIVE POWER 552,200
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 552,200	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES**	<input type="checkbox"/>
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 1.98%	
12	TYPE OF REPORTING PERSON** PN	

** SEE INSTRUCTIONS BEFORE FILLING OUT!

1	NAMES OF REPORTING PERSONS S.S. OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS Ardsley Offshore Fund Ltd.
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP** (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>
3	SEC USE ONLY
4	CITIZENSHIP OR PLACE OF ORGANIZATION British Virgin Islands
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5 SOLE VOTING POWER -0-
	6 SHARED VOTING POWER 63,400
	7 SOLE DISPOSITIVE POWER -0-
	8 SHARED DISPOSITIVE POWER 63,400
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 63,400
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES** <input type="checkbox"/>
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 0.23%
12	TYPE OF REPORTING PERSON** CO

** SEE INSTRUCTIONS BEFORE FILLING OUT!

1	NAMES OF REPORTING PERSONS S.S. OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS Ardley Advisory Partners	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP**	(a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION New York	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER -0-
	6	SHARED VOTING POWER 1,243,600
	7	SOLE DISPOSITIVE POWER -0-
	8	SHARED DISPOSITIVE POWER 1,243,600
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,243,600	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES**	<input type="checkbox"/>
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 4.46%	
12	TYPE OF REPORTING PERSON** PN; IA	

** SEE INSTRUCTIONS BEFORE FILLING OUT!

1	NAMES OF REPORTING PERSONS S.S. OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS Ardley Partners I	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP**	(a) X (b) 0
3	SEC USE ONLY	
4	CITIZENSHIP OR PLACE OF ORGANIZATION New York	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5	SOLE VOTING POWER -0-
	6	SHARED VOTING POWER 1,180,200
	7	SOLE DISPOSITIVE POWER -0-
	8	SHARED DISPOSITIVE POWER 1,180,200
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,180,200	
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES**	<input type="checkbox"/>
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 4.23%	
12	TYPE OF REPORTING PERSON** PN	

** SEE INSTRUCTIONS BEFORE FILLING OUT!

1	NAMES OF REPORTING PERSONS S.S. OR I.R.S. IDENTIFICATION NO. OF ABOVE PERSONS Philip J. Hempleman
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP** (a) <input checked="" type="checkbox"/> (b) <input type="checkbox"/>
3	SEC USE ONLY
4	CITIZENSHIP OR PLACE OF ORGANIZATION United States
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	5 SOLE VOTING POWER -0-
	6 SHARED VOTING POWER 1,403,600
	7 SOLE DISPOSITIVE POWER -0-
	8 SHARED DISPOSITIVE POWER 1,403,600
9	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 1,403,600
10	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (9) EXCLUDES CERTAIN SHARES** <input type="checkbox"/>
11	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (9) 5.03%
12	TYPE OF REPORTING PERSON** IN

** SEE INSTRUCTIONS BEFORE FILLING OUT!

Item 1 (a). NAME OF ISSUER.

The name of the issuer is EnteroMedics Inc. (the "Company").

Item 1(b). ADDRESS OF ISSUER'S PRINCIPAL EXECUTIVE OFFICES:

2800 Patton Road, St. Paul, Minnesota 55113

Item 2 (a). NAME OF PERSON FILING:

This statement is filed by:

- (i) Ardsley Partners Fund II, L.P., a Delaware limited partnership ("AP II"), with respect to the shares of Common Stock, par value \$0.01 per share ("Common Stock") directly owned by it;
- (ii) Ardsley Partners Institutional Fund, L.P., a Delaware limited partnership ("Ardsley Institutional"), with respect to the shares of Common Stock directly owned by it;
- (iii) Ardsley Offshore Fund Ltd., a British Virgin Islands corporation ("Ardsley Offshore"), with respect to the shares of Common Stock directly owned by it;
- (iv) Ardsley Advisory Partners, a New York general partnership ("Ardsley") which serves as Investment Manager of Ardsley Offshore and as Investment Adviser of AP II and Ardsley Institutional, with respect to the shares of Common Stock directly owned by Ardsley Offshore, AP II and Ardsley Institutional;
- (v) Ardsley Partners I, a New York general partnership ("Ardsley Partners") which serves as General Partner of AP II and Ardsley Institutional; and
- (vi) Philip J. Hempleman ("Mr. Hempleman"), the Managing Partner of Ardsley and Ardsley Partners, with respect to the shares of Common Stock owned by AP II, Ardsley Institutional and Ardsley Offshore and with respect to the shares of Common Stock owned by certain accounts managed by him directly.

The foregoing persons are hereinafter sometimes collectively referred to as the "Reporting Persons." Any disclosures herein with respect to persons other than the Reporting Persons are made on information and belief after making inquiry to the appropriate party.

Item 2(b). ADDRESS OF PRINCIPAL BUSINESS OFFICE OR, IF NONE, RESIDENCE:

The address of the business office of each of the Reporting Persons, with the exception of Ardsley Offshore is 262 Harbor Drive, Stamford, Connecticut 06902.

The address of the registered office of Ardsley Offshore is Romasco Place, Wickhams Cay 1, Roadtown Tortola, British Virgin Islands.

Item 2(c). CITIZENSHIP:

AP II and Ardsley Institutional are Delaware limited partnerships. Ardsley Offshore is a British Virgin Islands corporation. Ardsley and Ardsley Partners are New York general partnerships. Mr. Hempleman is a United States Citizen.

Item 2(d). TITLE OF CLASS OF SECURITIES:

Common Stock, par value \$0.01 per share

Item 2(e). CUSIP NUMBER:

29365M208

Item 3. IF THIS STATEMENT IS FILED PURSUANT TO RULES 13d-1(b) OR 13d-2(b) OR (c), CHECK WHETHER THE PERSON FILING IS A:

- (a) Broker or dealer registered under Section 15 of the Act,
- (b) Bank as defined in Section 3(a)(6) of the Act,
- (c) Insurance Company as defined in Section 3(a)(19) of the Act,
- (d) Investment Company registered under Section 8 of the Investment Company Act,
- (e) Investment Adviser registered under Section 203 of the Investment Advisers Act of 1940
- (f) Employee Benefit Plan, Pension Fund which is subject to the provisions of the Employee Retirement Income Security Act of 1974 or Endowment Fund; see Rule 13d-1(b)(1)(ii)(F)
- (g) Parent Holding Company or control person in accordance with Rule 13d-1(b)(ii)(G), see item 7
- (h) Group, in accordance with Rule 13d-1(b)(1)(ii)(H)

If this statement is filed pursuant to Rule 13d-1(c), check the box. [X]

Item 4. OWNERSHIP.

- A. Ardsley Partners Fund II, L.P.
- (a) Amount beneficially owned: 628,000
 - (b) Percent of class: 2.25%. (The percentages used herein and in the rest of Item 4 are calculated based upon the 27,892,388 shares of Common Stock issued and outstanding, which is the sum of: (i) 25,672,388 shares of the Company's Common Stock outstanding as of December 8, 2010, as set forth in the Company's Definitive Prospectus, as filed with the Securities and Exchange Commission on December 9, 2010; and (ii) 2,220,000 shares of the Company's Common Stock issued upon the exercise of warrants held by Craig-Hallum Capital Group LLC, the Company's underwriter, as set forth in the Company's Form 8-K, as of December 10, 2010, as filed with the Securities and Exchange Commission on December 10, 2010. In addition to the shares of Common Stock, Ardsley Partners Fund II, L.P., holds warrants to purchase 887,400 shares of Common Stock and Ardsley Offshore Fund, Ltd., holds warrants to purchase 112,600 shares of Common Stock, which are not exercisable until 181 days following December 8, 2010 (collectively, the "Warrants"). Pursuant to the terms of the Warrants, the Reporting Persons cannot exercise any of the Warrants for an amount of Common Stock that would result in such holder owning more than 19.99% of the Company's Common Stock outstanding after such exercise.)
 - (c)
 - (i) Sole power to vote or direct the vote: -0-
 - (ii) Shared power to vote or direct the vote: 628,000
 - (iii) Sole power to dispose or direct the disposition: -0-
 - (iv) Shared power to dispose or direct the disposition: 628,000
- B. Ardsley Partners Institutional Fund, L.P.
- (a) Amount beneficially owned: 552,200
 - (b) Percent of class: 1.98%
 - (c)
 - (i) Sole power to vote or direct the vote: -0-
 - (ii) Shared power to vote or direct the vote: 552,200
 - (iii) Sole power to dispose or direct the disposition: -0-
 - (iv) Shared power to dispose or direct the disposition: 552,200
- C. Ardsley Offshore Fund Ltd.
- (a) Amount beneficially owned: 63,400
 - (b) Percent of class: 0.23%
 - (c)
 - (i) Sole power to vote or direct the vote: -0-
 - (ii) Shared power to vote or direct the vote: 63,400
 - (iii) Sole power to dispose or direct the disposition: -0-
 - (iv) Shared power to dispose or direct the disposition: 63,400
- D. Ardsley Advisory Partners
- (a) Amount beneficially owned: 1,243,600
 - (b) Percent of class: 4.46%
 - (c)
 - (i) Sole power to vote or direct the vote: -0-
 - (ii) Shared power to vote or direct the vote: 1,243,600
 - (iii) Sole power to dispose or direct the disposition: -0-
 - (iv) Shared power to dispose or direct the disposition: 1,243,600
- E. Ardsley Partners I
- (a) Amount beneficially owned: 1,180,200
 - (b) Percent of class: 4.23%
 - (c)
 - (i) Sole power to vote or direct the vote: -0-
 - (ii) Shared power to vote or direct the vote: 1,180,200
 - (iii) Sole power to dispose or direct the disposition: -0-
 - (iv) Shared power to dispose or direct the disposition: 1,180,200
- F. Philip J. Hempleman
- (a) Amount beneficially owned: 1,403,600
 - (b) Percent of class: 5.03%
 - (c)
 - (i) Sole power to vote or direct the vote: -0-
 - (ii) Shared power to vote or direct the vote: 1,403,600
 - (iii) Sole power to dispose or direct the disposition: -0-
 - (iv) Shared power to dispose or direct the disposition: 1,403,600

Item 5. OWNERSHIP OF FIVE PERCENT OR LESS OF A CLASS.

Not applicable.

Item 6. OWNERSHIP OF MORE THAN FIVE PERCENT ON BEHALF OF ANOTHER PERSON.

Ardsley, the Investment Manager of Ardsley Offshore, has the power to vote and direct the disposition of the proceeds from the sale of the shares of Common Stock owned by Ardsley Offshore, and accordingly may be deemed the direct "beneficial owner" of such shares of Common Stock.

Ardsley, the Investment Adviser of AP II and Ardsley Institutional shares the power to vote and direct the disposition of the proceeds from the sale of the shares of Common Stock owned by AP II and Ardsley Institutional and, accordingly, may be deemed the direct "beneficial owner" of such shares of Common Stock.

Ardsley Partners, the General Partner of AP II and Ardsley Institutional shares the power to vote and direct the disposition of the shares of Common Stock owned by AP II and Ardsley Institutional and, accordingly, may be deemed the direct "beneficial owner" of such shares of Common Stock.

Mr. Hempleman is the Managing Partner of Ardsley and Ardsley Partners and in that capacity directs their operations and therefore may be deemed to be the indirect "beneficial owner" of the shares of Common Stock owned by Ardsley Offshore, AP II, Ardsley Institutional and certain accounts managed by him directly. Mr. Hempleman disclaims beneficial ownership of all of the shares of Common Stock reported in this 13G.

Item 7. IDENTIFICATION AND CLASSIFICATION OF THE SUBSIDIARY WHICH ACQUIRED THE SECURITY BEING REPORTED ON BY THE PARENT HOLDING COMPANY.

Not applicable.

Item 8. IDENTIFICATION AND CLASSIFICATION OF MEMBERS OF THE GROUP.

Not applicable.

Item 9. NOTICE OF DISSOLUTION OF GROUP.

Not applicable.

Item 10. CERTIFICATION.

Each of the Reporting Persons hereby makes the following certification:

By signing below each Reporting Person certifies that, to the best of its knowledge and belief, the securities referred to above were not acquired and are not held for the purpose of or with the effect of changing or influencing the control of the issuer of the securities and were not acquired and are not held in connection with or as a participant in any transaction having that purpose or effect.

SIGNATURES

After reasonable inquiry and to the best of our knowledge and belief, the undersigned certify that the information set forth in this statement is true, complete and correct.

DATED: January 14, 2011

ARDSLEY PARTNERS FUND II, L.P.
By: ARDSLEY PARTNERS I,
GENERAL PARTNER

By: /s/ Steve Napoli
Steve Napoli
General Partner

ARDSLEY PARTNERS INSTITUTIONAL FUND, L.P.
By: ARDSLEY PARTNERS I,
GENERAL PARTNER

By: /s/ Steve Napoli
Steve Napoli
General Partner

ARDSLEY OFFSHORE FUND LTD.

By: /s/ Steve Napoli
Steve Napoli
Director

ARDSLEY ADVISORY PARTNERS

By: /s/ Steve Napoli
Steve Napoli
Partner

ARDSLEY PARTNERS I

By: /s/ Steve Napoli
Steve Napoli
General Partner

PHILIP J. HEMPLEMAN, INDIVIDUALLY

By: /s/ Steve Napoli
Steve Napoli
*As an attorney in fact for
Philip J. Hempleman

* Evidence of Power of Attorney was filed with the Schedule 13G/A filed on February 15, 2006 (Acc-no: 0000902664-06-000895) and is incorporated by reference into this filing.

EXHIBIT 1**JOINT FILING AGREEMENT****PURSUANT TO RULE 13d-1(k)(1)**

The undersigned acknowledge and agree that the foregoing statement on Schedule 13G is filed on behalf of each of the undersigned and that all subsequent amendments to this statement on Schedule 13G shall be filed on behalf of each of the undersigned without the necessity of filing additional joint filing statements. The undersigned acknowledge that each shall be responsible for the timely filing of such amendments, and for the completeness and accuracy of the information concerning him, her or it contained herein, but shall not be responsible for the completeness and accuracy of the information concerning the other entities or persons, except to the extent that he, she or it knows or has reason to believe that such information is inaccurate.

DATED: January 14, 2011

ARDSLEY PARTNERS FUND II, L.P.

By: ARDSLEY PARTNERS I,
GENERAL PARTNER

By: /s/ Steve Napoli
Steve Napoli
General Partner

ARDSLEY PARTNERS INSTITUTIONAL FUND, L.P.

By: ARDSLEY PARTNERS I,
GENERAL PARTNER

By: /s/ Steve Napoli
Steve Napoli
General Partner

ARDSLEY OFFSHORE FUND LTD.

By: /s/ Steve Napoli
Steve Napoli
Director

ARDSLEY ADVISORY PARTNERS

By: /s/ Steve Napoli
Steve Napoli
Partner

ARDSLEY PARTNERS I

By: /s/ Steve Napoli
Steve Napoli
General Partner

PHILIP J. HEMPLEMAN, INDIVIDUALLY

By: /s/ Steve Napoli
Steve Napoli

*Attorney in fact for
Philip J. Hempleman

* Evidence of Power of Attorney was filed with the Schedule 13G/A filed on February 15, 2006 (Acc-no: 0000902664-06-000895) and is incorporated by reference into this filing.