
Prospectus Supplement No. 2

(to Prospectus dated April 27, 2007)

Filed Pursuant to Rule 424(b)(3)

Registration File No. 333-125942

CHEMBIO DIAGNOSTICS, INC.

18,610,710 SHARES OF COMMON STOCK

This Prospectus Supplement No. 2 supplements and amends the Prospectus dated April 27, 2007 (the “Prospectus”) and the Prospectus Supplement, dated December 26, 2007 (the “Prospectus Supplement”), to the Prospectus, all of which relate to the sale from time to time of up to 18,610,710 shares of our common stock by certain selling stockholders.

Due to a clerical error, the “Selling Security Holders” table was incorrect in the Prospectus Supplement.

The information in both the Prospectus and the Prospectus Supplement under the heading “Selling Security Holders” is amended and superseded by the information included herein.

This Prospectus Supplement No. 2 should be read in conjunction with, and delivered with, the Prospectus and the Prospectus Supplement and is qualified by reference to the Prospectus and the Prospectus Supplement.

Our common stock is listed on the OTC Bulletin Board under the symbol “CEMI.OB.”

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if the Prospectus, the Prospectus Supplement, or this Prospectus Supplement No. 2 is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this Prospectus Supplement No. 2 is December 26, 2007.

SELLING SECURITY HOLDERS

The named selling security holders set forth below are offering shares of the Company's common stock. The table below assumes the immediate exercise of all warrants to purchase common stock, without regard to other factors which may determine whether such exercises occur. These factors include but are not limited to the terms of the warrant agreements, and the specific exercise price of the securities held by such selling security holder and its relation to the market price. The selling security holders may from time to time offer and sell pursuant to this prospectus up to an aggregate of 15,720,961 shares of our common stock, plus any additional shares of common stock which they may receive at a later date pursuant to the anti-dilution provisions of certain warrants. The selling security holders may, from time to time, offer and sell any or all of the shares that are registered under this prospectus, although they are not obligated to do so.

The following table sets forth, to the Company's best knowledge and belief, with respect to the selling security holders:

- the number of shares of common stock beneficially owned as of December 26, 2007 and prior to the offering contemplated hereby;
- the number of shares of common stock eligible for resale and to be offered by each selling security holder pursuant to this prospectus;
- the number of shares owned by each selling security holder after the offering contemplated hereby assuming that all shares eligible for resale pursuant to this prospectus actually are sold;
- the percentage of the Company's total outstanding shares of common stock beneficially owned by each selling security holder after the offering contemplated hereby; and
- in notes to the table, additional information concerning the selling security holders including any NASD affiliations and any relationships, excluding non-executive employee and other non-material relationships, that a selling security holder had during the past three years with the registrant or any of its predecessors or affiliates.

| Selling security holders (C) | Number of Shares of Common Stock Owned Before Offering (A) | Number of Shares to be Offered (B) | Number of Shares Owned After Offering | Percentage of Shares of Common Stock Owned After Offering |
|--|---|--|---|---|
| Alpha Capital AG ^{2,3} | 1,894,024 | 660,000 | 1,894,024 | 3.07% |
| Bassett, Truman ¹ | 42,526 | 3,866 | 42,526 | 0.07% |
| Baum, Mark L. ² | 911,849 | 869,622 | 911,849 | 1.49% |
| Bell, Lon E. ² | 378,602 | 151,178 | 378,602 | 0.62% |
| Beller, Claudio ² | 129,254 | 11,470 | 129,254 | 0.21% |
| BioEquity Partners, Inc. ^{1,4} | 109,375 | 84,375 | 109,375 | 0.18% |
| Breitbart, Ted ^{1,5} | 14,208 | 14,208 | 14,208 | 0.02% |
| Bruce, Richard ¹ | 105,075 | 75 | 105,075 | 0.17% |
| Calamaro, Jean-Paul ² | 250,619 | 23,194 | 250,619 | 0.41% |
| Chrust, Steve ¹ | 11,605 | 11,605 | 11,605 | 0.02% |
| Clarke, John R. ^{1,6} | 23,909 | 23,909 | 23,909 | 0.04% |
| Crestview Capital Master, LLC ⁷ | 24,145,310 | 5,782,472 | 24,145,310 | 36.20% |
| Dabush, Ami ² | 460,336 | 45,871 | 460,336 | 0.76% |
| Daedalus Consulting, Inc. ⁸ | 71,926 | 71,926 | 71,926 | 0.12% |
| Diamond Deecembra ⁸ | 287,706 | 287,706 | 287,706 | 0.47% |
| DKR Soundshore Oasis Holding Fund, Ltd. ⁹ | 835,499 | 835,499 | 835,499 | 1.36% |
| Eckert, Christopher & Lynn ^{2,10} | 229,554 | 100,000 | 229,554 | 0.38% |
| Engel, Sam ¹ | 4,118 | 374 | 4,118 | 0.01% |
| Esfandiari, Javan ¹ | 754,580 | 2,007 | 754,580 | 1.24% |
| FAMALOM, LLC ⁸ | 359,634 | 359,634 | 359,634 | 0.59% |
| Feldman, Stephen ¹ | 1,868 | 187 | 1,868 | 0.00% |
| Fuchs, Ari ^{2,6} | 6,641 | 6,641 | 6,641 | 0.01% |
| Ginsberg, Mike ¹ | 2,375 | 216 | 2,375 | 0.00% |
| Glass, Marc ¹ | 1,883 | 1,883 | 1,883 | 0.00% |
| Goldberg, Jeffrey ^{1,11} | 27,875 | 27,875 | 27,875 | 0.05% |
| Greenblatt, Phil ¹ | 10,347 | 941 | 10,347 | 0.02% |
| Gregoretti, Gordan | 59,458 | 59,373 | 59,458 | 0.10% |
| Gressel, Daniel ^{1,12} | 6,346 | 6,346 | 6,346 | 0.01% |
| Guzikowski, Frank J. ¹ | 178,114 | 16,192 | 178,114 | 0.29% |
| H.C. Wainwright & Co. ^{1,13} | 53,715 | 53,715 | 53,715 | 0.09% |
| Haendler, Kurt ¹ | 91,621 | 45,998 | 91,621 | 0.15% |
| Haendler, Renata ¹ | 131,863 | 59,133 | 131,863 | 0.22% |
| Haendler, Tomas ^{2,14} | 143,726 | 86,257 | 143,726 | 0.24% |
| Haim, Eduardo ¹ | 7,115 | 647 | 7,115 | 0.01% |
| Hamblett, Michael ¹⁵ | 404,831 | 382,109 | 404,831 | 0.66% |
| Hanson, Andrew Merz ^{2,16} | 158,105 | 60,471 | 158,105 | 0.26% |
| | 567,305 | 160,961 | 567,305 | 0.94% |

| | | | | |
|---|-----------|-----------|-----------|--------|
| Ide, Bruce J. ^{2,17} | | | | |
| Jacob, Sam ¹ | 10,000 | 10,000 | 10,000 | 0.02% |
| Jacoby, Richard A. ² | 473,955 | 213,811 | 473,955 | 0.78% |
| Joffe, Wendy ² | 31,703 | 2,057 | 31,703 | 0.05% |
| Jordan, Bruce ¹⁸ | 65,418 | 7,761 | 65,418 | 0.11% |
| JP Turner ^{1,5} | 41,250 | 41,250 | 41,250 | 0.07% |
| Keskinen, Karen ¹ | 1,579 | 144 | 1,579 | 0.00% |
| Klaus, Elaine ¹ | 2,242 | 204 | 2,242 | 0.00% |
| Knasin, Paul and Ellen ² | 177,696 | 76,608 | 177,696 | 0.29% |
| Koch, Scott F. ^{1,6} | 158,400 | 158,400 | 158,400 | 0.26% |
| Kreger, Richard ¹⁸ | 1,090,404 | 540,315 | 1,090,404 | 1.78% |
| Kurzman Partners, LP ¹⁹ | 31,146 | 31,146 | 31,146 | 0.05% |
| Lankenau, Robert ¹ | 20,045 | 18,090 | 20,045 | 0.03% |
| Lanouette, Kevin P. | 54,768 | 23,749 | 54,768 | 0.09% |
| Larkin, Richard ² | 215,967 | 30,486 | 215,967 | 0.36% |
| Lawrence, Colin ¹ | 7,115 | 647 | 7,115 | 0.01% |
| Ledowitz, Bill ¹ | 6,471 | 647 | 6,471 | 0.01% |
| Lifshitz, Joshua ²⁰ | 33,928 | 12,716 | 33,928 | 0.06% |
| Little Gem Life Sciences Fund LLC ²¹ | 111,025 | 109,373 | 111,025 | 0.18% |
| Lyashchenko, Konstantin ¹ | 35,075 | 75 | 35,075 | 0.06% |
| Maloney & Company, LLC | 24,484 | 5,876 | 24,484 | 0.04% |
| Mayer-Wolf, Mike ¹ | 18,379 | 1,671 | 18,379 | 0.03% |
| McCarthy, Michael ¹ | 4,145 | 377 | 4,145 | 0.01% |
| Metasequoia, LLC ² | 50,082 | 20,000 | 50,082 | 0.08% |
| Midtown Partners & Co., LLC ²² | 261,122 | 56,824 | 261,122 | 0.43% |
| Millennium 3 Opportunity Fund, LLC ²³ | 4,006,610 | 1,557,376 | 4,006,610 | 6.45% |
| Moran, Sean | 37,000 | 35,624 | 37,000 | 0.06% |
| MSAS Trust ² | 429,085 | 45,282 | 429,085 | 0.71% |
| Nite Capital, LP | 584,508 | 534,374 | 584,508 | 0.96% |
| Joesph Nnorom | 6,000 | 6,000 | 6,000 | 0.01% |
| Pelossof, Avi ² | 411,238 | 34,650 | 411,238 | 0.68% |
| Pelossof, Elior ² | 113,577 | 45,354 | 113,577 | 0.19% |
| Phillips, Chris ⁸ | 79,173 | 34,192 | 79,173 | 0.13% |
| Poole, Colin ² | 78,135 | 75,589 | 78,135 | 0.13% |
| Poole, John G. ¹ | 68,365 | 6,215 | 68,365 | 0.11% |
| Raker, Gilbert ² | 45,354 | 45,354 | 45,354 | 0.07% |
| Reibman, Spencer ¹ | 257 | 257 | 257 | 0.00% |
| Rohan, J. Rory ¹⁸ | 360,212 | 166,489 | 360,212 | 0.60% |
| Rojas, Zilma ¹ | 15,000 | 500 | 15,000 | 0.02% |
| Sandler, J & S ¹ | 8,287 | 753 | 8,287 | 0.01% |
| Sandler, Mark and Lori ² | 19,305 | 15,094 | 19,305 | 0.03% |
| Schnipper, Steve ²⁴ | 62,379 | 19,955 | 62,379 | 0.10% |
| Schwartz, Eric ¹ | 5,496 | 500 | 5,496 | 0.01% |
| Seren, Stanley ¹ | 753 | 753 | 753 | 0.00% |
| Shapiro, Alex ¹ | 10,219 | 10,219 | 10,219 | 0.02% |
| Siderowf, Richard ^{2,25} | 53,221 | 28,377 | 53,221 | 0.09% |
| Siebert Best, Ellen ² | 37,322 | 2,140 | 37,322 | 0.06% |
| Siebert, Lawrence ²⁶ | 7,289,605 | - | 7,289,605 | 11.58% |
| Sive Paget & Reisel ¹ | 2,055 | 187 | 2,055 | 0.00% |
| Smith, Robin ^{1,27} | 34,000 | 34,000 | 34,000 | 0.06% |
| Spatacco, Jr., Anthony J. ²⁸ | 73,836 | 72,304 | 73,836 | 0.12% |
| Speer, Sandy ¹ | 86,002 | 349 | 86,002 | 0.14% |
| Spilka, R. Edward ^{2,29} | 369,277 | 100,000 | 369,277 | 0.61% |
| Starboard Capital Markets, LLC ³⁰ | 17,588 | 12,931 | 17,588 | 0.03% |
| Starobin Partners ^{1,5} | 90,000 | 90,000 | 90,000 | 0.15% |
| Straightline Capital Opportunities Fund I, LLC ² | 555,805 | 60,566 | 555,805 | 0.92% |
| Talesnick, Alan L. ^{2,31} | 295,349 | 94,930 | 295,349 | 0.49% |
| TCMP3 Partners | 294,350 | 23,507 | 294,350 | 0.49% |
| Thunderbird Global Corporation ^{2,32} | 85,710 | 45,638 | 85,710 | 0.14% |
| Total M.I.S., Inc. ² | 694,222 | 300,000 | 694,222 | 1.14% |
| Tyson, John ^{2,33} | 16,250 | 16,250 | 16,250 | 0.03% |
| Vicis Capital Master Fund ^{2,34} | 4,565,029 | 452,830 | 4,565,029 | 7.54% |
| Wachs, Mark ² | 2,916 | 2,281 | 2,916 | 0.00% |
| Weiss, Gunther ¹ | 28,334 | 2,576 | 28,334 | 0.05% |
| Westbury Diagnostics, Inc. ² | 186,832 | 77,403 | 186,832 | 0.31% |

(A) Includes shares underlying warrants and/or options held by the selling security holder that are covered by this prospectus, including any warrants and/or options that, due to contractual restrictions, may not be exercisable within 60 days of the date of this prospectus..

(B) The number of shares of common stock to be sold assumes that the selling security holder elects to sell all the shares of common stock held by the selling security holder that are covered by this prospectus.

(C) It is our understanding that any selling security holder that is an affiliate of a broker-dealer purchased the securities offered hereunder in the ordinary course of business, and at the time of the purchase, had no agreements or understanding to distribute the securities.

[1] The sale of all of these shares is currently registered under Chembio's Registration Statement on Form SB-2 that became effective with the SEC on November 4, 2004. The sale of these shares also is included in this Prospectus so that Chembio can make any future amendments for the Registration Statement of which this Prospectus is a part, together with amendments of the 2004 Registration Statement in a single joint prospectus.

[2] The sale of all of these shares, except for less than 235,000 that represent dividend shares, currently is registered under Chembio's Registration Statement on Form SB-2 that became effective with the SEC on November 4, 2004. The sale of these shares also is included in this Prospectus so that Chembio can make any future amendments for the Registration Statement of which this Prospectus is a part, together with amendments of the 2004 Registration Statement, in a single joint prospectus.

[3] Konrad Ackerman has ultimate control over Alpha Capital AG and the shares held by Alpha Capital AG.

[4] Provides marketing consulting services to the Company.

[5] Affiliated with Wellfleet Partners.

[6] Affiliated with HC Wainwright, investment banking services.

[7] Affiliated with Dillion Capital, a NASD member. Robert Hoyt has ultimate control over Crestview Capital Master, LLC and the shares held by Crestview Capital Master, LLC.

[8] Affiliated with Midtown Partners & Co., LLC, investment banking services.

[9] DKR SoundShore Oasis Holding Fund Ltd. (the "Fund") is a master fund in a master-feeder structure. The Fund's investment manager is DKR Oasis Management Company LP (the "Investment Manager"). Pursuant to an investment management agreement among the Fund, the feeder funds and the Investment Manager, the Investment Manager has the authority to do any and all acts on behalf of the Fund, including voting any shares held by the Fund. Mr. Seth Fischer is the managing partner of Oasis Management Holdings LLC, one of the general partners of the Investment Manager. Mr. Fischer has ultimate responsibility for trading with respect to the Fund. Mr. Fischer disclaims beneficial ownership of the shares.

[10] Christopher Eckert is an employee of Smith Barney.

[11] Affiliated with Wellfleet Partners and Starobin Partners, investment banking services.

[12] Former Director of CDS.

[13] NASD member.

[14] Former President of CDS and Director.

[15] Employee of Starboard Capital Markets, LLC, investment banking services.

[16] Assisted the Company in fundraising.

[17] Former Director of CDS.

[18] Employee of Midtown Partners & Co., LLC, investment banking services.

[19] Affiliated with Needham & Company, investment banking services, until February 4, 2005.

[20] Except for 26,393 shares, the sale of these shares is registered under Chembio's Registration Statement on Form SB-2 that became effective with the SEC on November 4, 2004. The sale of these shares also is included in this Prospectus so that Chembio can make any future amendments for the Registration Statement of which this Prospectus is a part, together with amendments of the 2004 Registration Statement, in a single joint prospectus.

[21] Except for 81,582 shares, the sale of these shares is registered under Chembio's Registration Statement on Form SB-2 that became effective with the SEC on November 4, 2004. The sale of these shares also is included in this Prospectus so that Chembio can make any future amendments for the Registration Statement of which this Prospectus is a part, together with amendments of the 2004 Registration Statement, in a single joint prospectus.

[22] NASD member, assisted the Company in fundraising.

[23] Fred Fraenkel and Udi Toledano have ultimate control over Millennium 3 Opportunity Fund and the shares held by Millennium 3 Opportunity Fund.

[24] Except for 51,578 shares, the sale of these shares is registered under Chembio's Registration Statement on Form SB-2 that became effective with the SEC on November 4, 2004. The sale of these shares also is included in this Prospectus so that Chembio can make any future amendments for the Registration Statement of which this Prospectus is a part, together with amendments of the 2004 Registration Statement, in a single joint prospectus.

[25] Registered sales representative with RBC Dain Rauscher.

[26] Except for 663,078 shares, the sale of these shares is registered under Chembio's Registration Statement on Form SB-2 that became effective with the SEC on November 4, 2004. The sale of these shares also is included in this Prospectus so that Chembio can make any future amendments for the Registration Statement of which this Prospectus is a part, together with amendments of the 2004 Registration Statement, in a single joint prospectus.

[27] Provided marketing consulting services; affiliated with Wellfleet Partners and Starobin Partners.

[28] Assisted the Company in fundraising; employee of Starboard Capital Markets LLC.

[29] Stockholder of Lehman Brothers.

[30] NASD member.

[31] Partner at Patton Boggs LLP, our legal counsel.

[32] WSITE International Foundation ("WSITE") is the ultimate beneficiary of Thunderbird Global Corporation. Gustavo Montilla is the Chairman of WSITE International Foundation and controls the daily affairs of WSITE.

[33] Provides marketing consulting services.

[34] Vicis Capital Master Fund's investment manager is Vicis Capital, LLC. Shad Stastney, John Succo, and Sky Lucas have the ultimate control over the shares held by Vicis Capital Master Fund.