
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-8

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

MACROPORE BIOSURGERY, INC.

(Exact Name of Registrant as Specified in its Charter)

Delaware

(State or Other Jurisdiction
of Incorporation or Organization)

33-0827593

(I.R.S. Employer Identification No.)

6740 Top Gun Street

San Diego, California 92121

(Address of Principal Executive Offices)

2004 EQUITY INCENTIVE PLAN

(Full Title of the Plan)

Christopher J. Calhoun

Chief Executive Officer and Vice-Chairman of the Board

6740 Top Gun Street

San Diego, California 92121

Telephone: (858) 458-0900

(Name and Address of Agent For Service)

Copy to:

Hayden J. Trubitt, Esq.

HELLER EHRMAN WHITE & MCAULIFFE LLP

4350 La Jolla Village Drive, 7th Floor

San Diego, California 92122-1246

Telephone: (858) 450-8400

Facsimile: (858) 450-8499

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered(1)	Proposed Maximum Offering Price per Share(2)	Proposed Maximum Aggregate Offering Price(2)	Amount of Registration Fee
Common Stock, par value \$0.001 per share	3,000,000	\$3.0248	\$9,074,400	\$1,068.06

- (1) This registration statement shall also cover any additional shares of the registrant's common stock that become issuable by reason of any stock dividend, stock split, recapitalization or other similar transaction effected without the registrant's receipt of consideration that results in an increase in the number of the registrant's outstanding shares of common stock.
- (2) Estimated solely for the purpose of computing the registration fee pursuant to Rule 457(h) under the Securities Act of 1933 and based on the average of the high and low sale prices of the registrant's common stock on February 3, 2005, as reported on the Frankfurt Stock Exchange, which average was 2.32 Euros, or \$3.0248 per share, based on the exchange rate in effect as of such date.
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Part I

INFORMATION REQUIRED IN THE SECTION 10(a) PROSPECTUS

The documents containing the information specified in Part I will be sent or given to employees as specified by Rule 428(b)(1). Such documents are not being filed with the Securities and Exchange Commission (the "Commission") either as part of this registration statement or as prospectuses or prospectus supplements pursuant to Rule 424. Such documents and the documents incorporated by reference in this Registration Statement pursuant to Item 3 of Part II of this registration statement, taken together, constitute a prospectus that meets the requirements of Section 10(a) of the Securities Act.

Part II

INFORMATION REQUIRED IN THE REGISTRATION STATEMENT

Item 3. Incorporation of Documents by Reference.

The following documents, which we have filed with or furnished to the Securities and Exchange Commission (the "Commission"), are incorporated herein by reference and made a part hereof:

- (a) Our annual report on Form 10-K, for the fiscal year ended December 31, 2003, filed with the Commission on March 30, 2004;
- (b) Our quarterly report on Form 10-Q for the quarter ended March 31, 2004, filed with the Commission on May 17, 2004;
- (c) Our quarterly report on Form 10-Q for the quarter ended June 30, 2004, filed with the Commission on August 16, 2004;
- (d) Our quarterly report on Form 10-Q for the quarter ended September 30, 2004, filed with the Commission on November 15, 2004;
- (e) Our current report on Form 8-K filed with the Commission on January 22, 2004;
- (f) Our current report on Form 8-K filed with the Commission on March 30, 2004;
- (g) Our current report on Form 8-K filed with the Commission on May 14, 2004;
- (h) Our current report on Form 8-K filed with the Commission on May 28, 2004;
- (i) Our current report on Form 8-K filed with the Commission on July 19, 2004;
- (j) Our current report on Form 8-K filed with the Commission on August 16, 2004;
- (k) Our current report on Form 8-K filed with the Commission on August 27, 2004;
- (l) Our current report on Form 8-K filed with the Commission on November 15, 2004; and
- (m) The description of our common stock contained in our registration statement on Form 10, initially filed with the Commission on March 30, 2001, as amended on May 16, 2001, June 1, 2001 and July 16, 2001, and any additional amendments or reports filed for the purpose of updating such description.

All documents subsequently filed by us pursuant to Sections 13(a), 13(c), 14 and 15(d) of the Securities Exchange Act of 1934 (the "Exchange Act"), prior to the filing of a post-effective amendment to this registration statement indicating that all securities offered hereby have been sold or deregistering all securities then remaining unsold, shall be deemed to be incorporated by reference herein and to be a part hereof from the date of filing of such documents. Any statement contained herein or in any document incorporated or deemed to be incorporated by reference herein shall be

deemed to be modified or superseded for purposes of this registration statement to the extent that a statement contained herein or in any other subsequently filed document which also is or is deemed to be incorporated by reference herein modifies or supersedes such statement. Any such statement so modified or superseded shall not be deemed to constitute a part of this registration statement, except as so modified or superseded.

Item 4. Description of Securities.

Not applicable.

Item 5. Interests of Named Experts and Counsel.

Not applicable.

Item 6. Indemnification of Directors and Officers.

Section 145 of the Delaware General Corporation Law permits us to indemnify our directors, officers, employees or agents under certain conditions and subject to certain limitations. Section 145 of the Delaware General Corporation Law also permits us to purchase and maintain insurance on behalf of our directors, officers, employees or agents against any liability asserted against them and incurred by them arising out of their capacity or status as our directors, officers, employees or agents whether or not we would have the power to indemnify them against such liability under the provisions of Section 145 of the Delaware General Corporation Law.

Our Amended and Restated Certificate of Incorporation reduces the liability of our directors to us and our stockholders for monetary damages for any breach of their fiduciary duties as our directors to the fullest extent permitted by the Delaware General Corporation Law. Our Amended and Restated Certificate of Incorporation and our Amended and Restated Bylaws further provide for indemnification of our directors, officers, employees and agents to the fullest extent permitted by the Delaware General Corporation Law.

Item 7. Exemption from Registration Claimed.

Not applicable.

Item 8. Exhibits.

Exhibit No.	Description
4.1	Amended and Restated Certificate of Incorporation(1)
4.2	Amended and Restated Bylaws(2)
4.3	Rights Agreement, dated as of May 19, 2003, with Computershare Trust Company, Inc. as Rights Agent, which includes: as Exhibit A thereto, the Form of Certificate of Designation, Preferences and Rights of our Series RP Preferred Stock; as Exhibit B thereto, the Form of Right Certificate; and, as Exhibit C thereto, the Summary of Rights to Purchase our Series RP Preferred Stock(3)
5.1	Opinion of Heller Ehrman White & McAuliffe LLP*
23.1	Consent of Independent Registered Public Accounting Firm, KPMG LLP*
23.2	Consent of Heller Ehrman White & McAuliffe LLP (filed as a part of Exhibit 5.1)*
24.1	Power of Attorney (included in the signature page to this registration statement)*
99.1	2004 Equity Incentive Plan(4)
99.2	Form of Notice of Stock Options Grant Relating to the 2004 Equity Incentive Plan(5)
99.3	Form of Options Exercise and Stock Purchase Agreement Relating to the 2004 Equity Incentive Plan(5)

* Filed herewith.

- (1) This exhibit was filed as a part of, and is hereby incorporated by reference to our quarterly report on Form 10-Q, filed with the Commission on August 13, 2002.
- (2) This exhibit was filed as a part of, and is hereby incorporated by reference to our quarterly report on Form 10-Q for the quarter ended June 30, 2003, filed with the Commission on August 14, 2003.
- (3) This exhibit was filed as a part of, and is hereby incorporated by reference to our registration statement on Form 8-A, filed with the Commission on May 30, 2003.
- (4) This exhibit was filed as part of, and is hereby incorporated by reference to our current report on Form 8-K, filed with the Commission on August 27, 2004.
- (5) This exhibit was filed as part of, and is hereby incorporated by reference to our quarterly report on Form 10-Q for the quarter ended September 30, 2004, filed with the Commission on November 15, 2004.

Item 9. Undertakings.

(a) The undersigned registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933 (the "Securities Act");
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in aggregate, represent a fundamental change in the information set

forth in this registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

- (iii) To include any material information with respect to the plan of distribution not previously disclosed in this registration statement or any material change to such information in the registration statement;

provided, however, that the undertakings set forth in paragraphs (a)(1)(i) and (a)(1)(ii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in periodic reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in this registration statement;

- (2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof; and
 - (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- (b) The undersigned registrant hereby further undertakes that, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of any employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in this registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at the time shall be deemed to be the initial *bona fide* offering thereof.
- (c) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the provisions described in Item 6, or otherwise, the registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

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February 10, 2005

MacroPore Biosurgery, Inc.
6740 Top Gun Street
San Diego, California 92121

Re: MacroPore Biosurgery, Inc. Registration Statement on Form S-8 for 3,000,000 Shares of Common Stock Issuable Under the 2004 Equity Incentive Plan

Ladies and Gentlemen:

We have acted as counsel to MacroPore Biosurgery, Inc., a Delaware corporation (the "Company"), in connection with the registration statement on Form S-8 to be filed with the Securities and Exchange Commission on or about February 10, 2005 (the "Registration Statement"), for the purpose of registering under the Securities Act of 1933, as amended (the "Act"), 3,000,000 shares of the Company's Common Stock (the "Shares"). The Shares are issuable under the Company's 2004 Equity Incentive Plan (the "Plan").

This opinion is being furnished in accordance with the requirements of Item 8 of Form S-8 and Item 601(b)(5)(i) of Regulation S-K.

In connection with this opinion, we have assumed the authenticity of all records, documents and instruments submitted to us as originals, the genuineness of all signatures, the legal capacity of natural persons and the conformity to the originals of all records, documents and instruments submitted to us as copies.

We have reviewed the Company's charter documents and the corporate proceedings taken by the Company in connection with the establishment of the Plan. Based on such review, we are of the opinion that if, as and when the Shares have been issued and sold (and the consideration therefor received) pursuant to (a) the provisions of option agreements duly authorized under the Plan and in accordance with the Registration Statement, or (b) duly authorized direct stock issuances in accordance with the Plan and in accordance with the Registration Statement, such Shares will be duly authorized, legally issued, fully paid and nonassessable.

This opinion is limited to the federal laws of the United States of America and the General Corporation Law of the State of Delaware. We disclaim any opinion as to the laws of any other jurisdiction. We further disclaim any opinion as to any other statute, rule, regulation, ordinance, order or other promulgation of any other jurisdiction or any regional or local governmental body or as to any related judicial or administrative opinion.

Heller Ehrman White & McAuliffe LLP 4350 La Jolla Village Drive, 7th Floor San Diego, CA 92122-1246 www.hewm.com

San Francisco Silicon Valley Los Angeles **San Diego** Seattle Portland Anchorage New York Washington D.C. Madison, WI
Hong Kong Singapore *Affiliated Offices:* Milan Paris Rome

We consent to the filing of this opinion letter as Exhibit 5.1 to the Registration Statement. In giving this consent, we do not thereby admit that we are within the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Securities and Exchange Commission promulgated thereunder, or Item 509 of Regulation S-K.

This opinion is rendered to you in connection with the Registration Statement and is solely for your benefit. This opinion may not be relied upon by you for any other purpose, or relied upon by any other person, firm, corporation or other entity for any purpose, without our prior written consent. This opinion letter is rendered as of the date first written above and we disclaim any obligation to advise you of facts, circumstances, events or developments which hereafter may be brought to our attention and which may alter, affect or modify the opinion expressed herein.

Very truly yours,

/s/ Heller Ehrman White & McAuliffe LLP

Heller Ehrman White & McAuliffe LLP

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[EXHIBIT 5.1](#)

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors
MacroPore Biosurgery, Inc.:

We consent to the use of our report dated February 20, 2004, with respect to the consolidated balance sheets of MacroPore Biosurgery, Inc. as of December 31, 2003 and 2002, and the related consolidated statements of operations and comprehensive income (loss), stockholders' equity and cash flows for the years then ended, and the related financial statement schedule, which report appears in the December 31, 2003, annual report on Form 10-K of MacroPore Biosurgery, Inc., incorporated herein by reference. Our report refers to the Company deriving a substantial portion of its revenues from a related party.

/s/ KPMG LLP

San Diego, California
February 7, 2005

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[EXHIBIT 23.1](#)

[CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM](#)