

(incorporation or organization) Classification Code Number) Identification No.)

**62 Fourth Avenue
Waltham, Massachusetts 02451
(781) 890-9989**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

**Shai N. Gozani, M.D., Ph.D.
Chief Executive Officer**

NeuroMetrix, Inc.
62 Fourth Avenue
Waltham, Massachusetts 02451
(781) 890-9989

(Name, address, including zip code, and telephone number, including area code, of agent for service)

With copies to:

Jonathan L. Kravetz, Esq.

Megan N. Gates, Esq.

Mintz, Levin, Cohn, Ferris,

Glovsky and Popeo, P.C.

One Financial Center

Boston, MA 02111

Telephone: (617) 542-6000

Fax: (617) 542-2241

Kyle Guse, Esq.

Baker Botts, LLP

620 Hansen Way

Palo Alto, CA
94304

Telephone: (650)
739-7555

Fax: (650)
739-7655

Approximate date of commencement of proposed sale to public: As soon as practicable after this Registration Statement becomes effective.

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

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. **x 333-178165**

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 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 Smaller reporting company
(Do not check if a smaller reporting company)

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered(1)

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	Proposed Maximum Aggregate Offering Price(2)	Amount of Registration Fee(3)
Units consisting of Common Stock and Warrants	\$—	\$ —
Common Stock Underlying Units(4)(5)	—	—
Warrants Underlying Units(5)	—	—
Common stock issuable upon exercise of Warrants in the Units(4)	787,500	90.25
Warrants issued to Placement Agent(5)	—	—
Common stock issuable upon exercise of placement agent warrants(4)	—	—
Total	\$ 787,500	\$ 90.25

The securities registered also include such indeterminate amounts and numbers of shares of common stock issuable (1) to cover additional securities that may be offered or issued to prevent dilution resulting stock splits, stock dividends or similar transactions.

(2) Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(o) under the Securities Act of 1933.

Calculated pursuant to Rule 457(o) based on an estimate of the proposed maximum aggregate offering price. An (3) aggregate amount of \$16,406,250 was registered under Registration Statement No. 333-178165, in connection with which a filing fee of \$1,880.16 has been paid.

Pursuant to a shareholder rights agreement, dated as of March 7, 2007, between the Company and American Stock (4) Transfer & Trust Company, as amended, each share of common stock has an attached right to purchase our Series A Junior Cumulative Preferred Stock, which rights are not currently exercisable.

(5) No fee required pursuant to Rule 457 under the Securities Act of 1933.

THIS REGISTRATION STATEMENT SHALL BECOME EFFECTIVE UPON FILING WITH THE COMMISSION IN ACCORDANCE WITH RULE 462(b) UNDER THE SECURITIES ACT OF 1933, AS AMENDED.

EXPLANATORY NOTE AND

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

This Registration Statement on Form S-1 is being filed with respect to the registration of additional securities of NeuroMetrix, Inc., a Delaware corporation, pursuant to Rule 462(b) under the Securities Act of 1933, as amended. This Registration Statement includes the registration statement facing page, this page, the signature pages, an exhibit index, an opinion of counsel regarding the legality of the securities being registered and a related consent and accountant's consent. This Registration Statement relates to the Registrant's Registration Statement on Form S-1 (Registration No. 333-178165), initially filed by the Registrant on November 23, 2011, as subsequently amended on January 13, 2012 and January 31, 2012 and declared effective by the Securities and Exchange Commission on February 7, 2012. The Registrant is filing this Registration Statement for the sole purpose of increasing the proposed maximum aggregate offering price of shares of common stock underlying warrants to be issued in such offering by \$787,500. Pursuant to Rule 462(b), the contents of the Registration Statement on Form S-1 (Registration No. 333-178165), including the exhibits and the power of attorney thereto, are incorporated by reference into this Registration Statement.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 16. Exhibits and Financial Statement Schedules.

All exhibits filed with or incorporated by reference in the Registration Statement on Form S-1 (Registration No. 333-178165) are incorporated by reference into, and shall be deemed a part of, this Registration Statement, and the following additional exhibits are filed herewith:

Exhibit

NumberDescription of Exhibit

- | | |
|------|---|
| 5.1 | Opinion of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C., counsel to the Registrant, with respect to the legality of the securities being registered. |
| 23.1 | Consent of PricewaterhouseCoopers LLP, an independent registered public accounting firm. |
| 23.2 | Consent of Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. (included in Exhibit 5.1). |
| 24.1 | Power of Attorney (incorporated by reference to the Registration Statement on Form S-1 of the Registrant, Registration No. 333-178165). |

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this Registration Statement on Form S-1 to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Waltham, Commonwealth of Massachusetts, on February 7, 2012.

NEUROMETRIX, INC.

By: /s/ Shai N. Gozani, M.D., Ph.D.
 Shai N. Gozani, M.D., Ph.D.
 President and Chief Executive Officer

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement on Form S-1 has been signed by the following persons in the capacities and on the date indicated.

Signature	Title	Date
By: /s/ Shai N. Gozani, M.D., Ph.D. Shai N. Gozani, M.D., Ph.D.	Chairman, President and Chief Executive Officer (Principal Executive Officer)	February 7, 2012
By: /s/ Thomas T. Higgins Thomas T. Higgins	Senior Vice President, Chief Financial Officer and Treasurer (Principal Financial Officer and Principal Accounting Officer)	February 7, 2012
By: * David E. Goodman, M.D.	Director	February 7, 2012
By: * Allen J. Hinkle M.D.	Director	February 7, 2012
By: * Nancy E. Katz	Director	February 7, 2012
By: * Charles R. LaMantia	Director	February 7, 2012
By: * Timothy R. Surgenor	Director	February 7, 2012
*By: /s/ Thomas T. Higgins Thomas T. Higgins, Attorney-in-fact		February 7, 2012

EXHIBIT INDEX

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