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

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**FORM S-1**  
**REGISTRATION STATEMENT**  
*UNDER*  
**THE SECURITIES ACT OF 1933**

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**Spark Therapeutics, Inc.**  
(Exact Name of Registrant as Specified in its Charter)

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**Delaware**  
(State or Other Jurisdiction of  
Incorporation or Organization)

**2836**  
(Primary Standard Industrial  
Classification Code Number)

**46-2654405**  
(I.R.S. Employer  
Identification Number)

**3737 Market Street**  
**Suite 1300**  
**Philadelphia, PA 19104**  
**(888) 772-7560**

(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

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**Jeffrey D. Marrazzo**  
**Chief Executive Officer**  
**Spark Therapeutics, Inc.**  
**3737 Market Street**  
**Suite 1300**  
**Philadelphia, PA 19104**

(888) 772-7560 (Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent for Service)

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**Steven D. Singer, Esq.**  
**Lia Der Marderosian, Esq.**  
**Wilmer Cutler Pickering Hale and Dorr LLP**  
**7 World Trade Center, 250 Greenwich Street**  
**New York, NY 10007**  
**Telephone: (212) 230-8800**

**Joseph W. La Barge, Esq.**  
**General Counsel**  
**Spark Therapeutics, Inc.**  
**3501 Civic Center Boulevard**  
**Philadelphia, PA 19104**  
**Telephone: (888) 772-7560**

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**Richard Truesdell, Jr., Esq.**  
**Sophia Hudson, Esq.**  
**Davis Polk & Wardwell LLP**  
**450 Lexington Avenue**  
**New York, NY 10017**  
**Telephone: (212) 450-4000**

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

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, check the following box.

If this Form is filed to register additional securities for an offering pursuant Rule 462(b) 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.  333-201318

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 the 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  (Do not check if a smaller reporting company)

Smaller reporting company

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**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, \$0.001 par value per share	575,000 shares	\$23.00	\$13,225,000	\$1,537

(1) Includes 75,000 shares of common stock the underwriters have the option to purchase.

(2) Calculated in accordance with Rule 457(a) of the Securities Act of 1933 solely on the basis of \$23.00, the initial public offering price set forth on the cover page of the Registrant's Prospectus dated January 29, 2015 relating to its initial public offering pursuant to the Company's Registration Statement on Form S-1 (File No. 333-201318).

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**EXPLANATORY NOTE AND INCORPORATION BY REFERENCE**

This registration statement is being filed with respect to the registration of additional shares of common stock, par value \$0.001 per share, of Spark Therapeutics, Inc., a Delaware corporation, pursuant to Rule 462(b) under the Securities Act of 1933, as amended. The contents of the earlier registration statement on Form S-1 (File No. 333-201318), which was declared effective by the Commission on January 29, 2015, are incorporated in this registration statement by reference.

The required opinions and consents are listed on an Exhibit Index attached hereto and filed herewith.

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the Registrant has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Philadelphia, Commonwealth of Pennsylvania, on this 29<sup>th</sup> day of January, 2015.

Spark Therapeutics, Inc.

By: /s/ Jeffrey D. Marrazzo

Jeffrey D. Marrazzo  
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 held on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Jeffrey D. Marrazzo</u> Jeffrey D. Marrazzo	Director and Chief Executive Officer (Principal Executive Officer)	January 29, 2015
<u>/s/ Stephen W. Webster</u> Stephen W. Webster	Chief Financial Officer (Principal Financial and Accounting Officer)	January 29, 2015
<u>*</u> Katherine A. High, M.D.	Director	January 29, 2015
<u>*</u> Steven M. Altschuler, M.D.	Director	January 29, 2015
<u>*</u> A. Lorris Betz, M.D., Ph.D.	Director	January 29, 2015
<u>*</u> Lars Ekman, M.D., Ph.D.	Director	January 29, 2015
<u>*</u> Anand Mehra, M.D.	Director	January 29, 2015
<u>*</u> Vincent Milano	Director	January 29, 2015
<u>*</u> Elliott Sigal, M.D., Ph.D.	Director	January 29, 2015
<u>* By: /s/ Jeffrey D. Marrazzo</u> Jeffrey D. Marrazzo Attorney-in-Fact		

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**EXHIBIT INDEX**

<u>Exhibit No.</u>	<u>Description</u>
5	Opinion of WilmerHale
23.1	Consent of KPMG LLP
23.2	Consent of WilmerHale (included in Exhibit 5)
24*	Powers of Attorney

\* Filed as Exhibits 24.1 and 24.2 to the Registrant's Registration Statement on Form S-1 (File No. 333-201318) filed with the Commission on December 30, 2014 and January 20, 2015, respectively.

WILMERHALE

+1 212 230-8800 (t)  
+1 212 230 8888 (f)

January 29, 2015

Spark Therapeutics, Inc.  
3737 Market Street  
Suite 1300  
Philadelphia, PA 19104

Re: 462(b) Registration Statement on Form S-1

Ladies and Gentlemen:

This opinion is furnished to you in connection with a Registration Statement on Form S-1 (the "**Registration Statement**") filed with the Securities and Exchange Commission (the "**Commission**") under the Securities Act of 1933, as amended (the "**Securities Act**"), pursuant to Rule 462(b) of the Securities Act, for the registration of 575,000 shares of Common Stock, \$0.001 par value per share (the "**Shares**"), of Spark Therapeutics, Inc., a Delaware corporation (the "**Company**"), including 75,000 Shares issuable upon exercise of an over-allotment option granted by the Company.

The Shares are to be sold by the Company pursuant to an underwriting agreement (the "**Underwriting Agreement**") to be entered into by and among the Company and J. P. Morgan Securities LLC and Credit Suisse Securities (USA) LLC, as representatives of the several underwriters named in *Schedule I* thereto, the form of which has been filed as Exhibit 1.1 to the Registration Statement.

We are acting as counsel for the Company in connection with the issue and sale by the Company of the Shares. We have examined signed copies of the Registration Statement as filed with the Commission. We have also examined and relied upon the Underwriting Agreement, minutes of meetings and actions of the stockholders and the Board of Directors of the Company as provided to us by the Company, stock record books of the Company as provided to us by the Company, the Certificate of Incorporation and By-Laws of the Company, each as restated and/or amended to date, and such other documents as we have deemed necessary for purposes of rendering the opinions hereinafter set forth.

In our examination of the foregoing documents, we have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity to original documents of all documents submitted to us as copies, the authenticity of the originals of such latter documents and the legal competence of all signatories to such documents.

Wilmer Cutler Pickering Hale and Dorr LLP, 7 World Trade Center, 250 Greenwich Street, New York, New York 10007  
Beijing Berlin Boston Brussels Denver Frankfurt London Los Angeles New York Oxford Palo Alto Washington

Spark Therapeutics, Inc.  
January 29, 2015  
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We express no opinion herein as to the laws of any state or jurisdiction other than the state laws of the State of New York, the General Corporation Law of the State of Delaware and the federal laws of the United States of America.

Based upon and subject to the foregoing, we are of the opinion that the Shares have been duly authorized for issuance and, when the Shares are issued and paid for in accordance with the terms and conditions of the Underwriting Agreement, the Shares will be validly issued, fully paid and nonassessable.

Please note that we are opining only as to the matters expressly set forth herein, and no opinion should be inferred as to any other matters. This opinion is based upon currently existing statutes, rules, regulations and judicial decisions, and we disclaim any obligation to advise you of any change in any of these sources of law or subsequent legal or factual developments which might affect any matters or opinions set forth herein.

We hereby consent to the filing of this opinion with the Commission as an exhibit to the Registration Statement in accordance with the requirements of Item 601(b)(5) of Regulation S-K under the Securities Act and to the use of our name therein and in the related Prospectus under the caption "Legal Matters." In giving such consent, we do not hereby admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations of the Commission.

Very truly yours,

WILMER CUTLER PICKERING  
HALE AND DORR LLP

By: /s/ Lia Der Marderosian  
Lia Der Marderosian, a Partner

**Consent of Independent Registered Public Accounting Firm**

The Board of Directors  
Spark Therapeutics, Inc.:

We consent to the use of our report dated September 23, 2014, except as to Note 3(h), which is as of January 16, 2015, with respect to the balance sheet of Spark Therapeutics, Inc. (formerly Spark Therapeutics, LLC) as of December 31, 2013, and the related statements of operations, members' equity and cash flows for the period from March 13, 2013 (inception) through December 31, 2013, incorporated herein by reference and to the reference to our firm under the heading "Experts" in the prospectus.

/s/ KPMG LLP

Philadelphia, Pennsylvania  
January 29, 2015