

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

**FORM S-1  
REGISTRATION STATEMENT**  
*Under  
The Securities Act of 1933*

**KEMPHARM, INC.**  
(Exact name of Registrant as specified in its charter)

**Delaware**  
(State or other jurisdiction of  
incorporation or organization)

**2834**  
(Primary Standard Industrial  
Classification Code Number)

**20-5894398**  
(I.R.S. Employer  
Identification Number)

**1180 Celebration Boulevard, Suite 103  
Celebration, FL 34747  
(321) 939-3416**

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

**Travis C. Mickle, Ph.D.**  
**President, Chief Executive Officer and Chairman of the Board of Directors**  
**KemPharm, Inc.**  
**1180 Celebration Boulevard, Suite 103**  
**Celebration, FL 34747**  
**(321) 939-3416**

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

**Brent B. Siler**  
**Matthew P. Dubofsky**  
**Cooley LLP**  
**380 Interlocken Crescent, Suite 900**  
**Broomfield, CO 80021**  
**(720) 566-4000**

*Copies to:*  
**R. LaDuane Clifton**  
**Chief Financial Officer**  
**KemPharm, Inc.**  
**1180 Celebration Boulevard, Suite 103**  
**Celebration, FL 34747**  
**(321) 939-3416**

**Charles E. Phillips, Esq.**  
**Ellenoff Grossman & Schole LLP**  
**1345 Avenue of the Americas**  
**New York, New York 10105**  
**(212) 370-1300**

**Approximate date of commencement of proposed sale to the public:** As soon as practicable after the effective date of this registration statement.

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 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.  (File No. 333-250945)

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, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Non-accelerated filer

Accelerated filer

Smaller reporting company

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

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**CALCULATION OF REGISTRATION FEE**

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TITLE OF SECURITIES BEING REGISTERED	PROPOSED MAXIMUM AGGREGATE OFFERING PRICE(1)	AMOUNT OF REGISTRATION FEE(1)
Underwriter warrants to purchase share of common stock, \$0.0001 par value per share	—	(2)
Common stock issuable upon exercise of underwriter warrants	\$1,437,500	\$156.84

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- (1) The registration fee is calculated in accordance with Rule 457(o) under the Securities Act of 1933, as amended (the “Securities Act”), based on the proposed maximum aggregate offering price. The registrant previously registered securities with a proposed maximum aggregate offering price not to exceed \$120,750,000 on a Registration Statement on Form S-1, as amended (File No. 333-250945), which was declared effective by the Securities and Exchange Commission on January 7, 2021. In accordance with Rule 462(b) promulgated under the Securities Act, an additional amount of securities having a proposed maximum aggregate offering price of \$1,437,500 is hereby registered, which includes the additional shares issuable upon the exercise of the underwriters’ option to purchase additional shares.
- (2) No fee required pursuant to Rule 457(g).

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**This Registration Statement shall become effective upon filing in accordance with Rule 462(b) under the Securities Act of 1933, as amended.**

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## EXPLANATORY NOTE AND INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

Pursuant to Rule 462(b) under the Securities Act of 1933, as amended, KemPharm, Inc. (the “**Registrant**”) is filing this Registration Statement on Form S-1 (this “**Registration Statement**”) with the Securities and Exchange Commission (the “**Commission**”). This Registration Statement relates to the public offering of securities contemplated by the Registration Statement on Form S-1 (File No. 333-250945) (the “**Prior Registration Statement**”), which the Registrant filed with the Commission on November 25, 2020, and amended on December 21, 2020, December 28, 2020 and January 5, 2020, and which the Commission declared effective on January 7, 2021.

The Registrant is filing this Registration Statement for the sole purpose of increasing the aggregate offering price of shares of common stock issuable upon exercise of warrants to be offered by the Registrant to the underwriter in the public offering by \$1,437,500, which includes additional shares of common stock and/or warrants issuable to the underwriter if the underwriter exercises its option to purchase additional securities in the offering. The additional shares that are being registered for issuance and sale are in an amount and at a price that together represent no more than 20% of the maximum aggregate offering price set forth in the Calculation of Registration Fee table contained in the Prior Registration Statement. The information set forth in the Prior Registration Statement and all exhibits to the Prior Registration Statement are hereby incorporated by reference into this Registration Statement.

The required opinion and consents are listed on the Exhibit Index below and filed herewith.

### EXHIBIT INDEX

Exhibit No.	Description
5.1	<a href="#">Opinion of Cooley LLP</a>
23.1	<a href="#">Consent of Independent Registered Public Accounting Firm</a>
23.2	<a href="#">Consent of Cooley LLP (included in Exhibit 5.1)</a>
24.1	<a href="#">Power of Attorney (incorporated by reference to Exhibit 24.1 of the Registration Statement on Form S-1 (File No. 333-250945) filed on November 25, 2020)</a>





Brent B. Siler  
+1 202 728 7040  
bsiler@cooley.com

January 7, 2021

KemPharm, Inc.  
1180 Celebration Boulevard, Suite 103  
Celebration, FL 34747

Ladies and Gentlemen:

You have requested our opinion with respect to certain matters in connection with the offering by KemPharm, Inc., a Delaware corporation (the "**Company**"), of up to (i) 8,846,153 shares (the "**Shares**") of its common stock, par value \$0.0001 per share (the "**Common Stock**") and pre-funded warrants (the "**Pre-Funded Warrants**") to purchase shares of Common Stock (the "**Pre-Funded Warrant Shares**") and (ii) warrants (the "**Purchase Warrants**", and, collectively with the Pre-Funded Warrants, the "**Warrants**") to purchase up to 9,730,768 shares of Common Stock (the "**Purchase Warrant Shares**", and, collectively with the Pre-Funded Warrant Shares, the "**Warrant Shares**"), including up to 1,153,846 Shares and 1,153,846 Warrant Shares that may be sold pursuant to the exercise of an option to purchase additional Shares and Warrant Shares, pursuant to a Registration Statement on Form S-1 (No. 333-250945) (the "**Initial Registration Statement**") filed with the Securities and Exchange Commission (the "**Commission**") under the Securities Act of 1933, as amended (the "**Act**"), including a related prospectus included in the Registration Statement (the "**Prospectus**"), and a Registration Statement on Form S-1 related thereto filed pursuant to Rule 462(b) promulgated under the Act (the "**462(b) Registration Statement**" and, together with the Initial Registration Statement, the "**Registration Statements**").

In connection with this opinion, we have examined and relied upon the Registration Statements, the Prospectus, the form of Purchase Warrant, the form of Pre-Funded Warrant, the Company's Amended and Restated Certificate of Incorporation and Amended and Restated Bylaws, each as currently in effect, and originals or copies certified to our satisfaction of such records, documents, certificates, memoranda and other instruments as in our judgment are necessary or appropriate to enable us to render the opinion expressed below. We have assumed the genuineness of all signatures, the authenticity of all documents submitted to us as originals, the conformity to originals of all documents submitted to us as copies, the accuracy, completeness and authenticity of certificates of public officials, and the due authorization, execution and delivery of all documents by all persons other than the Company where authorization, execution and delivery are prerequisites to the effectiveness thereof. In addition, we have assumed that the Board of Directors of the Company or a duly authorized committee thereof has taken action to set the sale price of the Shares and Warrants and the exercise price of the Warrants. As to certain factual matters, we have relied upon a certificate of an officer of the Company and have not independently verified such matters.

With regard to our opinion regarding the Warrants and the Warrant Shares, we express no opinion to the extent that, notwithstanding its current reservation of shares of Common Stock, future issuances of securities, including the Warrant Shares, of the Company and/or antidilution adjustments to outstanding securities, including the Warrants, of the Company cause the Warrants to be exercisable for more shares of Common Stock than the number that then remain authorized but unissued.

With regard to our opinion concerning the Warrants constituting valid and binding obligations of the Company:

Cooley LLP 1299 Pennsylvania Avenue, NW, Suite 700 Washington, DC 20004-2400  
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(i) Our opinion is subject to, and may be limited by, (a) applicable bankruptcy, reorganization, insolvency, moratorium, fraudulent conveyance, debtor and creditor, and similar laws which relate to or affect creditors' rights generally, and (b) general principles of equity (including, without limitation, concepts of materiality, reasonableness, good faith and fair dealing) regardless of whether considered in a proceeding in equity or at law.

(ii) Our opinion is subject to the qualification that the availability of specific performance, an injunction or other equitable remedies is subject to the discretion of the court before which the request is brought.

(iii) We express no opinion as to any provision of the Warrants that: (a) provides for liquidated damages, buy-in damages, monetary penalties, prepayment or make-whole payments or other economic remedies to the extent such provisions may constitute unlawful penalties, (b) relates to advance waivers of claims, defenses, rights granted by law, or notice, opportunity for hearing, evidentiary requirements, statutes of limitations, trial by jury, or procedural rights, (c) restricts non-written modifications and waivers, (d) provides for the payment of legal and other professional fees where such payment is contrary to law or public policy, (e) relates to exclusivity, election or accumulation of rights or remedies, (f) authorizes or validates conclusive or discretionary determinations, or (g) provides that provisions of the Warrants are severable to the extent an essential part of the agreed exchange is determined to be invalid and unenforceable.

(iv) We express no opinion as to whether a state court outside of the State of New York or a federal court of the United States would give effect to the choice of New York law or jurisdiction provided for in the Warrants.

Our opinion herein is expressed solely with respect to the General Corporation Law of the State of Delaware and, as to the Warrants constituting valid and legally binding obligations of the Company, the laws of the State of New York. Our opinion is based on these laws as in effect on the date hereof. We express no opinion to the extent that any other laws are applicable to the subject matter hereof and express no opinion and provide no assurance as to compliance with any federal or state securities law, rule or regulation. Further, we have assumed the Exercise Price (as defined in the Warrants) will not be adjusted to an amount below the par value per share of the Common Stock.

On the basis of the foregoing, and in reliance thereon, we are of the opinion that (i) the Shares, when sold and issued in accordance with the Registration Statements and the Prospectus, will be validly issued, fully paid and nonassessable, (ii) provided that the Warrants have been duly executed and delivered by the Company to the purchasers thereof against payment therefor, the Warrants, when issued and sold as contemplated in the Registration Statements and the Prospectus will be valid and legally binding obligations of the Company, enforceable against the Company in accordance with their terms, and (iii) the Warrant Shares, when issued and paid for in accordance with the terms of the Warrants, will be validly issued, fully paid and nonassessable.



KemPharm, Inc.  
January 7, 2021  
Page Three

We consent to the reference to our firm under the caption “Legal Matters” in the Prospectus included in the Initial Registration Statement and to the filing of this opinion as an exhibit to the 462(b) Registration Statement.

Sincerely,

COOLEY LLP

By: /s/ Brent B. Siler  
Brent B. Siler

Cooley LLP 1299 Pennsylvania Avenue, NW, Suite 700 Washington, DC 20004-2400  
t: (202) 842-7800 f: (202) 842-7899 cooley.com

**Consent of Independent Registered Public Accounting Firm**

We consent to the incorporation by reference in this Registration Statement on Form S-1 of KemPharm, Inc. filed pursuant to Rule 462(b) under the Securities Act of 1933, as amended, of our report dated February 28, 2020, except for the Reverse Stock Split paragraph of Note A as to which the date is December 27, 2020, relating to the financial statements of KemPharm, Inc., appearing in the Prospectus, which is a part of the Registration Statement (No. 333-250945) on Form S-1 declared effective on January 7, 2021.

/s/ RSM US LLP

Orlando, Florida  
January 7, 2021