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

FORM S-3
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)

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)

Copy to:

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Approximate date of commencement of proposed sale to the public: From time to time after this Registration Statement becomes effective.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box:

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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, other than securities offered only in connection with dividend or interest reinvestment plans, 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.

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 registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a 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	<input type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input checked="" type="checkbox"/>	Smaller reporting company	<input checked="" type="checkbox"/>
		Emerging growth company	<input type="checkbox"/>

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.

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities to be Registered	Amount to be Registered(1)(2)	Proposed Maximum Offering Price per Share(2)	Proposed Maximum Aggregate Offering Price(2)	Amount of Registration Fee
Common stock, par value \$0.0001 per share	8,474,709	\$5.54	\$46,949,888	\$5,123

- (1) The shares will be offered for resale by selling stockholders pursuant to the prospectus contained herein. Pursuant to Rule 416 under the Securities Act of 1933, as amended, the shares of common stock being registered hereunder include such indeterminate number of shares of common stock as may be issuable with respect to the shares of common stock being registered hereunder as a result of stock splits, stock dividends or similar transactions.
- (2) Estimated solely for purposes of calculating the registration fee pursuant to Rule 457(c) under the Securities Act, based on average of high and low price per share of the common stock as reported on the Nasdaq Capital Market on January 8, 2021.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, as amended, or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

The information in this prospectus is not complete and may be changed. The selling stockholders may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting an offer to buy these securities in any state where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED JANUARY 13, 2021

PROSPECTUS



8,474,709 Shares of Common Stock

This prospectus covers the offer and resale by the selling stockholders identified in this prospectus of up to an aggregate of 8,474,709 shares of our common stock issuable upon exercise of outstanding warrants to purchase 3,632,019 shares of our common stock, or the Warrants, and upon conversion of 31,476.98412 shares of our Series B-2 convertible preferred stock, par value \$0.0001 per share, or the Series B-2 Preferred Stock. We issued the Warrants and shares of Series B-2 Preferred Stock to the selling stockholders in exchange for a portion of the principal amount of such selling stockholders' senior secured convertible notes on January 12, 2021. We are registering these shares issuable upon exercise or conversion of the Warrants and Series B-2 Preferred Stock on behalf of the selling stockholders, to be offered and sold by them from time to time.

We are not selling any shares of common stock under this prospectus and will not receive any proceeds from the sale by the selling stockholders of such shares.

Sales of the shares by the selling stockholders may occur at fixed prices, at market prices prevailing at the time of sale, at prices related to prevailing market prices, at negotiated prices and/or at varying prices determined at the time of sale. The selling stockholders may sell shares directly or to or through underwriters, broker-dealers or agents, who may receive compensation in the form of discounts, concessions or commissions from the selling stockholders, the purchasers of the shares, or both. The selling stockholders may sell any, all or none of the securities offered by this prospectus and we do not know when or in what amount the selling stockholders may sell their shares of common stock hereunder following the effective date of the registration statement of which this prospectus forms a part. We provide more information about how the selling stockholders may sell or otherwise dispose of their shares of common stock in the section titled "Plan of Distribution" on page 20.

We are paying the cost of registering the shares of common stock covered by this prospectus as well as various related expenses. The selling stockholders are responsible for all selling commissions, transfer taxes and other costs related to the offer and sale of their shares.

Our common stock is listed on The Nasdaq Capital Market under the symbol "KMPH." On January 12, 2021, the last reported sale price of our common stock was \$6.00 per share.

We are a "smaller reporting company" under applicable Securities and Exchange Commission rules and, as such, have elected to comply with certain reduced public company disclosure requirements for this prospectus and future filings. See "Prospectus Summary—Implications of Being a Smaller Reporting Company."

Investing in our common stock involves a high degree of risk. Before making an investment decision, please read the information under "[Risk Factors](#)" beginning on page 7 of this prospectus and under similar headings in any amendment or supplement to this prospectus or in any filing with the Securities and Exchange Commission that is incorporated by reference herein.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is _____, 2021

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or SEC, using a “shelf” registration process. Under this registration statement, the selling stockholders may sell from time to time in one or more offerings the common stock described in this prospectus.

You should rely only on the information contained or incorporated by reference in this prospectus. We have not authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. This prospectus may only be used where it is legal to offer and sell shares of our common stock. If it is against the law in any jurisdiction to make an offer to sell these shares, or to solicit an offer from someone to buy these shares, then this prospectus does not apply to any person in that jurisdiction, and no offer or solicitation is made by this prospectus to any such person. You should assume that the information appearing in this prospectus is accurate only as of the date on the front cover of this prospectus, regardless of the time of delivery of this prospectus or of any sale of common stock. Our business, financial condition, results of operations and prospects may have changed since such date.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus and any applicable prospectus supplement or free writing prospectus, including the documents incorporated by reference herein and therein contain “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act. The statements relate to future events or to our future operating or financial performance and involve substantial risks and uncertainties. All statements, other than statements of historical fact, contained in this prospectus and the information incorporated by reference herein and therein, including statements regarding our strategy, future operations, future financial position, future revenue, projected costs, prospects, plans and objectives of management, are forward-looking statements. The words “anticipate,” “believe,” “estimate,” “expect,” “intend,” “may,” “plan,” “predict,” “project,” “target,” “potential,” “will,” “would,” “could,” “should,” “continue,” and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words.

The forward-looking statements in this prospectus and the information incorporated by reference herein and therein include, among other things, statements about:

- the progress of, outcome or and timing of any regulatory approval for any of our product candidates and the expected amount or timing of any payment related thereto under any of our collaboration agreements;
- the progress of, timing of and expected amount of expenses associated with our research, development and commercialization activities;
- the expected timing of our clinical trials for our product candidates and the availability of data and result of those trials;
- our expectations regarding federal, state and foreign regulatory requirements;
- the potential therapeutic benefits and effectiveness of our product and product candidates;
- the size and characteristics of the markets that may be addressed by our product and product candidates;
- our intention to seek to establish, and the potential benefits to us from any, strategic collaborations or partnerships for the development or sale of our product and product candidates;
- our expectations as to future financial performance, expense levels and liquidity sources;
- the timing of commercializing our product and product candidates; and
- other risks and uncertainties, including those listed under the caption “Risk Factors” in our most recent Annual Report on Form 10-K, our most recent Quarterly Report on Form 10-Q and other filings we make with the SEC.

We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. We have included important factors in the cautionary statements included in this prospectus, particularly in the “Risk Factors” section, that we believe could cause actual results or events to differ materially from the forward-looking statements that we make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments we may make.

You should read this prospectus and the information incorporated by reference herein and therein completely and with the understanding that our actual future results may be materially different from what we expect. We do not assume any obligation to update any forward-looking statements.

PROSPECTUS SUMMARY

This summary highlights certain information about us, the exchange transaction pursuant to which we issued to the selling stockholders the Warrants and shares of Series B-2 Preferred Stock and selected information contained elsewhere in or incorporated by reference into this prospectus. This summary is not complete and does not contain all of the information that you should consider before making an investment decision. For a more complete understanding of our company, you should read and consider carefully the more detailed information included or incorporated by reference in this prospectus and any applicable prospectus supplement, including the risk factors described under the heading "Risk Factors" beginning on page 7 of this prospectus, as well as the information incorporated herein by reference, before making an investment decision.

Except as otherwise indicated herein or as the context otherwise requires, references in this prospectus to "KemPharm," "the company," "we," "us" and "our" refer to KemPharm, Inc.

Company Overview

We are a specialty pharmaceutical company focused on the discovery and development of proprietary prodrugs to treat serious medical conditions through our proprietary Ligand Activated Therapy, or LAT[®], technology. We utilize our proprietary LAT technology to generate improved prodrug versions of drugs approved by the U.S. Food and Drug Administration, or FDA, as well as to generate prodrug versions of existing compounds that may have applications for new disease indications. Our product candidate pipeline is focused on the high need areas of attention deficit hyperactivity disorder, or ADHD, and stimulant use disorder, or SUD, and idiopathic hypersomnia, or IH. Our co-lead clinical development candidates, KP415 and KP484, are both based on a prodrug of d-methylphenidate, or d-MPH, but with differing extended-release, or ER, effect profiles, and are intended for the treatment of ADHD. Our preclinical product candidate for the treatment of SUD is KP879, based on a prodrug of d-MPH. Our preclinical prodrug product candidate for the treatment of IH is KP1077. In addition, we have announced our commercial partnership with KVK Tech, Inc., or KVK, of APADAZ[®], an FDA approved immediate-release, or IR, combination product of benzhydrocodone, our prodrug of hydrocodone, and acetaminophen, or APAP, for the short-term (no more than 14 days) management of acute pain severe enough to require an opioid analgesic and for which alternative treatments are inadequate. We have entered into a collaboration and license agreement with Commave Therapeutics SA (formerly known as Boston Pharmaceuticals S.A.), an affiliate of Gurnet Point Capital, or Commave, for the development, manufacture and commercialization of our product candidates containing serdexmethylphenidate, or SDX, and d-MPH.

In October 2018, we entered into our collaboration and license agreement, or the APADAZ License Agreement, with KVK. Under the APADAZ License Agreement, we granted an exclusive license to KVK to conduct regulatory activities for, manufacture and commercialize APADAZ in the United States. In collaboration with KVK, APADAZ was available for sale nationally beginning in November 2019.

In September 2019, we entered into our collaboration and license agreement, or the KP415 License Agreement, with Commave, for the development, manufacture and commercialization of our product candidates containing SDX and d-MPH, including KP415, KP484, and, at the option of Commave, KP879, KP922 or any other product candidate developed by us containing SDX and developed to treat ADHD or any other central nervous system disorder.

In July 2020, we entered into a consultation services arrangement with Corium, Inc., or Corium, under which Corium engaged us to guide the product development and regulatory activities for certain current and potential future products in Corium's portfolio, as well as continue supporting preparation for the potential commercial launch of KP415. Corium is a portfolio company of Gurnet Point Capital and has been tasked with leading all commercialization activities for KP415 under the KP415 License Agreement.

We employ our proprietary LAT technology to discover and develop prodrugs that are new molecules that can improve one or more of the attributes of approved drugs, such as enhanced bioavailability, extended duration of action, increased safety and reduced susceptibility to abuse. A prodrug is a precursor chemical compound of a drug that is inactive or less than fully active, which is then converted in the body to the active form of the drug through a normal metabolic process. Where possible, we seek, to develop prodrugs that will be eligible for approval under Section 505(b)(2) of the Federal Food, Drug and Cosmetic Act otherwise known as a 505(b)(2) NDA, which allows us to rely on the FDA's previous findings of safety and effectiveness for one or more approved products, if we demonstrate such reliance is scientifically appropriate.

December 2020 Exchange Agreement

In December 2020, we entered into an exchange agreement, which we refer to as the December 2020 Exchange Agreement, with the selling stockholders. Under the December 2020 Exchange Agreement, in January 2021 (a) we made a payment of approximately \$30.3 million, or the Debt Payment, as a cash pre-payment of a portion of principal amount of the outstanding senior secured convertible notes, or the Notes, then held by the selling stockholders in an aggregate amount equal to approximately \$30.3 million; and (b) issued the selling stockholders 31,476,98412 shares of our Series B-2 Preferred Stock and Warrants exercisable for 3,632,019 shares of our common stock in exchange for the cancellation of a portion of the principal amount of the Notes owned by the selling stockholders in an aggregate amount equal to the Debt Payment, plus the Q4 PIK Interest Payment (as defined in the December 2020 Exchange Agreement), with such transaction referred to as the Exchange.

The December 2020 Exchange Agreement contains customary representations, warranties and covenants made by us and the selling stockholders, including a covenant by us for the benefit of the selling stockholders to file a registration statement to register for resale under the Securities Act the shares of common stock issuable upon exercise of the Exchange Warrants or conversion of the shares of Series B-2 Preferred Stock issued pursuant to the terms of the December 2020 Exchange Agreement in the Exchange.

Selected Risks Affecting Our Business

Investing in our common stock involves risk. You should carefully consider all of the information in this prospectus, including information incorporated herein by reference, prior to investing in our common stock. These risks are discussed more fully in the section titled "Risk Factors" beginning on page 7 of this prospectus and under similar headings in the documents incorporated herein by reference. These risks and uncertainties include, but are not limited to, the following:

- Our research and development activities are focused on discovering and developing proprietary prodrugs, and we are taking an innovative approach to discovering and developing prodrugs, which may never lead to marketable prodrug products.
- If we are not able to obtain required regulatory approvals for our product candidates, or the approved labels are not sufficiently differentiated from other competing products, we will not be able to commercialize them and our ability to generate revenue or profits or to raise future capital could be limited.
- We are early in our development efforts and have only one product which has completed development and obtained regulatory approval by the FDA, APADAZ. All our other active product candidates are in clinical or preclinical development. If commercialization of APADAZ or our product candidates is not successful, or we experience significant delays in commercialization, our business will be harmed.
- Clinical drug development involves a lengthy and expensive process, with an uncertain outcome. We may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of our product candidates.

- We may need substantial additional funding to pursue our business objectives. If we are unable to raise capital when needed, we could be forced to delay, reduce or altogether cease our prodrug development programs or commercialization efforts or cease operations altogether.
- The auditor’s opinion on our audited financial statements for the fiscal year ended December 31, 2019, included in our annual report on Form 10-K, contains an explanatory paragraph relating to our ability to continue as a going concern.
- In connection with preparation of our annual financial statements for the fiscal year ended December 31, 2019, we identified a material weakness in our internal control over financial reporting. Any failure to maintain effective internal control over financial reporting could harm us.
- We have incurred significant recurring negative net operating losses since our inception. We expect to incur operating losses over the next several years and may never achieve or maintain profitability.
- If we are unable to obtain and maintain trade secret protection or patent protection for our technology, APADAZ, KP415, KP484 and our other product candidates, or if the scope of the patent protection obtained is not sufficiently broad, our competitors could develop and commercialize technology and drugs similar or identical to ours, and our ability to successfully commercialize our technology, APADAZ, KP415, KP484 and our other product candidates, if approved, may be impaired.
- If we, subject to the approval of Commave, or Commave themselves, attempt to rely on Section 505(b)(2) of the Federal Food, Drug and Cosmetic Act and the FDA does not conclude that our product candidates are sufficiently bioequivalent, or have comparable bioavailability, to approved drugs, or if the FDA does not allow us or Commave to pursue the 505(b)(2) NDA pathway as anticipated, the approval pathway for our product candidates will likely take significantly longer, cost significantly more and entail significantly greater complications and risks than anticipated, and the FDA may not ultimately approve our product candidates.
- The FDA may determine that any NDA we may submit under the 505(b)(2) regulatory pathway for any of our product candidates in the future is not sufficiently complete to permit a substantive review.
- We have entered into collaborations with KVK, for the commercialization of APADAZ in the United States, and Commave, to develop, manufacture and commercialize KP415 and KP484 worldwide. In addition, we may seek collaborations with third parties for the development or commercialization of our other product candidates, or in other territories. If those collaborations are not successful, we may not be able to capitalize on the market potential of APADAZ or KP415, KP484 or other product candidates, if approved.
- The trading price of the shares of our common stock is likely to be volatile, and purchasers of our common stock could incur substantial losses.

Corporate Information

We were incorporated under the laws of the State of Iowa in October 2006 and were reincorporated under the laws of the State of Delaware in May 2014. Our principal executive offices are located at 1180 Celebration Boulevard, Suite 103, Celebration, FL 34747 and our telephone number is (321) 939-3416. Our website address is www.kempharm.com. The information contained on our website is not incorporated by reference into this prospectus, and you should not consider any information contained on, or that can be accessed through, our website as part of this prospectus or in deciding whether to purchase our securities.

“KemPharm”, the KemPharm logo, “APADAZ,” “LAT” and other trademarks or service marks of KemPharm, Inc. appearing in this prospectus are the property of KemPharm, Inc. This prospectus and the information incorporated herein by reference contains additional trade names, trademarks and service marks of others, which are the property of their respective owners.

In addition, unless we specifically state otherwise, historical information in this prospectus has been retrospectively adjusted to reflect a 1-for-16 reverse stock split of our common stock, effected on December 23, 2020.

Implications of Being a Smaller Reporting Company

We are a “smaller reporting company” as defined in Item 10(f)(1) of Regulation S-K. Smaller reporting companies may take advantage of certain reduced disclosure obligations, including, among other things, providing only two years of audited financial statements. We will remain a smaller reporting company until the last day of any fiscal year for so long as either (1) the market value of our shares of common stock held by non-affiliates does not equal or exceed \$250.0 million as of the prior June 30th, or (2) our annual revenues did not equal or exceed \$100.0 million during such completed fiscal year and the market value of our shares of common stock held by non-affiliates did not equal or exceed \$700.0 million as of the prior June 30th. To the extent we take advantage of any reduced disclosure obligations, it may make comparison of our financial statements with other public companies difficult or impossible.

The Offering

Common stock offered by the selling stockholders	8,474,709 shares
Terms of the offering	The selling stockholders, including their transferees, donees, pledgees, assignees or successors-in-interest, may sell, transfer or otherwise dispose of any or all of the shares of common stock offered by this prospectus from time to time on the Nasdaq Capital Market or any other stock exchange, market or trading facility on which the shares are traded or in private transactions. The shares of common stock may be sold at fixed prices, at prevailing market prices, at prices related to prevailing market prices, at negotiated prices and/or at varying prices determined at the time of sale. See “Plan of Distribution” on page 20.
Use of proceeds	We will not receive any proceeds from the sale of the shares of common stock covered by this prospectus.
Risk factors	See “Risk Factors” beginning on page 7, for a discussion of factors you should carefully consider before deciding to invest in our common stock.
Nasdaq Capital Market symbol	KMPH

Throughout this prospectus, when we refer to the shares of our common stock being registered on behalf of the selling stockholders for offer and resale, we are referring to the shares of common stock issued or issuable to the selling stockholders upon exercise of the Warrants or upon conversion of the shares of Series B-2 Preferred Stock issued in the Exchange as described above. When we refer to the selling stockholders in this prospectus, we are referring to the selling stockholders identified in this prospectus and, as applicable, their transferees, donees, pledgees, distributees and other successors-in-interest that may be identified in a supplement to this prospectus or, if required, a post-effective amendment to the registration statement of which this prospectus is a part.

RISK FACTORS

Investing in our common stock involves a high degree of risk. Before you decide to invest in our common stock, you should carefully consider the risks described in the section entitled “Risk Factors” in our most recent Annual Report on Form 10-K, our most recent Quarterly Report on Form 10-Q and other filings we make with the SEC from time to time, which are incorporated by reference herein in their entirety, together with the other information in this prospectus and documents incorporated by reference in this prospectus. The risks described in our most recent Annual Report on Form 10-K, our most recent Quarterly Report on Form 10-Q and the other filings incorporated by reference herein are not the only ones facing our company. Additional risks and uncertainties may also impair our business operations. If any of the risks described in our most recent Annual Report on Form 10-K, our most recent Quarterly Report on Form 10-Q and the other filings incorporated by reference herein occurs, our business, financial condition, results of operations and future growth prospects could be harmed. In these circumstances, the market price of our common stock could decline, and you may lose all or part of your investment. For more information, see the sections entitled “Where You Can Find Additional Information” and “Cautionary Note Regarding Forward-Looking Statements.”

USE OF PROCEEDS

We will not receive any of the proceeds from the sale or other disposition of shares of our common stock held by the selling stockholders pursuant to this prospectus.

We will bear the out-of-pocket costs, expenses and fees incurred in connection with the registration of shares of our common stock to be sold by the selling stockholders pursuant to this prospectus, including, without limitation, all registration and filing fees, Nasdaq Capital Market listing fees and fees and expenses of our counsel and our accountants. The selling stockholders will bear underwriting discounts, commissions, placement agent fees or other similar expenses payable with respect to their sales of shares of our common stock.

SELLING STOCKHOLDERS

We are registering the resale of 8,474,709 shares of common stock issuable upon conversion and exercise of our Series B-2 Preferred Stock and Warrants, respectively, held by the selling stockholders identified below, to permit each of them, or their respective transferees, pledgees, distributees and other successors-in-interest that may be identified in a supplement to this prospectus or, if required, a post-effective amendment to the registration statement of which this prospectus is a part, to resell or otherwise dispose of such shares of common stock in the manner contemplated under the section entitled "Plan of Distribution" in this prospectus (as may be supplemented and amended).

The selling stockholders may sell some, all or none of their shares in this offering, and these shares of common stock may be offered only after conversion or exercise of all or a portion of the shares of Series B-2 Preferred Stock or Warrants held by a selling stockholder. We cannot predict when or if the selling stockholders will convert or exercise their shares of Series B-2 Preferred Stock or Warrants, respectively, and following any such exercise of conversion, we do not know how long the selling stockholders will hold the shares before selling them. We currently have no agreements, arrangements or understandings with the selling stockholders regarding the sale or other disposition of any of the shares. The shares covered hereby may be offered from time to time by the selling stockholders. As a result, we cannot estimate the number of shares of common stock each of the selling stockholders will beneficially own after termination of sales under this prospectus. In addition, each of the selling stockholders may have sold, transferred or otherwise disposed of all or a portion of its shares of common stock since the date on which it provided information for this table.

Beneficial ownership is determined in accordance with the rules of the SEC and includes voting or investment power with respect to our common stock. Generally, a person "beneficially owns" shares of our common stock as of a date if the person has or shares with others the right to vote those shares or to dispose of them on that date, or if the person has the right to acquire voting or disposition rights within 60 days of that date.

The information in the table below and the footnotes thereto regarding shares of common stock to be beneficially owned after the offering assumes the sale of all shares being offered by the selling stockholders under this prospectus. The percentage of shares owned prior to and after the offering is based on 11,650,784 shares of common stock outstanding as of January 12, 2021. Unless otherwise indicated, the address for the persons and entities listed in the table below is c/o KemPharm, Inc., 1180 Celebration Boulevard, Suite 103, Celebration, FL 34747.

Name of Selling Stockholder	Shares of Common Stock Beneficially Owned Prior to Offering(1)		Number of Shares of Common Stock Being Offered	Shares of Common Stock to be Beneficially Owned After Offering(2)	
	Number	Percentage		Number	Percentage
Entities affiliated with Deerfield Management Company, L.P.(3)	7,175,874	4.985%	6,987,931	187,943	*
Delaware Street Capital Master Fund, L.P.(4)	1,101,717	4.985%	1,091,138	10,579	*
M. Kingdon Offshore Master Fund, LP(5)	399,475	3.315%	395,640	3,835	*

* Represents beneficial ownership of less than 1%.

- (1) Assumes the conversion of all outstanding shares of Series B-2 Preferred Stock and exercise in full of all Warrants held by such selling stockholder without giving effect to any limits on beneficial ownership included in the terms thereof.
- (2) Assumes that all shares covered by this prospectus will be sold by the applicable selling stockholder.
- (3) The number of shares of common stock beneficially owned prior to this offering consists of (a) 577,247 shares of common stock issuable upon conversion of 3,752.04319 shares of Series B-2 Preferred Stock, 432,936 shares of common stock issuable upon exercise of Warrants and 9,794 shares issuable upon the conversion of convertible promissory notes through March 14, 2021 held by Deerfield Special Situations Fund, L.P. ("Special Situations Fund") and (b) 3,415,856 shares of common stock issuable upon conversion of 22,202.71601 shares of Series B-2 Preferred Stock, 2,561,892 shares of common stock issuable upon exercise of Warrants, 120,192 shares of common stock issuable upon exercise of other outstanding warrants and 57,957 shares issuable upon the conversion of convertible promissory notes through March 14, 2021 held by Deerfield Private Design Fund III, L.P. ("Private Design Fund"). In accordance with the terms of the convertible promissory notes, the outstanding warrants (including the Warrants) and the amended and

restated certificate of designation for the Series B-2 Preferred Stock, the holder thereof may not convert such convertible promissory notes, exercise such warrants or convert such shares of Series B-2 Preferred Stock, as applicable, if such conversion or exercise would result in such holder and its affiliates and any other person or entities with which such holder would constitute a Section 13(d) “group” beneficially owning more than 4.985% of the then issued and outstanding shares of our common stock, which we sometimes refer to as the beneficial ownership cap. Accordingly, notwithstanding the number of shares reported, each of Special Situations Fund and Private Design Fund (and the persons and entities identified below that may be deemed to beneficially own the shares held by each of Special Situations Fund and Private Design Fund), disclaim beneficial ownership of the shares of common stock issuable upon conversion or exercise (as applicable) of such shares of preferred stock, warrants and convertible promissory notes to the extent that upon such conversion or exercise the number of shares beneficially owned by such holder, its affiliates and any applicable group members, in the aggregate, would exceed the beneficial ownership cap. Deerfield Mgmt, L.P., is the general partner of Special Situations Fund. Deerfield Mgmt III, L.P. is the general partner of Private Design Fund. Deerfield Management Company, L.P., is the investment manager of each of Special Situations Fund and Private Design Fund. Mr. James E. Flynn is the sole member of the general partner of each of Deerfield Mgmt, L.P. and Deerfield Management Company, L.P. Deerfield Mgmt, L.P. may be deemed to beneficially own the securities held by Special Situations Fund and Deerfield Mgmt III, L.P. may be deemed to beneficially own the securities held by Private Design Fund. Each of Deerfield Management Company, L.P. and Mr. Flynn may be deemed to beneficially own the securities held by each of Special Situations Fund and Private Design Fund. The principal business address of Deerfield Management Company, L.P. is 345 Park Avenue South, 12th Floor, New York, New York 10010, Attn: Elliot Press and David Clark.

- (4) The number of shares of common stock beneficially owned prior to this offering consists of 623,507 shares of common stock issuable upon conversion of 4,052,73312 shares of Series B-2 Preferred Stock, 467,631 shares of common stock issuable upon exercise of Warrants and 10,579 shares issuable upon the conversion of convertible promissory notes through March 14, 2021 held by Delaware Street Capital Master Fund, L.P. (the “Fund”). In accordance with the terms of the convertible promissory notes and the Warrants, the holder thereof may not convert or exercise this convertible promissory note or Warrants if such conversion or exercise would result in such holder and its affiliates and any other person or entities with which such holder would constitute a Section 13(d) “group” beneficially owning more than 9.985% of the then issued and outstanding shares of our common stock. In accordance with the terms of the amended and restated certificate of designation for the Series B-2 Preferred Stock, the holder thereof may not convert such holder’s shares of Series B-2 Preferred Stock if such conversion would result in such holder and its affiliates and any other person or entities with which such holder would constitute a Section 13(d) “group” beneficially owning more than 4.985% of the then issued and outstanding shares of our common stock. These conversion and exercise limitations may not be waived and any purported conversion or exercise that is inconsistent with these conversion or exercise limitations is null and void. The shares held by the Fund are indirectly beneficially owned by (a) DSC Advisors, L.P. (“DSCA”), as investment manager of the Fund, (b) DSC Managers, L.L.C., as general partner of the Fund, (c) DSC Advisors, L.L.C. (“DSCA LLC”), as general partner of DSCA, and (d) Andrew G. Bluhm, the principal of DSCA LLC. The principal business address of Delaware Street Capital Master Fund, L.P. is 900 North Michigan, Suite 1600, Chicago, IL 60611.
- (5) The number of shares of common stock beneficially owned prior to this offering consists of 226,080 shares of common stock issuable upon conversion of 1,469,4918 shares of Series B-2 Preferred Stock, 169,560 shares of common stock issuable upon exercise of Warrants and 3,835 shares issuable upon the conversion of convertible promissory notes through March 14, 2021 held by M. Kingdon Offshore Master Fund, LP (the “Kingdon”). In accordance with the terms of the convertible promissory notes, the Warrants and the amended and restated certificate of designation for the Series B-2 Preferred Stock, the holder thereof may not convert such convertible promissory notes, exercise such warrants or convert such shares of Series B-2 Preferred Stock, as applicable, if such conversion or exercise would result in such holder and its affiliates and any other person or entities with which such holder would constitute a Section 13(d) “group” beneficially owning more than 4.985% of the then issued and outstanding shares of our common stock. These conversion and exercise limitations may not be waived and any purported conversion or exercise that is inconsistent with these conversion or exercise limitations is null and void. The shares held by the Kingdon are indirectly beneficially owned by Kingdon GP, LLC, as the general partner of Kingdon, and Mark Kingdon, as the managing member of Kingdon GP, LLC. The principal business address of M. Kingdon Offshore Master Fund, LP is c/o Kingdon Capital Management, LLC, 157 W. 57th Street, 50th Floor, New York, NY 10019.

Relationship with Selling Stockholders

As discussed in greater detail above under the section entitled “Prospectus Summary—December 2020 Exchange Agreement,” in December 2020, we entered into the December 2020 Exchange Agreement pursuant to which we effected the Exchange in which we issued the selling stockholders 31,476.98412 shares of our Series B-2 Preferred Stock and Warrants exercisable for 3,632,019 shares of our common stock in exchange for the cancellation of a portion of the principal amount of the Notes, and agreed with the selling stockholders to file a registration statement to enable the resale of the shares of common stock issuable upon the conversion and exercise of the Series B-2 Preferred Stock and Warrants.

Delaware Street Capital Master Fund, L.P. and certain entities affiliated with Deerfield Management Company, L.P., within the prior three years, were each beneficial owners of more than 5% of our common stock. None of, nor any persons having control over, any of the selling stockholders has held any position or office with us or our affiliates within the last three years or has had a material relationship with us or any of our predecessors or affiliates within the past three years, other than as a result of the ownership of our shares or other debt or equity securities.

DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock and provisions of our amended and restated certificate of incorporation, certificates of designation and amended and restated bylaws are summaries. You should also refer to the amended and restated certificate of incorporation and the amended and restated bylaws, which are filed as exhibits to the registration statement of which this prospectus is a part.

General

Under our amended and restated certificate of incorporation we are authorized to issue up to 250,000,000 shares of common stock, \$0.0001 par value per share, and 10,000,000 shares of preferred stock, \$0.0001 par value per share, of which 9,578 are designated Series A preferred stock, or the Series A Preferred Stock, 1,576 are designated Series B-1 preferred stock, or the Series B-1 Preferred Stock, and 31,480 are designated Series B-2 Preferred Stock, or the Series B-2 Preferred Stock, with the Series B-1 Preferred Stock and Series B-2 Preferred Stock referred to herein, collectively, as the Series B Preferred Stock. Our board of directors may establish the rights and preferences of the preferred stock from time to time. As of January 12, 2021, we had outstanding (i) 11,650,784 shares of common stock, and (ii) 31,476.98412 shares of Series B-2 Preferred Stock.

Common Stock

Voting Rights

Each holder of our common stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. Under our amended and restated certificate of incorporation and amended and restated bylaws, our stockholders do not have cumulative voting rights. Because of this, the holders of a majority of the shares of our common stock entitled to vote in any election of directors can elect all of the directors standing for election, if they should so choose.

Dividends

Subject to preferences that may be applicable to any then-outstanding preferred stock, holders of our common stock are entitled to receive ratably those dividends, if any, as may be declared from time to time by our board of directors out of legally available funds.

Liquidation

In the event of our liquidation, dissolution or winding up, holders of our common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then-outstanding shares of our preferred stock.

Rights and Preferences

Holders of our common stock have no preemptive, conversion or subscription rights and there are no redemption or sinking fund provisions applicable to our common stock. The rights, preferences and privileges of the holders of our common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of our preferred stock that we may designate in the future.

Preferred Stock

Pursuant to our amended and restated certificate of incorporation, our board of directors has the authority, without further action by the stockholders (unless such stockholder action is required by applicable law or stock exchange listing rules), to designate and issue up to 10,000,000 shares of preferred stock in one or more series, to establish from time to time the number of shares to be included in each such series, to fix the designations, powers, preferences, privileges and relative participating, optional or special rights and the qualifications, limitations or restrictions thereof, including dividend rights, conversion rights, voting rights, terms of redemption and liquidation preferences, any or all of which may be greater than the rights of our common stock, and to increase or decrease the number of shares of any such series, but not below the number of shares of such series

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then outstanding. Our board of directors, without stockholder approval, can issue preferred stock with voting, conversion or other rights that could adversely affect the voting power and other rights of the holders of our common stock. Preferred stock could be issued quickly with terms designed to delay or prevent a change in control of our company or make removal of management more difficult. Additionally, the issuance of preferred stock may have the effect of decreasing the market price of our common stock and may adversely affect the voting power of holders of our common stock and reduce the likelihood that our common stockholders will receive dividend payments and payments upon liquidation.

Our board of directors will fix the designations, voting powers, preferences and rights, as well as the qualifications, limitations or restrictions, of the preferred stock of each series that we offer under this prospectus and applicable prospectus supplements in the certificate of designation relating to that series. We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of any certificate of designation that describes the terms of the series of preferred stock we are offering before the issuance of that series of preferred stock. This description will include:

- the title and stated value;
- the number of shares we are offering;
- the liquidation preference per share;
- the purchase price per share;
- the dividend rate per share, dividend period and payment dates and method of calculation for dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;
- our right, if any, to defer payment of dividends and the maximum length of any such deferral period;
- the procedures for any auction and remarketing, if any;
- the provisions for a sinking fund, if any;
- the provisions for redemption or repurchase, if applicable, and any restrictions on our ability to exercise those redemption or repurchase rights;
- any listing of the preferred stock on any securities exchange or market;
- whether the preferred stock will be convertible into our common stock or other securities of ours, including depositary shares and warrants, and, if applicable, the conversion period, the conversion price, or how it will be calculated, and under what circumstances it may be adjusted;
- whether the preferred stock will be exchangeable into debt securities, and, if applicable, the exchange period, the exchange price, or how it will be calculated, and under what circumstances it may be adjusted;
- voting rights, if any, of the preferred stock;
- preemption rights, if any;
- restrictions on transfer, sale or other assignment, if any;
- whether interests in the preferred stock will be represented by depositary shares;
- a discussion of any material or special United States federal income tax considerations applicable to the preferred stock;
- the relative ranking and preferences of the preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs;
- any limitations on issuances of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock being issued as to dividend rights and rights if we liquidate, dissolve or wind up our affairs; and
- any other specific terms, rights, preferences, privileges, qualifications or restrictions of the preferred stock.

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The Delaware General Corporation Law, the law governing corporations in the state of our incorporation, provides that the holders of preferred stock will have the right to vote separately as a class (or, in some cases, as a series) on an amendment to our certificate of incorporation if the amendment would change the par value or, unless the certificate of incorporation provided otherwise, the number of authorized shares of the class or change the powers, preferences or special rights of the class or series so as to adversely affect the class or series, as the case may be. This right is in addition to any voting rights that may be provided for in the applicable certificate of designation.

As of January 12, 2021, we have designated an aggregate of 42,634 shares of preferred stock, of which 9,578 are designated Series A Preferred Stock, 1,576 are designated Series B-1 Preferred Stock and 31,480 are designated Series B-2 Preferred Stock.

Amended and Restated Series B-2 Certificate of Designation

On January 11, 2021, we filed an Amended and Restated Series B-2 Certificate of Designation with the Secretary of State of the State Delaware, setting forth the preferences, rights and limitations of the Series B-2 Preferred Stock. As of January 12, 2021, we had designated 31,480 shares of preferred stock as Series B-2 Preferred Stock, of which 31,476.98412 were outstanding.

Each share of Series B-2 Preferred Stock has an aggregate stated value of \$1,000 and is convertible into shares of our common stock at a per share price equal to \$6.4999 (subject to adjustment to reflect stock splits and similar events).

The Series B-2 Preferred Stock are convertible at any time on or after the PDUFA Date (as defined in the Amended and Restated Series B-2 Certificate of Designation) at the option of the holders thereof; provided that the holders thereof will be prohibited from converting shares of Series B-2 Preferred Stock into shares our common stock if, as a result of such conversion, such holders (together with certain affiliates and “group” members of such holders) would beneficially own more than 4.985% of the total number of shares of our common stock then issued and outstanding. The Series B-2 Preferred Stock are not be redeemable. In the event of our liquidation, dissolution or winding up or our change in control, the holders of Series B-2 Preferred Stock will receive, prior to any distribution or payment on our common stock, an amount equal to the greater of (i) \$1,000 per share (in the case of a change in control, transaction consideration with such value), or (ii) the amount (in the case of a change in control, in the form of the transaction consideration) per share each such holder would have been entitled to receive if every share of Series B-2 Preferred Stock had been converted into common stock immediately prior to such event, in each case, plus any declared but unpaid dividends thereon. With respect to rights upon liquidation, the Series B-2 Preferred Stock rank senior to our common stock, on parity with any Parity Securities (as defined in the Amended and Restated Series B-2 Certificate of Designation) and junior to any Senior Securities (as defined in the Amended and Restated Series B-2 Certificate of Designation) and existing and future indebtedness. Except as otherwise required by law (or with respect to approval of certain actions involving our organizational documents that adversely affect the holders of Series B-2 Preferred Stock and other specified matters regarding the rights, preferences and privileges of the Series B-2 Preferred Stock), the Series B-2 Preferred Stock do not have voting rights. The Series B-2 Preferred Stock are not be subject to any price-based anti-dilution protections and do not provide for any accruing dividends, but do provide that holders of Series B-2 Preferred Stock will participate in any dividends on our common stock on an as-converted basis (without giving effect to the limitation on conversion described above). The Amended and Restated Series B-2 Certificate of Designation also provides for partial liquidated damages in the event that we fail to timely convert shares of Series B-2 Preferred Stock into common stock in accordance with the Amended and Restated Series B-2 Certificate of Designation.

Convertible Notes

As of January 12, 2021, we have outstanding convertible promissory notes in the aggregate principal amount of \$7.6 million, which we refer to, together, as the Convertible Notes. The Convertible Notes bear interest at 6.75% per annum. The Convertible Notes are convertible into shares of our common stock at a conversion price of \$93.60 per share, subject to adjustment in accordance with the terms of the Convertible Notes. The conversion price of the Convertible Notes will be adjusted downward if we issue or sell any shares of our common stock, convertible securities, warrants or options at a sale or exercise price per share less than the greater of the conversion price of the Convertible Notes or the closing sale price of our common stock on our principal market

or exchange on the last trading date immediately prior to such issuance, or, in the case of a firm commitment underwritten offering, on the date of execution of the underwriting agreement between us and the underwriters for such offering. If we effect an “at the market offering” as defined in Rule 415 of the Securities Act of our common stock, the conversion price of the Convertible Notes will be adjusted downward pursuant to this anti-dilution adjustment only if such sales are made at a price less than \$93.60 per share. This anti-dilution adjustment also will not apply to certain specified sales. Notwithstanding anything to the contrary in the Convertible Notes, the anti-dilution adjustment of the Convertible Notes shall not result in the conversion price of the Convertible Notes being less than \$9.328 per share. The Convertible Notes are convertible at any time at the option of the holders thereof, provided that each holder is prohibited from converting the Convertible Notes into shares of our common stock if, as a result of such conversion, such holder (together with certain affiliates and “group” members of such holder) would beneficially own more than 4.985% of the total number of shares of our common stock then issued and outstanding. However, the Convertible Note issued to Delaware Street Capital Master Fund, L.P., due to the fact Delaware Street Capital Master Fund, L.P. was a beneficial owner of more than 4.985% of the total number of shares of our common stock then issued and outstanding at the time of issuance, has a beneficial ownership cap equal to 19.985% of the total number of shares of our common stock then issued and outstanding. Pursuant to the Convertible Notes, the holders thereof have the option to demand repayment of all outstanding principal, and any unpaid interest accrued thereon, in connection with a Major Transaction (as defined in the Convertible Notes), which shall include, among others, any acquisition or other change of control of us; a liquidation, bankruptcy or other dissolution of us; or if at any time after March 31, 2023, shares of our common stock are not listed on an Eligible Market (as defined in the Convertible Notes). The Convertible Notes are subject to specified events of default, the occurrence of which would entitle the holders thereof to immediately demand repayment of all outstanding principal and accrued interest on the Convertible Notes. Such events of default include, among others, failure to make any payment under the Convertible Notes when due, failure to observe or perform any covenant under the Facility Agreement (as defined in the Convertible Notes) or the other transaction documents related thereto (subject to a standard cure period), our failure to be able to pay debts as they come due, the commencement of bankruptcy or insolvency proceedings against us, a material judgement levied against us and a material default by us under the Warrant or the Notes (each as defined in the Facility Agreement).

Outstanding Warrants

As of January 12, 2021, we had outstanding warrants to purchase up to 13,615,579 shares of our common stock at a weighted average exercise price of \$7.16 per share and which expire between October 24, 2023 and January 12, 2026. The warrants include a net exercise provision and contain provisions for the adjustment of the exercise price and the number of shares issuable upon the exercise of each warrant in the event of certain stock dividends, stock splits, reorganizations, reclassifications and consolidations. We have also granted registration rights to Deerfield Private Design Fund III, L.P., or Deerfield, as more fully described below under “—Registration Rights.”

In June 2014, in connection with our entering into a facility agreement, we issued to Deerfield a warrant, or the Deerfield Warrant, to purchase 14,423,076 shares of Series D redeemable convertible preferred stock at an exercise price of \$0.78 per share, which is exercisable until June 2, 2024. Upon completion of our initial public offering, the Deerfield Warrant automatically converted into a warrant to purchase 120,192 shares of our common stock at an exercise price of \$93.60 per share. According to the terms of the Deerfield Warrant, in no event may Deerfield exercise this warrant if such exercise would result in Deerfield beneficially owning more than 4.985% of the then issued and outstanding shares of our common stock. This exercise limitation may not be waived and any purported exercise that is inconsistent with this exercise limitation is null and void. This exercise limitation will not apply to any exercise made immediately prior to a change of control transaction. If Deerfield is only able to exercise the Deerfield Warrant for a limited number of shares due to this exercise limitation, the Deerfield Warrant could subsequently become exercisable to purchase the remainder of the shares as a result of a variety of events. This could occur, for example, if we issue more shares or Deerfield sells some of its existing shares. The Deerfield Warrant includes a net exercise provision and contains provisions for the adjustment of the exercise price and the number of shares issuable upon the exercise of the warrant in the event of certain stock dividends, stock splits, recapitalizations, reclassifications and consolidations. Under the Deerfield Warrant, Deerfield also has the right to demand upon the occurrence of specified events, including a merger, asset sale or other change of control transaction, that we redeem the Deerfield Warrant for a cash amount equal to the Black-Scholes value of the portion of the Deerfield Warrant to be redeemed. If Deerfield chooses not to redeem the Deerfield Warrant upon the occurrence of such an event, we may not enter into any such transaction unless our

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successor entity assumes in writing all our obligations under both the Deerfield Warrant and the Deerfield facility and provides Deerfield with certain registration rights.

The Deerfield Warrant includes certain exercise price protection provisions pursuant to which the exercise price of the Deerfield Warrant will be adjusted downward on a broad-based weighted average basis if we issue or sell any shares of common stock, convertible securities, warrants or options, including in this offering, at a sale or exercise price per share less than the greater of the Deerfield Warrant's exercise price or the closing sale price of our common stock on our principal market or exchange on the last trading date immediately prior to such issuance or, in the case of a firm commitment underwritten offering, on the date of execution of the underwriting agreement between us and the underwriters for such offering. The sale price for purposes of this adjustment is measured after giving effect to any underwriting discounts and commissions. This exercise price adjustment does not apply to certain specified sales and in any offering deemed by the SEC to constitute an "at the market offering" as defined in Rule 415 of the Securities Act of our common stock, the exercise price of the Deerfield Warrant will be adjusted downward pursuant to this anti-dilution adjustment only if such sales are made at a price less than \$93.60 per share.

In January 2021, we issued the Warrants and additional substantially similar warrants to purchase shares of our common stock pursuant to an underwriting agreement, or, collectively with the Warrants, the January 2021 Warrants. As of January 12, 2021, the January 2021 Warrants are exercisable for an aggregate of 12,885,293 shares of common stock at an exercise price per share of \$6.50; provided, that the January 2021 Warrants to purchase 806,932 shares of our common stock issued to the underwriters in our January 2021 public offering have an exercise price of \$8.125 per share.

The January 2021 Warrants are exercisable, at the option of each holder, in whole or in part, by delivering to the Company a duly executed exercise notice accompanied by payment in full for the number of shares of the Company's common stock purchased upon such exercise (except in the case of a cashless exercise). A holder (together with its affiliates) may not exercise any portion of a January 2021 Warrant to the extent that the holder would own more than 4.99% of the outstanding common stock immediately after exercise, except that upon at least 61 days' prior notice from the holder of a January 2021 Warrant issued under the underwriting agreement, the holder may increase the amount of beneficial ownership of outstanding stock after exercising the holder's January 2021 Warrant up to 9.99% of the number of shares of our common stock outstanding immediately after giving effect to the exercise, as such percentage ownership is determined in accordance with the terms of the January 2021 Warrant and Delaware law. Purchasers of January 2021 Warrants under the underwriting agreement may have also elected prior to the issuance of the January 2021 Warrants to have the initial exercise limitation set at 9.99% of our outstanding common stock.

If, at the time a holder exercises its January 2021 Warrants, a registration statement registering the issuance of the shares of common stock underlying such January 2021 Warrant under the Securities Act is not then effective or available for the issuance of such shares, then in lieu of making the cash payment otherwise contemplated to be made to us upon such exercise in payment of the aggregate exercise price, the holder may elect instead to receive upon such exercise (either in whole or in part) the net number of shares of common stock determined according to a formula set forth in the January 2021 Warrants.

In the event of a fundamental transaction, as described in the January 2021 Warrants and generally including any reorganization, recapitalization or reclassification of our common stock, the sale, transfer or other disposition of all or substantially all of our properties or assets, a consolidation or merger of us with or into another person, the acquisition of more than 50% of our outstanding common stock, or any person or group becoming the beneficial owner of 50% of the voting power represented by our outstanding common stock, the holders of the January 2021 Warrants will be entitled to receive upon exercise of the January 2021 Warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the January 2021 Warrants immediately prior to such fundamental transaction. In addition, in the event of a fundamental transaction which is approved by our board of directors, the holders of the January 2021 Warrants have the right to that we or a successor entity to redeem the January 2021 Warrants for cash in the amount of the Black Scholes value of the unexercised portion of the January 2021 Warrants on the date of the consummation of the fundamental transaction. In the event of a fundamental transaction which is not approved by our board of directors, the holders of the January 2021 Warrants have the right to require that we or a successor entity to redeem the January 2021 Warrants in the amount of the Black Scholes value of the unexercised portion of the January 2021 Warrants on the date of the consummation of the fundamental transaction payable in the form of consideration paid to the holders of our common stock in such fundamental transaction.

Registration Rights

December 2020 Exchange Agreement

Pursuant to the terms of the December 2020 Exchange Agreement, we have agreed to, for the benefit of the noteholders party thereto, file the registration statement on Form S-3 of which this prospectus is a part to register for resale under the Securities Act the shares of common stock issuable upon exercise of the Warrants or conversion of the shares of Series B-2 Preferred Stock issued pursuant to the terms of the December 2020 Exchange Agreement. We will pay all expenses related to the registration of these securities.

Investors' Rights Agreement

We and the holders of shares of our common stock issued upon the conversion or reclassification of our redeemable convertible preferred stock have entered into an investors' rights agreement. The registration rights provisions of this agreement expired as to all holders of our capital stock, other than Deerfield, on the second anniversary of our initial public offering. The registration rights provisions of our investors' rights agreement currently provide Deerfield with the registration rights described in more detail below. The following information is qualified entirely by reference to the applicable provisions of the investors' rights agreement, which is incorporated by reference as an exhibit into the registration statement of which this prospectus is a part.

Demand Registration Rights

Deerfield has the right to demand that we file a Form S-1 registration statement, as long as the anticipated aggregate offering price, net of underwriting discounts and commissions, would exceed \$15.0 million. These registration rights are subject to specified conditions and limitations, including the right of the underwriters, if any, to limit the number of shares included in any such registration under specified circumstances. Upon such a request, we are required to effect the registration as soon as reasonably possible.

Piggyback Registration Rights

If we propose to register any of our securities under the Securities Act either for our own account or for the account of other stockholders, Deerfield will be entitled to include its shares of our common stock in the registration statement. These piggyback registration rights are subject to specified conditions and limitations, including the right of the underwriters to limit the number of shares included in any such registration under specified circumstances. Deerfield has waived these rights as they may apply to the filing of the registration statement of which this prospectus is a part.

Registration on Form S-3

Deerfield is entitled, upon its written request, to have such shares registered by us on a Form S-3 registration statement at our expense, subject to other specified conditions and limitations.

Expenses of Registration

We will pay all expenses relating to any demand, piggyback or Form S-3 registration, other than underwriting discounts and commissions, subject to specified conditions and limitations.

Termination of Registration Rights

The registration rights granted under the investors' rights agreement terminated as to all the holders of our capital stock, other than Deerfield, on the two-year anniversary of our initial public offering. These registration rights will terminate as to Deerfield upon the earliest to occur of (i) written consent of Deerfield, (ii) such time that the Deerfield Warrant and Note owned by Deerfield have been exercised or converted, as applicable, in full and Rule 144 or another similar exemption under the Securities Act is available for the sale of all shares of our capital stock held by Deerfield without limitation during a three-month period without registration or (iii) six-months following the later to occur of (x) the expiration of the Deerfield Warrant and (y) payment in full or termination of the Deerfield Note.

Anti-Takeover Provisions

Section 203 of the Delaware General Corporation Law

We are subject to Section 203 of the Delaware General Corporation Law, which prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years after the date that such stockholder became an interested stockholder, with the following exceptions:

- before such date, the board of directors of the corporation approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction began, excluding for purposes of determining the voting stock outstanding, but not the outstanding voting stock owned by the interested stockholder, those shares owned (i) by persons who are directors and also officers and (ii) employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- on or after such date, the business combination is approved by the board of directors and authorized at an annual or special meeting of the stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock that is not owned by the interested stockholder.

In general, Section 203 defines a “business combination” to include the following:

- any merger or consolidation involving the corporation and the interested stockholder;
- any sale, transfer, pledge or other disposition of 10% or more of the assets of the corporation involving the interested stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation to the interested stockholder;
- any transaction involving the corporation that has the effect of increasing the proportionate share of the stock or any class or series of the corporation beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits by or through the corporation.

In general, Section 203 defines an “interested stockholder” as an entity or person who, together with the person’s affiliates and associates, beneficially owns, or within three years prior to the time of determination of interested stockholder status did own, 15% or more of the outstanding voting stock of the corporation.

Certificate of Incorporation and Bylaws

Our amended and restated certificate of incorporation provides for our board of directors to be divided into three classes with staggered three-year terms. Only one class of directors will be elected at each annual meeting of our stockholders, with the other classes continuing for the remainder of their respective three-year terms. Because our stockholders do not have cumulative voting rights, stockholders holding a majority of the shares of our common stock outstanding will be able to elect all of our directors. Our amended and restated certificate of incorporation and our amended and restated bylaws also provide that directors may be removed by the stockholders only for cause upon the vote of 66 2/3% or more of our outstanding common stock. Furthermore, the authorized number of directors may be changed only by resolution of the board of directors, and vacancies and newly created directorships on the board of directors may, except as otherwise required by law or determined by the board of directors, only be filled by a majority vote of the directors then serving on the board of directors, even though less than a quorum.

Our amended and restated certificate of incorporation and amended and restated bylaws also provide that all stockholder actions must be effected at a duly called meeting of stockholders and eliminates the right of stockholders to act by written consent without a meeting. Our amended and restated bylaws also provide that only our chairman of the board, chief executive officer or the board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors may call a special meeting of stockholders.

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Our amended and restated bylaws also provide that stockholders seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide timely advance notice in writing, and specify requirements as to the form and content of a stockholder's notice.

Our amended and restated certificate of incorporation and amended and restated bylaws provide that the stockholders cannot amend many of the provisions described above except by a vote of 66 2/3% or more of our outstanding common stock.

The combination of these provisions make it more difficult for our existing stockholders to replace our board of directors as well as for another party to obtain control of us by replacing our board of directors. Since our board of directors has the power to retain and discharge our officers, these provisions also make it more difficult for existing stockholders or another party to effect a change in management. In addition, the authorization of undesignated preferred stock makes it possible for our board of directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to change our control.

These provisions are intended to enhance the likelihood of continued stability in the composition of our board of directors and its policies and to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to reduce our vulnerability to hostile takeovers and to discourage certain tactics that may be used in proxy fights. However, such provisions could have the effect of discouraging others from making tender offers for our shares and may have the effect of delaying changes in our control or management. As a consequence, these provisions may also inhibit fluctuations in the market price of our stock that could result from actual or rumored takeover attempts. We believe that the benefits of these provisions, including increased protection of our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure our company, outweigh the disadvantages of discouraging takeover proposals, because negotiation of takeover proposals could result in an improvement of their terms.

Choice of Forum

Our amended and restated bylaws provide that (1) unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware (or, if and only if the Court of Chancery of the State of Delaware lacks subject matter jurisdiction, any state court located within the State of Delaware or, if and only if all such state courts lack subject matter jurisdiction, the federal district court for the District of Delaware) shall be the sole and exclusive forum for the following types of actions or proceedings under Delaware statutory or common law: (A) any derivative action or proceeding brought on behalf of us; (B) any action or proceeding asserting a claim of breach of a fiduciary duty owed by any current or former director, officer or other employee of us, to us or our stockholders; (C) any action or proceeding asserting a claim against us any current or former director, officer or other employee of us, arising out of or pursuant to any provision of the Delaware General Corporation Law, or the DGCL, our amended and restated certificate of incorporation or our amended and restated bylaws (as each may be amended from time to time); (D) any action or proceeding to interpret, apply, enforce or determine the validity of our amended and restated certificate of incorporation or our amended and restated bylaws (including any right, obligation, or remedy thereunder); (E) any action or proceeding as to which the DGCL confers jurisdiction to the Court of Chancery of the State of Delaware; and (F) any action or proceeding asserting a claim against us or any director, officer or other employee of us, governed by the internal affairs doctrine, in all cases to the fullest extent permitted by law and subject to the court's having personal jurisdiction over the indispensable parties named as defendants, *provided that* this provision shall not apply to suits brought to enforce a duty or liability created by the Securities Act or the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction; (2) unless we consent in writing to the selection of an alternative forum, to the fullest extent permitted by law, the federal district courts of the United States of America shall be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act; and (3) any person or entity holding, owning or otherwise acquiring any interest in any of our securities shall be deemed to have notice of and consented to the provisions of our amended and restated bylaws.

Listing

Our common stock is listed on The Nasdaq Capital Market under the trading symbol "KMPH."

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Computershare Trust Company, N.A. The transfer agent's address is 144 Fernwood Avenue, Edison, NJ 08837.

PLAN OF DISTRIBUTION

We are registering the resale of shares of common stock issuable upon conversion of the shares of Series B-2 Preferred Stock or exercise of the Warrants held by the selling stockholders from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the selling stockholders of the shares of common stock. We will bear all fees and expenses incident to our obligation to register the shares of common stock, except that, if the shares of common stock are sold through underwriters or broker-dealers, the selling stockholders will be responsible for underwriting discounts or commissions or agent's commissions.

The selling stockholders may sell all or a portion of the shares of our common stock beneficially owned by them and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. The shares of common stock may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions:

- on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale;
- in the over-the-counter market;
- in transactions otherwise than on these exchanges or systems or in the over-the-counter market;
- through the writing of options, whether such options are listed on an options exchange or otherwise, or through the issuance of other convertible or derivative securities or contracts to be settled in shares of our common stock;
- in ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- in block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- in purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- in an exchange distribution in accordance with the rules of the applicable exchange;
- in privately negotiated transactions;
- in connection with short sales or through the lending of such shares;
- in sales pursuant to Rule 144 of the Securities Act;
- through broker-dealers that agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share; through the distribution of such securities by any selling stockholder to its equity holders; by pledge to secure debts and other obligations or on foreclosure of a pledge
- by a combination of any such methods of sale; and
- by any other method permitted pursuant to applicable law.

If the selling stockholders effect such transactions by selling shares of our common stock to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or commissions from the selling stockholders or commissions from purchasers of the shares of our common stock for whom they may act as agent or to whom they may sell as principal (which discounts, concessions or commissions as to particular underwriters, broker-dealers or agents may be in excess of those customary in the types of transactions involved). In connection with sales of the shares of our common stock or otherwise, the selling stockholders may enter into hedging transactions with broker-dealers, which may in turn engage in short sales of the shares of our common stock in the course of hedging in positions they assume. The selling stockholders may also sell shares of our common stock short and deliver shares of our common stock covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The selling stockholders may also loan or pledge shares of our common stock to broker-dealers that in turn may sell such shares.

The selling stockholders may pledge or grant a security interest in some or all of the shares of our common stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured

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parties may offer and sell the shares of common stock from time to time pursuant to this prospectus or other applicable provisions of the Securities Act, amending, if necessary, the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholders also may transfer and donate the shares of our common stock in other circumstances in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

Any broker-dealer participating in the distribution of the shares of our common stock may be deemed to be “underwriters” within the meaning of the Securities Act, and any commission paid, or any discounts or concessions allowed to, any such broker-dealer may be deemed to be underwriting commissions or discounts under the Securities Act. At the time a particular offering of the shares of our common stock is made, a prospectus supplement, if required, will be distributed which will set forth the aggregate amount of shares of our common stock being offered and the terms of the offering, including the name or names of any broker-dealers or agents, any discounts, commissions and other terms constituting compensation from the selling stockholders and any discounts, commissions or concessions allowed or reallocated or paid to broker-dealers.

Under the securities laws of some states, the shares of our common stock may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares of our common stock may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

There can be no assurance that any selling stockholder will sell any or all of the shares of our common stock registered pursuant to the registration statement, of which this prospectus forms a part.

The selling stockholders and any other person participating in such distribution will be subject to applicable provisions of the Exchange Act, and the rules and regulations thereunder, including, without limitation, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the shares of our common stock by the selling stockholders and any other participating person. Regulation M may also restrict the ability of any person engaged in the distribution of the shares of our common stock to engage in market-making activities with respect to the shares of our common stock. All of the foregoing may affect the marketability of the shares of our common stock and the ability of any person or entity to engage in market-making activities with respect to the shares of our common stock.

We will pay all expenses of the registration of the shares of our common stock pursuant to the registration statement of which this prospectus forms a part, including, without limitation, SEC filing fees and expenses of compliance with state securities or “blue sky” laws; provided, however, that the selling stockholders will pay all underwriting discounts and selling commissions, if any. We will indemnify the selling stockholders against liabilities, including some liabilities under the Securities Act, or the selling stockholders will be entitled to contribution. We may be indemnified by the selling stockholders against civil liabilities, including liabilities under the Securities Act, that may arise from any written information furnished to us by the selling stockholders specifically for use in this prospectus or we may be entitled to contribution.

Once sold under the registration statement of which this prospectus forms a part, the shares of our common stock will be freely tradable in the hands of persons other than our affiliates.

EXPERTS

The financial statements of KemPharm, Inc. as of December 31, 2019 and 2018 and for each of the years in the two year period ended December 31, 2019, incorporated in this prospectus by reference from KemPharm, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2019, have been audited by RSM US LLP, an independent registered public accounting firm, as stated in their report thereon, which expresses an unqualified opinion and includes an explanatory paragraph regarding the uncertainty of KemPharm, Inc.'s ability to continue as a going concern, incorporated herein by reference, and have been incorporated in this prospectus and registration statement in reliance upon such report and upon the authority of such firm as experts in accounting and auditing.

LEGAL MATTERS

Certain legal matters, including the validity of the shares of common stock offered pursuant to this registration statement, will be passed upon for us by Cooley LLP, Broomfield, Colorado.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We must comply with the informational requirements of the Exchange Act, and we are required to file reports and proxy statements and other information with the SEC. You may read and copy these reports, proxy statements and other information on the SEC's website at <http://www.sec.gov>, which contains reports, proxy and information statements and other information regarding issuers like us that file electronically with the SEC. We maintain a website at www.kempharm.com. The information contained in, or that can be accessed through, our website is not incorporated by reference herein and is not part of this prospectus.

Statements contained in this prospectus as to the contents of any contract or other document are not necessarily complete, and in each instance we refer you to the copy of the contract or document filed as an exhibit to the registration statement, each such statement being qualified in all respects by such reference.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" information that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is an important part of this prospectus. Information in this prospectus supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus, while information that we file later with the SEC will automatically update and supersede the information in this prospectus. We also incorporate by reference into this prospectus the documents listed below (File No. 001-36913) and any future filings made by us with the SEC (other than current reports or portions thereof furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items and other portions of documents that are furnished, but not filed, pursuant to applicable rules promulgated by the SEC) that are filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (i) after the date of the initial filing of the registration statement of which this prospectus is a part and prior to effectiveness of the registration statement, and (ii) after the effectiveness of the registration statement but prior to the termination of the offering of the securities covered by this prospectus:

- our Annual Report on Form 10-K for the year ended December 31, 2019, filed with the SEC on [February 28, 2020](#), and as amended by Amendment No. 1 to our Annual Report on Form 10-K for the year ended December 31, 2019, filed with the SEC on [April 8, 2020](#);
- our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2020, June 30, 2020 and September 30, 2020, filed with the SEC on [May 13, 2020](#), [August 12, 2020](#) and [October 30, 2020](#), respectively;
- our Current Reports on Form 8-K filed on [January 10, 2020](#), [January 13, 2020](#), [January 16, 2020](#), [February 10, 2020](#), [February 18, 2020](#), [April 2, 2020](#), [April 13, 2020](#), [May 4, 2020](#), [May 20, 2020](#), [June 19, 2020](#), [June 24, 2020](#), [July 17, 2020](#), [September 25, 2020](#), [October 26, 2020](#), [November 19, 2020](#), [November 23, 2020](#) (as amended by Amendment No. 1 to Current Report on Form 8-K filed on [November 24, 2020](#)), [December 21, 2020](#), [December 28, 2020](#), [December 28, 2020](#), [January 5, 2021](#) and [January 13, 2021](#);

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- the description of our common stock in our registration statement on [Form 8-A](#) filed with the SEC on January 5, 2021, including any amendments or reports filed for the purpose of updating such description; and
- our audited financial statements for the fiscal year ended December 31, 2019 and our unaudited financial statements for the three and nine month periods ended September 30, 2020 included in our prospectus dated January 8, 2021, filed pursuant to Rule [424\(b\)](#) under the Securities Act relating to the Registration Statement on Form S-1 (File No. 333-250945).

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, without charge upon written or oral request, a copy of any or all of the documents that are incorporated by reference into this prospectus but not delivered with the prospectus, including exhibits that are specifically incorporated by reference into such documents. You should direct any requests for documents to KemPharm, Inc., Attn: Corporate Secretary, 1180 Celebration Boulevard, Suite 103, Celebration, FL 34747; telephone: (321) 939-3416.

In accordance with Rule 412 of the Securities Act, any statement contained in a document incorporated by reference herein shall be deemed modified or superseded to the extent that a statement contained herein or in any other subsequently filed document that also is or is deemed to be incorporated by reference herein modifies or supersedes such statement.

PART II**INFORMATION NOT REQUIRED IN PROSPECTUS****Item 14. Other Expenses of Issuance and Distribution.**

The following is a statement of the estimated expenses to be incurred by us in connection with the registration of the securities under this registration statement, all of which will be borne by us.

Securities and Exchange Commission Registration Fee	\$ 5,123
Legal Fees and Expenses	\$ 50,000
Accounting Fees and Expenses	\$ 20,000
Miscellaneous	\$ 24,877
Total	\$ 100,000

Item 15. Indemnification of Directors and Officers.

Under Section 145 of the Delaware General Corporation Law, or DGCL, we have broad powers to indemnify our directors and officers against liabilities they may incur in such capacities, including liabilities under the Securities Act. Section 145 of the DGCL generally provides that a Delaware corporation has the power to indemnify its present and former directors, officers, employees and agents against expenses incurred by them in connection with any suit to which they are, or are threatened to be made, a party by reason of their serving in such positions so long as they acted in good faith and in a manner they reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action, they had no reasonable cause to believe their conduct was unlawful.

Our amended and restated certificate of incorporation and amended and restated bylaws include provisions that (i) eliminate the personal liability of our directors for monetary damages resulting from breaches of their fiduciary duty to the fullest extent permitted under applicable law, (ii) require us to indemnify our directors and executive officers to the fullest extent permitted by the DGCL or other applicable law and (iii) provide us with the power, in our discretion, to indemnify our other officers, employees and other agents as set forth in the DGCL or other applicable law. We believe that these provisions of our amended and restated certificate of incorporation and amended and restated bylaws are necessary to attract and retain qualified persons as directors and officers. These provisions do not eliminate our directors' or officers' duty of care, and, in appropriate circumstances, equitable remedies such as injunctive or other forms of non-monetary relief will remain available under the DGCL. In addition, each director will continue to be subject to liability pursuant to Section 174 of the DGCL, for breach of such director's duty of loyalty to us, for acts or omissions not in good faith or involving intentional misconduct, for knowing violations of law, for acts or omissions that such director believes to be contrary to our best interests or the best interests of our stockholders, for any transaction from which such director derived an improper personal benefit, for acts or omissions involving a reckless disregard for such director's duty to us or to our stockholders when such director was aware or should have been aware of a risk of serious injury to us or to our stockholders, for acts or omission that constitute an unexcused pattern of inattention that amounts to an abdication of such director's duty to us or to our stockholders, for improper transactions between such director and us and for improper loans to directors and officers. These provisions also do not affect a director's responsibilities under any other law, such as the federal securities laws or state or federal environmental laws.

As permitted by Delaware law, we have entered into indemnification agreements with each of our current directors and officers pursuant to the foregoing provisions. We have an insurance policy covering our officers and directors with respect to certain liabilities, including liabilities arising under the Securities Act or otherwise.

Item 16. Exhibit Index.

<u>Exhibit No.</u>	<u>Description</u>
3.1	Amended and Restated Certificate of Incorporation of KemPharm, Inc. (incorporated herein by reference to the Registrant's Current Report on Form 8-K as filed with the SEC on April 21, 2015)

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<u>Exhibit No.</u>	<u>Description</u>
3.1.1	<u>Certificate of Designation of Preferences, Rights and Limitations of Series A Convertible Preferred Stock of KemPharm, Inc. (incorporated herein by reference to the Registrant's Current Report on Form 8-K as filed with the SEC on October 5, 2018).</u>
3.1.2	<u>Certificate of Designation of Preferences, Rights and Limitations of Series B-1 Convertible Preferred Stock of KemPharm, Inc. (incorporated herein by reference to the Registrant's Current Report on Form 8-K as filed with the SEC on September 4, 2019).</u>
3.1.3	<u>Amended and Restated Certificate of Designation of Preferences, Rights and Limitations of Series B-2 Convertible Preferred Stock of KemPharm, Inc. (incorporated herein by reference to the Registrant's Current Report on Form 8-K as filed with the SEC on January 13, 2021).</u>
3.1.4	<u>Certificate of Amendment to Amended and Restated Certificate of Incorporation of the Registrant (incorporated herein by reference to the Registrant's Current Report on Form 8-K as filed with the SEC on December 26, 2020)</u>
3.2	<u>Amended and Restated Bylaws of the Registrant (incorporated by reference to Exhibit 10.1 to the Registrant's Current Report on Form 8-K, filed with the SEC on July 17, 2020).</u>
4.1	<u>Form of Common Stock Certificate (incorporated by reference to Exhibit 4.1 to Amendment No. 1 to the Registrant's Registration Statement on Form S-1 (File No. 333-208916), filed with the SEC on March 18, 2016).</u>
4.2	<u>Form of Common Stock Warrant (incorporated herein by reference to the Registrant's Current Report on Form 8-K as filed with the SEC on January 13, 2021).</u>
4.3	<u>Amended and Restated Investors' Rights Agreement, dated as of February 19, 2015, by and among the Registrant and certain of its stockholders (incorporated herein by reference to the Registrant's Registration Statement on Form S-1 (File No. 333-202660) as filed with the SEC on March 11, 2015).</u>
4.4	<u>December 2020 Exchange Agreement and Amendment to Facility Agreement, Notes and Investors' Rights Agreement (incorporated herein by reference to the Registrant's Current Report on Form 8-K as filed with the SEC on December 21, 2020).</u>
4.5	<u>Amendment to Facility Agreement, Notes and to December 2020 Exchange Agreement, dated as of December 24, 2020, by and among the Registrant, Deerfield Private Design Fund III, L.P. and Deerfield Special Situations Fund, L.P. (incorporated herein by reference to the Registrant's Current on Form 8-K as filed on December 28, 2020).</u>
4.6	<u>Joinder Agreement, dated as of December 23, 2020, by and between the Registrant and Delaware Street Capital Master Fund, L.P. (incorporated herein by reference to the Registrant's Current on Form 8-K as filed on December 28, 2020).</u>
4.7	<u>Joinder Agreement, dated as of December 23, 2020, by and between the Registrant and M. Kingdon Offshore Master Fund, LP (incorporated herein by reference to the Registrant's Current on Form 8-K as filed on December 28, 2020).</u>
5.1	<u>Opinion of Cooley LLP.</u>
23.1	<u>Consent of Independent Registered Public Accounting Firm.</u>
23.2	<u>Consent of Cooley LLP (included in legal opinion filed as Exhibit 5.1).</u>
24.1	<u>Power of Attorney (included on signature page).</u>

Item 17. Undertakings.

The undersigned registrant hereby undertakes:

- (a)(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;
 - (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 the aggregate, represent a

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fundamental change in the information set forth in the 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 Securities and Exchange Commission (the "SEC") pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement;

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

provided, however, that paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) of this section do not apply if the registration statement is on Form S-3 and the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the registrant pursuant to Section 13 or Section 15(d) of Exchange Act that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the 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.
- (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.
- (4) That, for the purpose of determining liability under the Securities Act to any purchaser:
 - (i) each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (ii) each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5) or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which the prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

- (b) The undersigned registrant 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 Section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement 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.
- (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 foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the SEC 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 of the registrant in connection with the securities

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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.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Celebration, State of Florida, on January 13, 2021.

KEMPHARM, INC.

By: /s/ Travis C. Mickle, Ph.D.
Travis C. Mickle, Ph.D.
President, Chief Executive Officer and Chairman of the
Board of Directors (Principal Executive Officer)

POWER OF ATTORNEY

Each person whose signature appears below constitutes and appoints Travis C. Mickle, Ph.D. and R. LaDuane Clifton, CPA as his or her true and lawful attorney-in-fact and agent with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any or all amendments (including post-effective amendments) to this Registration Statement on Form S-3, and to file the same, with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorney-in-fact and agent, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorney-in-fact and agent, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
<u>/s/ Travis C. Mickle, Ph.D.</u> Travis C. Mickle, Ph.D.	President, Chief Executive Officer and Chairman of the Board of Directors (Principal Executive Officer)	January 13, 2021
<u>/s/ R. LaDuane Clifton, CPA</u> R. LaDuane Clifton, CPA	Chief Financial Officer, Secretary and Treasurer (Principal Financial Officer)	January 13, 2021
<u>/s/ Timothy J. Sangiovanni, CPA</u> Timothy J. Sangiovanni, CPA	Vice President, Corporate Controller (Principal Accounting Officer)	January 13, 2021
<u>/s/ Matthew R. Plooster</u> Matthew R. Plooster	Director	January 13, 2021
<u>/s/ Richard W. Pascoe</u> Richard W. Pascoe	Director	January 13, 2021
<u>/s/ Joseph B. Saluri</u> Joseph B. Saluri	Director	January 13, 2021
<u>/s/ David S. Tierney</u> David S. Tierney	Director	January 13, 2021



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

January 13, 2021

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

Ladies and Gentlemen:

We have acted as counsel to KemPharm, Inc., a Delaware corporation (the "**Company**"), in connection with the filing by the Company of a Registration Statement on Form S-3 (the "**Registration Statement**") with the Securities and Exchange Commission, covering the registration for resale of 8,474,709 shares of the Common Stock, \$0.0001 par value, of the Company on behalf of certain selling stockholders (the "**Shares**"). The Shares are issuable upon exercise of warrants issued by the Company (the "**Warrants**") and conversion of shares of the Company's Series B-2 Preferred Stock, \$0.0001 par value (the "**Series B-2 Shares**"). The Warrants and the Series B-2 Shares were issued by the Company pursuant to that certain December 2020 Exchange Agreement and Amendment to Facility Agreement, Notes and Investors' Rights Agreement, dated December 20, 2020, as amended by that certain Amendment to Facility Agreement, Notes and to December 2020 Exchange Agreement, dated as of December 24, 2020, by and among the Company and the Participating Lenders named therein (collectively, the "**December 2020 Exchange Agreement**").

In connection with this opinion, we have examined and relied upon the Registration Statement, the Prospectus included in the Registration Statement, the Company's Amended and Restated Certificate of Incorporation, the Company's Amended and Restated Bylaws, the December 2020 Exchange Agreement 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 and authenticity of all documents submitted to us as originals; the conformity to originals of all documents submitted to us as copies thereof; 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 by the Company where due authorization, execution and delivery are a prerequisite to the effectiveness thereof. As to certain factual matters, we have relied upon a certificate of an officer of the Company and have not independently verified such matters.

Our opinion is expressed only with respect to the General Corporation Law of the State of Delaware. 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.

On the basis of the foregoing, and in reliance thereon, we are of the opinion that the Shares, when issued upon exercise of the Warrants in accordance with the terms of the Warrants and upon conversion of the Series B-2 Shares in accordance with the terms of the Series B-2 Shares, will be validly issued, fully paid and nonassessable.

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KemPharm, Inc.
January 13, 2021
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We consent to the reference to our firm under the caption “Legal Matters” in the Prospectus and to the filing of this opinion as an exhibit to the Registration Statement.

Sincerely,

COOLEY LLP

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

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Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in this Registration Statement on Form S-3 and related Prospectus of KemPharm, Inc. of our report dated February 28, 2020, relating to the financial statements of KemPharm, Inc. appearing in the Annual Report on Form 10-K of KemPharm, Inc. for the year ended December 31, 2019.

We also consent to the incorporation by reference in this Registration Statement on Form S-3 and related Prospectus of KemPharm, Inc. 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. included in the prospectus dated January 8, 2021, filed pursuant to Rule 424(b) under the Securities Act relating to the Registration Statement Form S-1 (No. 333-250945).

We also consent to the reference to our firm under the heading “Experts” in such Prospectus.

/s/ RSM US LLP

Orlando, FL
January 13, 2021