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

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**POST-EFFECTIVE AMENDMENT NO. 2 TO  
FORM S-1  
ON FORM S-3  
REGISTRATION STATEMENT  
UNDER  
THE SECURITIES ACT OF 1933**

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**KEMPHARM, INC.**

(Exact name of registrant as specified in its charter)

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**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)

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**TRAVIS C. MICKLE, PH.D.  
President and Chief Executive Officer  
KemPharm, Inc.  
1180 Celebration Boulevard, Suite 103  
Celebration, FL 34747  
(321) 939-3416**

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

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***Copies to:***

**Cheston J. Larson, Esq.  
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Latham & Watkins LLP  
12670 High Bluff Drive  
San Diego, California 92130  
(858) 523-5400**

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**APPROXIMATE DATE OF COMMENCEMENT OF PROPOSED SALE TO THE PUBLIC:** From time to time after the effective date of this registration statement.

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

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

Large accelerated filer   
Non-accelerated filer

Accelerated filer   
Smaller reporting company   
Emerging growth company

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

**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 or until the registration statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.**

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## EXPLANATORY NOTE

On November 25, 2020, KemPharm, Inc. (the “Company”) filed a registration statement with the Securities and Exchange Commission (the “SEC”) on Form S-1 (Registration No. 333-250945) (the “Registration Statement” or the “Form S-1”). The Registration Statement was declared effective by the SEC on January 7, 2021, to register the offer and sale of (i) 6,765,463 shares of common stock, \$0.0001 par value per share (“Common Stock”), (ii) warrants to purchase up to 7,692,307 shares of common stock (the “Warrants”), (iii) pre-funded warrants to purchase 926,844 shares of common stock (the “Pre-Funded Warrants”) and (iv) the underwriter warrants to purchase 806,932 shares of common stock (the “Underwriter Warrants”). A Post-Effective Amendment No. 1 to the Form S-1 was filed on January 8, 2021. As of December 31, 2021, Warrants to purchase 7,080,158 shares of common stock had been exercised and Underwriter Warrants to purchase 400,000 shares of common stock had been exercised. As of December 31, 2021, all Pre-Funded Warrants had been exercised.

This Post-Effective Amendment No. 2 to the Form S-1 on Form S-3 (the “Post-Effective Amendment No. 2”), is being filed by the registrant to convert the Form S-1 into a registration statement on Form S-3. We are not registering any additional securities under this Post-Effective Amendment. All filing fees payable in connection with the registration of these securities were previously paid by us in connection with the filing of the Registration Statement on Form S-1 prior to its effectiveness.

**The information in this prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.**

**Subject to Completion, dated January 25, 2022.**

**PROSPECTUS**



**KEMPHARM, INC.**

**1,366,184 Shares of Common Stock Issuable Upon Exercise of Outstanding Warrants  
425,634 Shares of Common Stock Issuable upon Exercise of Underwriter Warrants**

This prospectus relates to the issuance of up to 1,366,184 shares of our common stock, \$0.0001 par value per share, issuable upon the exercise of the outstanding Warrants, at an exercise price of \$6.50 per share (the “Warrants”), and the issuance of up to 425,634 shares of common stock, \$0.0001 par value per share, issuable upon the exercise of the outstanding Underwriter Warrants, at an exercise price of \$8.125 (the “Underwriter Warrants”), that were issued as part of an underwritten public offering that closed on January 12, 2021. The Warrants expire on January 12, 2026, and the Underwriter Warrants expire on January 8, 2026. No securities are being offered pursuant to this prospectus other than the 1,366,184 shares of our common stock that will be issued upon the exercise of the Warrants and the 425,634 shares of our common stock that will be issued upon the exercise of the Underwriter Warrants.

For a more detailed description of our common stock, see the section entitled “Description of Capital Stock—Common Stock” beginning on page 7 of this prospectus. For a more detailed description of the Warrants and the Underwriter Warrants, see the section entitled “Description of Capital Stock—Warrants” beginning on page 9 of this prospectus. For a more detailed description of the securities we are offering, see the section entitled “Description of Securities” beginning on page 14 of this prospectus. We refer to the warrants offered and sold by us pursuant to this prospectus as the Warrants and the Underwriter Warrants. We refer to the shares of common stock issuable upon exercise of the Warrants and Underwriter Warrants as the securities. We provide more information about how the holders of the Warrants and Underwriter Warrants may purchase their securities in the section entitled “Plan of Distribution” on page 15 of this prospectus.

**INVESTING IN OUR SECURITIES INVOLVES RISKS. SEE THE [“RISK FACTORS”](#) ON PAGE 5 OF THIS PROSPECTUS AND ANY SIMILAR SECTION CONTAINED IN THE APPLICABLE PROSPECTUS SUPPLEMENT CONCERNING FACTORS YOU SHOULD CONSIDER BEFORE INVESTING IN OUR SECURITIES.**

Our common stock is listed on the Nasdaq Global Select Market under the symbol “KMPH.” On January 24, 2022, the last reported sale price of our common stock on the Nasdaq Global Select Market was \$6.65 per share.

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

**The date of this prospectus is \_\_\_\_\_, 2022.**

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## ABOUT THIS PROSPECTUS

This prospectus is part of a post-effective amendment to a registration statement, originally on Form S-1 and now on Form S-3, that we filed with the Securities and Exchange Commission, or the SEC, using a “shelf” registration or continuous offering process. This prospectus relates to the offer and sale of up to 1,366,184 shares of our common stock to be offered from time to time upon exercise of the Warrants and the offer and sale of up to 425,634 shares of our common stock to be offered from time to time upon exercise of the Underwriter Warrants.

You should rely on the information contained or incorporated by reference in this prospectus. We have not authorized any other person to provide you with different information. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. If anyone provides you with different or inconsistent information, you should not rely on it. We will not make an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus is accurate as of the date on its respective cover, and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference, unless we indicate otherwise. Our business, financial condition, results of operations and prospects may have changed since those dates. We urge you to carefully read this prospectus, together with the information incorporated herein by reference as described under the heading “Where You Can Find More Information; Incorporation by Reference.”

This prospectus incorporates by reference market data and industry statistics and forecasts that are based on independent industry publications and other publicly available information. Although we believe these sources are reliable, we do not guarantee the accuracy or completeness of this information and we have not independently verified this information. In addition, the market and industry data and forecasts that may be included or incorporated by reference in this prospectus, any prospectus supplement or any applicable free writing prospectus may involve estimates, assumptions and other risks and uncertainties and are subject to change based on various factors, including those discussed under the heading “Risk Factors” contained in this prospectus, the applicable prospectus supplement and any applicable free writing prospectus, and under similar headings in other documents that are incorporated by reference into this prospectus. Accordingly, investors should not place undue reliance on this information.

When we refer to “KemPharm,” “we,” “our,” “us” and the “Company” in this prospectus, we mean KemPharm, Inc., unless otherwise specified. When we refer to “you,” we mean the potential holders of the applicable series of 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. All other trademarks, trade names and service marks appearing in this prospectus are the property of their respective owners. Use or display by us of other parties’ trademarks, trade dress or products is not intended to and does not imply a relationship with, or endorsements or sponsorship of, us by the trademark or trade dress owner. Solely for convenience, trademarks and tradenames referred to in this prospectus appear without the ® and ™ symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or that the applicable owner will not assert its rights, to these trademarks and tradenames.

## WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE

### Available Information

We file reports, proxy statements and other information with the SEC. The SEC maintains a web site that contains reports, proxy and information statements and other information about issuers, such as us, who file electronically with the SEC. The address of that website is <http://www.sec.gov>.

Our web site address is [www.kempharm.com](http://www.kempharm.com). The information on our web site, however, is not, and should not be deemed to be, a part of this prospectus.

This prospectus is part of a registration statement that we filed with the SEC and does not contain all of the information in the registration statement. The full registration statement may be obtained from the SEC or us, as provided below. Other documents establishing the terms of the offered securities are or may be filed as exhibits to the registration statement or documents incorporated by reference in the registration statement. Statements in this prospectus about these documents are summaries and each statement is qualified in all respects by reference to the document to which it refers. You should refer to the actual documents for a more complete description of the relevant matters. You may inspect a copy of the registration statement through the SEC's website, as provided above.

### Incorporation by Reference

The SEC's rules allow us to "incorporate by reference" information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is deemed to be part of this prospectus, and subsequent information that we file with the SEC will automatically update and supersede that information. Any statement contained in this prospectus or a previously filed document incorporated by reference will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or a subsequently filed document incorporated by reference modifies or replaces that statement.

This prospectus and any accompanying prospectus supplement incorporate by reference the documents set forth below that have previously been filed with the SEC:

- Our Annual Report on [Form 10-K](#) for the year ended December 31, 2020, filed with the SEC on March 12, 2021.
- The information specifically incorporated by reference into our Annual Report on [Form 10-K](#) from our Definitive Proxy Statement on [Schedule 14A](#), filed with the SEC on April 30, 2021.
- Our Quarterly Reports on Form 10-Q for the quarters ended [March 31, 2021](#), [June 30, 2021](#), and [September 30, 2021](#), filed with the SEC on May 14, 2021, August 13, 2021, and November 10, 2021.
- Our Current Reports on Form 8-K and Amended Current Reports on Form 8-K/A filed with the SEC on [January 5, 2021](#), [January 13, 2021](#), [January 26, 2021](#), [January 27, 2021](#), [February 9, 2021](#), [March 3, 2021](#), [April 8, 2021](#), [June 23, 2021](#), [June 24, 2021](#), [July 2, 2021](#), [July 21, 2021](#), [August 18, 2021](#), [October 19, 2021](#), [November 10, 2021](#), [December 14, 2021](#), [December 20, 2021](#), and [January 19, 2022](#).
- The description of our Common Stock contained in our registration statement on [Form S-1](#), dated January 7, 2021, filed with the SEC on November 25, 2020, and any amendment or report filed with the SEC for the purpose of updating the description.

All reports and other documents we subsequently file pursuant to Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, as amended, which we refer to as the "Exchange Act" in this prospectus, prior to the termination of this offering, including all such documents we may file with the SEC after the date of the initial registration statement and prior to the effectiveness of the registration statement, but excluding any information furnished to, rather than filed with, the SEC, will also be incorporated by reference into this prospectus and deemed to be part of this prospectus from the date of the filing of such reports and documents.

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You may request a free copy of any of the documents incorporated by reference in this prospectus by writing or telephoning us at the following address:

KemPharm, Inc.  
Attn: Corporate Secretary  
1180 Celebration Boulevard, Suite 103  
Celebration, FL 34747  
(321) 939-3416

Exhibits to the filings will not be sent, however, unless those exhibits have specifically been incorporated by reference in this prospectus or any accompanying prospectus supplement.

## PROSPECTUS SUMMARY

*The following summary highlights selected information contained elsewhere in this Prospectus. This summary does not contain all the information that you should consider before investing in our securities. You should carefully read the entire Prospectus, paying particular attention to the risks referred to under the heading “Risk Factors.”*

### THE COMPANY

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 CNS and rare disease, including the high need areas idiopathic hypersomnia, or IH, and other sleep disorders, and stimulant use disorder, or SUD. Our approved product, AZSTARYS, formerly referred to as KP415, is based on our prodrug of d-methylphenidate, or d-MPH, known as serdexmethylphenidate, or SDX, and is intended for the treatment of ADHD. Our lead clinical development product candidate, KP1077, is also based on SDX and is intended for the treatment of IH. 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 AZSTARYS, and any other of our product candidates containing SDX, and d-MPH. In addition, we have entered into a commercial partnership with KVK-Tech, Inc., or KVK, for 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 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](http://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.

### 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.

## **RISK FACTORS**

Investment in any securities offered pursuant to this prospectus and the applicable prospectus supplement involves risks. You should carefully consider the risk factors incorporated by reference to our most recent Annual Report on Form 10-K and any subsequent Quarterly Reports on Form 10-Q or Current Reports on Form 8-K, and all other information contained or incorporated by reference into this prospectus, as updated by our subsequent filings under the Exchange Act, and the risk factors and other information contained in the applicable prospectus supplement and any applicable free writing prospectus before acquiring any of such securities. The occurrence of any of these risks might cause you to lose all or part of your investment in the offered securities.

## USE OF PROCEEDS

We may receive up to a total of approximately \$12,338,472 in gross proceeds if all of the Warrants and the Underwriter Warrants, outstanding as of January 25, 2022, are exercised for cash. However, as we are unable to predict the timing or amount of potential exercises of the Warrants and the Underwriter Warrants, we have not allocated any proceeds of such exercises to any particular purpose. It is possible that the Warrants and the Underwriter Warrants may expire and may never be exercised. Accordingly, we cannot plan on specific uses of proceeds beyond application of proceeds to working capital and general corporate purposes.

Pursuant to conditions set forth in the Warrants and the Underwriter Warrants, the Warrants and the Underwriter Warrants are exercisable under certain circumstances on a cashless basis, and should a holder elect to exercise on a cashless basis we will not receive any proceeds from the sale of common stock issued upon such cashless exercise.

## DESCRIPTION OF CAPITAL STOCK

The following description of our capital stock is not complete and may not contain all the information you should consider before investing in our capital stock. This description is summarized from, and qualified in its entirety by reference to, our certificate of incorporation, which has been publicly filed with the SEC. See “Where You Can Find More Information; Incorporation by Reference.”

### **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, all of which shares of preferred stock are undesignated. Our board of directors may establish the rights and preferences of the preferred stock from time to time. As of December 31, 2021, we had 35,005,640 shares of common stock outstanding and no shares of 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 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 common stock are entitled to receive ratably those dividends, if any, as may be declared from time to time by the board of directors out of legally available funds.

#### ***Liquidation***

In the event of our liquidation, dissolution or winding up, holders of 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 preferred stock.

#### ***Rights and Preferences***

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

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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 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 the common stock and may adversely affect the voting power of holders of common stock and reduce the likelihood that common stockholders will receive dividend payments and payments upon liquidation.

Our board of directors will fix the designations, voting powers, preferences and rights of each series, as well as the qualifications, limitations or restrictions thereof, 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 and 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;

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- 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 U.S. 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.

### **The Warrants**

The following summary of certain terms and provisions of the Warrants to purchase common stock that are being registered hereby (not including the Underwriter Warrants, as described below) is not complete and is subject to, and qualified in its entirety by, the provisions of the Warrants, the form of which is filed as an exhibit to the registration statement of which this prospectus forms a part.

#### ***Duration and Exercise Price***

The Warrants are exercisable from and after the date of their issuance and expire on January 12, 2026, at an exercise price of \$6.50 per share of common stock. The holder of a Warrant will not be deemed a holder of our underlying common stock until the Warrant is exercised. No fractional shares of common stock will be issued in connection with the exercise of the Warrants. Instead, for any such fractional share that would have otherwise been issued upon exercise of a Warrant, we will round such fraction down to the next whole share.

#### ***Exercisability***

The Warrants will be exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise (except in the case of a cashless exercise as discussed below). A holder (together with its affiliates) may not exercise any portion of the 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 to us, the holder may increase the amount of beneficial ownership of outstanding stock after exercising the holder's Warrants 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 Warrants and Delaware law.

#### ***Cashless Exercise***

If, at the time a holder exercises its Warrants, a registration statement registering the issuance of the shares of common stock underlying the Warrants 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 Warrants.

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### ***Transferability***

Subject to applicable laws, a Warrant may be transferred at the option of the holder upon surrender of the Warrant to us together with the appropriate instruments of transfer.

### ***Fractional Shares***

No fractional shares of common stock will be issued upon the exercise of Warrant. Rather, the number of shares of common stock to be issued will be rounded to the nearest whole number.

### ***Trading Market***

There is no established public trading market for the Warrants, and we do not expect a market to develop. In addition, we do not intend to apply to list the Warrants on any national securities exchange or other nationally recognized trading system. Without an active trading market, the liquidity of the Warrants will be limited.

### ***Right as a Stockholder***

Except as otherwise provided in the Warrants or by virtue of such holder's ownership of shares of our common stock, the holders of the Warrants do not have the rights or privileges of holders of our common stock with respect to the shares of common stock underlying the Warrants, including any voting rights, until they exercise their Warrants. The Warrants will provide that holders have the right to participate in distributions or dividends paid on our common stock.

### ***Fundamental Transaction***

In the event of a fundamental transaction, as described in the 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, our consolidation or merger 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 Warrants will be entitled to receive upon exercise of the Warrants the kind and amount of securities, cash or other property that the holders would have received had they exercised the Warrants immediately prior to such fundamental transaction.

### ***The Underwriter Warrant***

The Underwriter Warrants are subject to substantially the same terms and conditions as the Warrants, except that the Underwriter Warrants expire on January 8, 2026, and the exercise price for the Underwriter Warrants is \$8.125 per share.

### ***Registration Rights***

#### ***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 Private Design Fund III, L.P., or 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.

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### ***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) the written consent of Deerfield, (ii) such time that the warrant held by Deerfield, issued on June 2, 2014, or the Deerfield Warrant, has been exercised 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 expiration of the Deerfield Warrant.

### ***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

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- 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 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, only be filled by a majority vote of the directors then serving on the board, 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.

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.

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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.

### **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. The transfer agent for any series of preferred stock that we may offer under this prospectus will be named and described in the prospectus supplement for that series.

### **Listing on the Nasdaq Capital Market**

Our common stock is listed on the Nasdaq Global Select Market under the symbol "KMPH."

## DESCRIPTION OF SECURITIES

We are offering 1,366,184 shares of our common stock issuable upon the exercise of the outstanding Warrants and 425,634 shares of our common stock issuable upon the exercise of the outstanding Underwriter Warrants. The Warrants and Underwriter Warrants were offered and sold by us pursuant to a prospectus dated January 8, 2021. The material terms of our common stock are described in the section of this prospectus entitled “Description of Capital Stock” beginning on page 7 of this prospectus. The material terms of the Warrants and Underwriter Warrants for which the common stock offered by this prospectus will be issued when exercised are described in the sections of this prospectus entitled “Description of Capital Stock — The Warrants” beginning on page 9 and “Description of Capital Stock — The Underwriter Warrants” beginning on page 10 of this prospectus.

As used in this section only, “*KemPharm*,” “we,” “our” or “us” refer to KemPharm, Inc.

## PLAN OF DISTRIBUTION

This prospectus relates to 1,366,184 shares of our common stock issuable upon the exercise of the outstanding Warrants and 425,634 shares of our common stock issuable upon the exercise of the outstanding Underwriter Warrants. The Warrants and Underwriter Warrants were offered and sold by us in a public offering pursuant to a prospectus dated January 8, 2021. The Warrants are exercisable until January 12, 2026, at a current exercise price of \$6.50 per share of our common stock, subject to adjustment upon events specified in the Warrants, and the Underwriter Warrants are exercisable until January 8, 2026, at a current exercise price of \$8.125 per share of our common stock, subject to adjustment upon events specified in the Underwriter Warrants.

The exercise price per share of the Warrants and the Underwriter Warrants was negotiated between us, the underwriter and investors based on market conditions at the time of pricing, and may be at a discount to the current market price of our common stock. Therefore, the recent market price used throughout this prospectus may not be indicative of the actual exercise price.

The Warrants exercisable for 1,366,184 shares of our common stock and the Underwriter Warrants for 425,634 shares of common stock are outstanding, and no additional Warrants or Underwriter Warrants will be issued. We will deliver shares of our common stock upon exercise of a Warrant or an Underwriter Warrant in whole or in part. We will not issue fractional shares. Each Warrant and Underwriter Warrant contains instructions for exercise. In order to exercise a Warrant or an Underwriter Warrant, the holder must deliver to us, or our transfer agent, the information required by the Warrants or the Underwriter Warrant, along with payment of the exercise price for the shares to be purchased. We will then deliver shares of our common stock in the manner described above in the sections titled “Description of Capital Stock — The Warrants” and “Description of Capital Stock — The Underwriter Warrants”.

## **LEGAL MATTERS**

Latham & Watkins LLP will pass upon certain legal matters relating to the issuance and sale of the securities offered hereby on behalf of KemPharm, Inc. Additional legal matters may be passed upon for us or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement.

## **EXPERTS**

The financial statements of KemPharm, Inc. incorporated by reference in KemPharm, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2020 have been audited by RSM US LLP, independent registered public accounting firm, as set forth in their report thereon, 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.

**PART II**  
**INFORMATION NOT REQUIRED IN PROSPECTUS**

**Item 14. Other Expenses of Issuance and Distribution**

The following is an estimate of the expenses (all of which are to be paid by the registrant) that we may incur in connection with the securities being registered hereby. All amounts are estimates except the SEC registration fee.

SEC registration fee	\$7,057.84 (1)
Printing expenses	\$ 10,000
Legal fees and expenses	\$ 30,000
Accounting fees and expenses	\$ 20,000
Miscellaneous	\$ 7,942.16
Total	<u>\$ 75,000</u>

(1) Registration fees of \$7,057.84 were previously paid in connection with the filing of the original registration statement.

**Item 15. Indemnification of Directors and Officers**

Subsection (a) of Section 145 of the General Corporation Law of the State of Delaware, or the DGCL, empowers a corporation to indemnify any person who was or is a party or who is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that the person is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by the person in connection with such action, suit or proceeding if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe the person's conduct was unlawful.

Subsection (b) of Section 145 empowers a corporation to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that the person acted in any of the capacities set forth above, against expenses (including attorneys' fees) actually and reasonably incurred by the person in connection with the defense or settlement of such action or suit if the person acted in good faith and in a manner the person reasonably believed to be in or not opposed to the best interests of the corporation, except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

Section 145 further provides that to the extent a director or officer of a corporation has been successful on the merits or otherwise in the defense of any action, suit or proceeding referred to in subsections (a) and (b) of Section 145, or in defense of any claim, issue or matter therein, such person shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection therewith; that indemnification provided for by Section 145 shall not be deemed exclusive of any other rights to which the indemnified party may be entitled; and the indemnification provided for by Section 145 shall, unless otherwise provided when authorized or ratified, continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the

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benefit of such person's heirs, executors and administrators. Section 145 also empowers the corporation to purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against such person and incurred by such person in any such capacity, or arising out of his status as such, whether or not the corporation would have the power to indemnify such person against such liabilities under Section 145.

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 law 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. Exhibits**

<b>Exhibit Number</b>	<b>Description</b>
2.1	<a href="#"><u>Asset Purchase Agreement, by and between Shire LLC and Travis C. Mickle, Ph.D. and the Registrant, dated as of March 21, 2012 (incorporated herein by reference to the Registrant's Amendment No. 1 to Registration Statement on Form S-1/A (File No. 333-202660) as filed with the SEC on April 3, 2015).</u></a>
3.1	<a href="#"><u>Amended and Restated Certificate of Incorporation of KemPharm, Inc. (incorporated by reference to the Company's Current Report on Form 8-K (File No. 001-36913) as filed with the SEC on April 21, 2015).</u></a>
3.1.1	<a href="#"><u>Certificate of Amendment of Amended and Restated Certificate of Incorporation of KemPharm, Inc. (incorporated herein by reference to the Company's Current Report on Form 8-K as filed with the SEC on December 26, 2020).</u></a>
3.12	<a href="#"><u>Certificate of Elimination 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 June 23, 2021).</u></a>

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- 3.1.3 [Certificate of Elimination of Series B-1 Convertible Preferred Stock of KemPharm, Inc. \(incorporated herein by reference to the Registrant's Current Report on Form 8-K as filed with the SEC on June 23, 2021\).](#)
- 3.1.4 [Certificate of Elimination of Series B-2 Convertible Preferred Stock of KemPharm, Inc. \(incorporated herein by reference to the Registrant's Current Report on Form 8-K as filed with the SEC on June 23, 2021\).](#)
- 3.2 [Amended and Restated Bylaws of KemPharm, Inc. \(incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K, filed with the SEC on July 17, 2020\).](#)
- 4.1 [Form of Series A Common Stock Purchase Warrant \(incorporated by reference to Exhibit 4.10 of the Company's Registration Statement on Form S-1 \(File No. 333-250945\), as amended and declared effective by the SEC on January 7, 2021\).](#)
- 4.2 [Series A Common Stock Purchase Warrant for Underwriter \(incorporated by reference to Exhibit 4.4 to the Company's Report on Form 8-K filed with the SEC on January 13, 2021\).](#)
- 4.3 [Specimen stock certificate evidencing shares of Common Stock \(incorporated herein by reference to the Registrant's Annual Report on Form 10-K as filed with the SEC on March 12, 2021\).](#)
- 4.4 [Form of Common Stock Purchase Warrant and schedule of holders \(incorporated herein by reference to the Registrant's Current Report on Form 8-K as filed with the SEC on January 13, 2021\).](#)
- 4.5 [Form of Inducement Warrant \(incorporated herein by reference to the Registrant's Current Report on Form 8-K as filed with the SEC on January 26, 2021\).](#)
- 4.6 [Form of Inducement Warrant \(incorporated herein by reference to the Registrant's Current Report on Form 8-K as filed with the SEC on June 23, 2021\).](#)
- 4.7 [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\).](#)
- 5.1 [Opinion of Cooley LLP \(incorporated by reference to Exhibit 5.1 to the initial filing of the registration statement\).](#)
- 23.1 [Consent of Cooley LLP \(included in Exhibit 5.1\).](#)
- 23.2 [Consent of RSM US LLP, independent registered public accounting firm.](#)
- 24.1 [Powers of Attorney \(incorporated on the signature page to the initial registration statement\).](#)
- 24.2 [Power of Attorney of Tamara A. Seymour \(included on signature page\).](#)

### **Item 17. Undertakings**

(a) The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

(i) To include any prospectus required by Section 10(a)(3) of the Securities Act of 1933;

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

(iii) To include any material information with respect to the plan of distribution not previously disclosed in 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) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to section 13 or section 15(d) of the Securities Exchange Act of 1934 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 a part of the registration statement.*

(2) That, for the purpose of determining any liability under the Securities Act of 1933, 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 of 1933 to any purchaser:

(A) 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

(B) 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 of 1933 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 that 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.

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities:

The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

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- (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
- (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
- (iv) Any other communications that is an offer in the offering made by the undersigned registrant to the purchaser.

(b) The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Securities Exchange Act of 1934) 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 of 1933 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 Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

(d) The undersigned registrant hereby undertakes to file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of Section 310 of the Trust Indenture Act (the "Act") in accordance with the rules and regulations prescribed by the SEC under section 305(b)(2) of the Act.

## SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, 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, Florida, on January 25, 2022.

### 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 of the undersigned officers and directors of the registrant hereby severally constitutes and appoints Travis C. Mickle, Ph.D. and R. LaDuane Clifton, CPA and each of them, as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, and in any and all capacities, to file and sign any and all amendments, including post-effective amendments, to this registration statement and any other registration statement for the same offering that is to be effective under Rule 462(b) of the Securities Act of 1933, and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith 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 attorneys-in-fact and agents, or their substitute or substitutes, may lawfully do or cause to be done by virtue hereof. This power of attorney shall be governed by and construed with the laws of the State of Delaware and applicable federal securities laws.

Pursuant to the requirements of the Securities Act of 1933, as amended, this registration statement has been signed below by the following persons on behalf of the registrant in the capacities and on the dates indicated.

<u>SIGNATURE</u>	<u>TITLE</u>	<u>DATE</u>
<u>/s/ Travis C. Mickle, Ph.D.</u> <b>Travis C. Mickle, Ph.D.</b>	President and Chief Executive Officer (Principal Executive Officer)	January 25, 2022
<u>/s/ R. LaDuane Clifton, CPA</u> <b>R. LaDuane Clifton, CPA</b>	Chief Financial Officer, Secretary and Treasurer (Principal Financial Officer)	January 25, 2022
<u>/s/ Timothy J. Sangiovanni, CPA</u> <b>Timothy J. Sangiovanni, CPA</b>	Vice President, Corporate Controller (Principal Accounting Officer)	January 25, 2022
<u>*</u> <b>Richard W. Pascoe</b>	Director	January 25, 2022
<u>*</u> <b>Matthew R. Plooster</b>	Director	January 25, 2022
<u>*</u> <b>Joseph B. Saluri</b>	Director	January 25, 2022
<u>/s/ Tamara A. Seymour</u> <b>Tamara A. Seymour</b>	Director	January 25, 2022
<u>*</u> <b>David S. Tierney</b>	Director	January 25, 2022

**Consent of Independent Registered Public Accounting Firm**

We consent to the incorporation by reference in this Post-Effective Amendment No. 2 to Form S-1 (No. 333-250945) on Form S-3 and related Prospectus of KemPharm, Inc. of our report dated March 11, 2021, 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, 2020.

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

/s/ RSM US LLP

Orlando, Florida  
January 25, 2022