



6,765,463 Shares of Common Stock
Warrants to Purchase up to 7,692,307 Shares of Common Stock
Pre-Funded Warrants to Purchase up to 926,844 Shares of Common Stock

This prospectus supplement updates and should be read in conjunction with the prospectus dated January 8, 2021, or the Prospectus, relating to the offering of up to 6,765,463 shares of our common stock, warrants to purchase up to 7,692,307 shares of our common stock and pre-funded warrants to purchase 926,844 shares of our common stock, as well as an option to the underwriter in the offering to purchase up to an additional 1,153,846 shares of common stock and/or warrants to purchase up to 1,153,846 shares of our common stock, in any combination thereof. To the extent that there is any conflict between the information contained herein and the information contained in the Prospectus, the information contained herein supersedes and replaces such information.

Current Report

This prospectus supplement incorporates into the Prospectus the information contained in our attached Current Report on Form 8-K that we filed with the Securities and Exchange Commission on June 24, 2021, or the Form 8-K. The Form 8-K, as filed, is set forth below.

The information contained in this Prospectus Supplement No. 9 supplements and supersedes, in relevant part, the information contained in the Prospectus, as amended and supplemented to date. This Prospectus Supplement No. 9 is incorporated by reference into, and should be read in conjunction with, the Prospectus, as amended and supplemented to date, and is not complete without, and may not be delivered or utilized except in connection with, the Prospectus, as amended and supplemented to date.

The Prospectus, together with Prospectus Supplement No.1, Prospectus Supplement No. 2, Prospectus Supplement No. 3, Prospectus Supplement No. 4, Prospectus Supplement No. 5, Prospectus Supplement No. 6, Prospectus Supplement No. 7, Prospectus Supplement No. 8 and Prospectus Supplement No. 9, constitutes the prospectus required to be delivered by Section 5(b) of the Securities Act of 1933, as amended, with respect to offers and sales of the securities as set forth in the Prospectus, as amended and supplemented. All references in the Prospectus to “this prospectus” are amended to read “this prospectus (as supplemented and amended to date).”

Our common stock is traded on the Nasdaq Capital Market under the symbol “KMPH.” The last reported sale price of our common stock on June 23, 2021 was \$14.30 per share. You are urged to obtain current market quotations for our common stock.

Investing in our securities is highly speculative and involves a significant degree of risk. See “Risk Factors” beginning on page 9 of the Prospectus and the Risk Factors identified in our Annual Report for the year ended December 31, 2020 and in our Quarterly Report for the quarter ended March 31, 2021 for a discussion of information that should be considered before making a decision to purchase our securities.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus supplement is June 24, 2021.

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of Earliest Event Reported): June 24, 2021 (June 17, 2021)

KemPharm, Inc.

(Exact Name of Registrant as Specified in Its Charter)

Delaware
(State or Other Jurisdiction of Incorporation)

001-36913
(Commission File Number)

20-5894398
(IRS Employer Identification No.)

1180 Celebration Boulevard, Suite 103
Celebration, FL
(Address of Principal Executive Offices)

34747
(Zip Code)

Registrant's Telephone Number, Including Area Code: (321) 939-3416

Not Applicable
(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instructions A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock	KMPH	The Nasdaq Stock Market LLC (Nasdaq Capital Market)

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§ 230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§ 240.12b-2 of this chapter).

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Item 5.07 Submission of Matters to a Vote of Security Holders.

On June 17, 2021, KemPharm, Inc. (the “*Company*”) held its 2021 Annual Meeting of Stockholders (the “*2021 Annual Meeting*”), for the following purposes:

- to elect the nominees of the board of directors of the Company, Matthew R. Plooster and Joseph B. Saluri, to the Company's board of directors to hold office until the 2024 annual meeting of stockholders;
- to ratify the appointment of RSM US LLP as the independent registered public accounting firm of the Company for its fiscal year ending December 31, 2021;
- to approve, on an advisory basis, the compensation of the Company's named executive officers as disclosed in the proxy materials;
- to indicate, on an advisory basis, the preferred frequency of stockholder advisory votes on the compensation of the Company's named executive officers;
- to approve the Company's 2021 Employee Stock Purchase Plan; and
- to approve the Company's Amended and Restated 2014 Equity Incentive Plan.

Of the 28,489,300 shares outstanding as of the record date, 15,631,301 shares, or 54.87%, were present or represented by proxy at the 2021 Annual Meeting. At the 2021 Annual Meeting, each of Matthew R. Plooster and Joseph B. Saluri was re-elected as a director of the Company. Also at the 2021 Annual Meeting, the stockholders of the Company:

- ratified the appointment of RSM US LLP as the independent registered public accounting firm of the Company for its fiscal year ending December 31, 2021;
- approved, on an advisory basis, the compensation of the Company's named executive officers as disclosed in the proxy materials;
- indicated, on an advisory basis, a frequency of stockholder advisory votes on the compensation of the Company's named executive officers of 3 years;
- approved the Company's 2021 Employee Stock Purchase Plan; and
- approved the Company's Amended and Restated 2014 Equity Incentive Plan.

The final voting results on each of the matters submitted to a vote of stockholders at the 2021 Annual Meeting were as follows:

1. Election of Directors	For	Withheld	Broker Non-Votes		
Matthew R. Plooster	6,803,465	1,489,665	7,338,171		
Joseph B. Saluri	3,459,163	4,833,967	7,338,171		
2. Ratification of the appointment of RSM US LLP as the independent registered public accounting firm for the Company's fiscal year ending December 31, 2021	For	Against	Abstentions	Broker Non-Votes	
	13,086,299	106,227	2,438,775	—	
3. Approval, on an advisory basis, of the compensation of the Company's named executive officers as disclosed in the proxy materials	Three Years	Two Years	One Year	Abstain	Broker Non-Votes
	6,845,736	1,287,944	159,450		7,338,171
4. Indication, on an advisory basis, of the preferred frequency of stockholder advisory votes on the compensation of the Company's named executive officers	For	Against	Abstentions	Broker Non-Votes	
	5,017,547	798,429	2,377,505	99,649	7,338,171
5. Approval of the Company's 2021 Employee Stock Purchase Plan	For	Against	Abstentions	Broker Non-Votes	
	7,650,535	548,681	93,914	7,338,171	
6. Approval of the Company's Amended and Restated 2014 Equity Incentive Plan	For	Against	Abstentions	Broker Non-Votes	
	5,913,956	2,189,649	189,525	7,338,171	

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

KemPharm, Inc.

Date: June 24, 2021

By: /s/ R. LaDuane Clifton
R. LaDuane Clifton, CPA
Chief Financial Officer, Secretary and Treasurer