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

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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 May 13, 2021, or the Form 8-K. The Form 8-K, as filed, is set forth below.

The information contained in this Prospectus Supplement No. 7 supplements and supersedes, in relevant part, the information contained in the Prospectus, as amended and supplemented to date. This Prospectus Supplement No. 7 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 and Prospectus Supplement No. 7, 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 May 12, 2021 was $8.81 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 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 May 13, 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): May 13, 2021

KemPharm, Inc.
(Exact Name of Registrant as Specified in Its Charter)

Delaware	**001-36913**	**20-5894398**
(State or Other Jurisdiction of Incorporation)	**(Commission File Number)**	**(IRS Employer Identification No.)**

1180 Celebration Boulevard, Suite 103, Celebration, FL	**34747**
(Address of Principal Executive Offices)	**(Zip Code)**

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

(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 2.02 Results of Operations and Financial Condition.

On May 13, 2021, KemPharm, Inc., a Delaware corporation, or KemPharm, issued a press release announcing its financial results for the first quarter ended March 31, 2021, as well as information regarding a conference call and live audio webcast with slide presentation to discuss its financial results and recent business developments scheduled for Thursday, May 13, 2021 at 4:30 p.m. ET. A copy of the press release and presentation are furnished as Exhibit 99.1 and Exhibit 99.2, respectively, to this Current Report on Form 8-K. The information contained in the press release and presentation, furnished as Exhibit 99.1 and Exhibit 99.2, respectively, shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and is not incorporated by reference into any of KemPharm's filings under the Securities Act of 1933, as amended, or the Securities Act, whether made before or after the date hereof, except as shall be expressly set forth by specific reference in any such filing.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
99.1	Press Release titled "KemPharm Reports First Quarter 2021 Financial Results" dated May 13, 2021.
99.2	Presentation titled "First Quarter 2021 Results" dated May 13, 2021.

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: May 13, 2021

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

Exhibit 99.1

KemPharm Reports First Quarter 2021 Financial Results

Corporate and Regulatory Highlights

- AZSTARYS™ NDA approved by the FDA on March 2, 2021
- Announced amendment to Licensing Agreement with Gurnet Point Capital affiliate following FDA approval of AZSTARYS
- Received FDA clearance to initiate KP879 clinical program for the treatment of Stimulant Use Disorder
- Serdexmethylphenidate (SDX) classified as a Schedule IV Controlled Substance by the DEA

Financial Highlights

- Completed financial restructuring, which resulted in re-listing on The Nasdaq Capital Market, receipt of approximate gross proceeds of $94 million and no debt
- Reported Q1 2021 revenue of $12.1 million
- Q1 2021 net loss of ($0.54) per basic share and diluted share compared to a net loss of ($1.92) per basic share and diluted share for Q1 2020
- Total cash, cash equivalents and restricted cash was $76.0 million at March 31, 2021

Celebration, FL – May 13, 2021 – KemPharm, Inc. (NASDAQ: KMPH), a specialty pharmaceutical company focused on the discovery and development of proprietary prodrugs, today reported its financial results for the first quarter ended March 31, 2021.

“The first quarter of 2021 was nothing short of transformational for KemPharm, highlighted by the FDA approval of AZSTARYS, the completion of our financial restructuring, and the re-listing of our shares on Nasdaq,” said Travis C. Mickle, Ph.D., President and Chief Executive Officer of KemPharm. “As a result, we stand today as a company with a solid balance sheet and capital structure that is moving full force with our partners at GPC and Corium to soon launch AZSTARYS as a once-daily product for the treatment of attention deficit hyperactivity disorder (ADHD) in patients age six years and older.”

Dr. Mickle continued, “Following the close of the quarter, KemPharm further strengthened its position by agreeing to amend the License Agreement with an affiliate of GPC. We are now eligible to receive up to $590 million in future regulatory and sales milestone payments for AZSTARYS, as well as tiered royalty payments on a product-by-product basis for net sales. This is a significant increase from the original License Agreement and also provides an opportunity to adjust the economics of the License Agreement to optimize investment in the commercial launch of AZSTARYS. Ultimately, we believe this arrangement has the opportunity to produce significant shareholder value based on the market outlook for AZSTARYS.”

Dr. Mickle continued, “As we have noted in prior communications, KemPharm believes that the product label for AZSTARYS is potentially best-in-class, with several elements in the label providing clear points of differentiation from other commercially available methylphenidate ADHD products. We were pleased with the recent determination that serdexmethylphenidate (SDX), was classified as a Schedule IV controlled substance by the Drug Enforcement Administration (DEA) following a thorough review by the U.S. Department of Health and Human Services (HHS). SDX comprises 70% of the active pharmaceutical ingredient (API) in AZSTARYS, which is classified as a Schedule II controlled substance. In short, the agencies determined that SDX has a generally low potential for abuse and a lower potential for abuse when compared to d-MPH, a Schedule II controlled substance. Having SDX designated as a Schedule IV controlled substance, we believe, potentially increases AZSTARYS’ appeal among prescribers and patients.”

Dr. Mickle concluded, “Further, the Schedule IV classification of SDX is a significant development for our lead clinical product candidate, KP879, an extended-duration, agonist replacement therapy for the treatment of Stimulant Use Disorder (SUD), as SDX is the only API in KP879. We now look forward to initiating the clinical program for KP879 in 2021 after receiving FDA clearance for the Investigational New Drug (IND) application. If approved, KP879 could be a Schedule IV product, and physicians who are treating patients seeking to overcome addictions to cocaine, methamphetamine or other stimulants may be able to prescribe KP879 with the knowledge that the product candidate could have a significantly lower potential for abuse.”

Q1 2021 Financial Results:

For Q1 2021, KemPharm reported revenue of $12.1 million, which was primarily derived from a $10 million milestone payment earned upon the AZSTARYS NDA approval and service fee revenue of $2.1 million, as compared to Q4 2020 revenue of $2.4 million, which was derived primarily from service fee revenue. Current consulting arrangements contractually continue through March 2022.

KemPharm’s net loss for Q1 2021 was $10.3 million, or $0.54 per basic share and diluted share, compared to net loss of $5.8 million, or $1.92 per basic and diluted share for the same period in 2020. Net loss for Q1 2021 was driven primarily by a non-cash loss on extinguishment of debt of $16.9 million and net interest expense and other items of $0.4 million, partially offset by operating income of $7.0 million. The net operating income of $7.0 million for Q1 2021 was a change of $10.7 million compared to net operating loss of $3.8 million in the same period in 2020, which was primarily due to an increase in revenue of $10.0 million related to the milestone payment and a net decrease in operating expenses of $0.7 million period over period. The net decrease in operating expenses was primarily due to a decrease in severance expense of $0.8 million and a decrease in general and administrative expenses of $0.4 million, partially offset by an increase in royalty and direct contract acquisition costs of $0.3 million and an increase is research and development expenses of $0.1 million.

As of March 31, 2021, total cash, cash equivalents and restricted cash was $76.0 million, which was an increase of $71.7 million compared to December 31, 2020. The increase was driven by the Company’s multi-phase financial restructure process which was completed during the quarter.

As of March 31, 2021, total shares of common stock outstanding was 28,480,156 shares, and fully diluted common shares outstanding was 38,379,718 shares, which included 9,544,693 shares issuable upon exercise of warrants. In addition, no preferred stock is outstanding as of March 31, 2021.

“KemPharm has emerged from Q1 2021 as a Nasdaq-listed company with no debt and significant cash holdings on the balance sheet," said LaDuane Clifton, KemPharm’s Chief Financial Officer. “We have the resources needed to continue the development of KP879, and we have begun evaluating how to efficiently deploy capital to generate additional value streams for shareholders. There are many opportunities to explore, both internally and externally, and creating long-term value is top of mind.”

Conference Call Information:

Interested participants and investors may access the conference call by dialing either:

- (866) 395-2480 (U.S.)
- (678) 509-7538 (international)
- Conference ID: 4737008

An audio webcast with slide presentation will be accessible via the Investor Relations section of the Company's website, http://investors.kempharm.com/. An archive of the webcast and presentation will be available for 90 days beginning at approximately 5:30 p.m. ET, on May 13, 2021.

About AZSTARYS™:

AZSTARYS™ is an FDA-approved, once-daily product for the treatment of attention deficit hyperactivity disorder (ADHD) in patients age six years or older. AZSTARYS consists of SDX, KemPharm's prodrug of d-methylphenidate (d-MPH), co-formulated with immediate release d-MPH.

The complete approved prescribing information for AZSTARYS may be downloaded in PDF format here:

https://kempharm.com/wp-content/uploads/2021/03/AZSTARYS-Master-Label-Final_20210302.pdf

About KemPharm:

KemPharm is a specialty pharmaceutical company focused on the discovery and development of proprietary prodrugs to treat serious medical conditions through its proprietary LAT® (Ligand Activated Therapy) technology. KemPharm utilizes its proprietary LAT® technology to generate improved prodrug versions of FDA-approved drugs as well as to generate prodrug versions of existing compounds that may have applications for new disease indications. KemPharm's prodrug product candidate pipeline is focused on the high need areas of attention deficit hyperactivity disorder, or ADHD, stimulant use disorder (SUD) and CNS rare diseases, including idiopathic hypersomnia (IH). KemPharm's lead clinical development candidate for the treatment of SUD, KP879, is based on its prodrug of d-methylphenidate, known as serdexmethylphenidate (SDX). In addition, KemPharm has received FDA approval for AZSTARYS™, a new once-daily treatment for ADHD in patents age six years and older, and for APADAZ®, an immediate-release combination product containing benzhydrocodone, a prodrug of hydrocodone, and acetaminophen. For more information on KemPharm and its pipeline of prodrug product candidates visit www.kempharm.com or connect with us on Twitter, LinkedIn, Facebook and YouTube.

Caution Concerning Forward Looking Statements:

This press release may contain forward-looking statements made in reliance upon the safe harbor provisions of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Forward-looking statements include all statements that do not relate solely to historical or current facts and can be identified by the use of words such as "may," "will," "expect," "project," "estimate," "anticipate," "plan," "believe," "potential," "should," "continue" or the negative versions of those words or other comparable words. Forward-looking statements are not guarantees of future actions or performance. These forward-looking statements, including the timing of the potential commercial launch of AZSTARYS, the market outlook for AZSTARYS, potential regulatory and sales milestone and royalty payments pursuant to the License Agreement with an affiliate of GPC, the potential benefits of AZSTARYS and the clinical development of KP879, are based on information currently available to KemPharm and its current plans or expectations and are subject to a number of uncertainties and risks that could significantly affect current plans. Risks concerning KemPharm's business are described in detail in KemPharm's Quarterly Report on Form 10-Q for the quarter ended March 31, 2021, and KemPharm's other filings with the Securities and Exchange Commission. KemPharm is under no obligation to, and expressly disclaims any such obligation to, update or alter its forward-looking statements, whether as a result of new information, future events or otherwise.

KemPharm Contacts:

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KEMPHARM, INC.
UNAUDITED CONDENSED STATEMENTS OF OPERATIONS
(in thousands, except share and per share amounts)

	Three months ended March 31,	
	2021	**2020**
Revenue	$ 12,117	$ 2,089
Operating expenses:		
Royalty and direct contract acquisition costs	1,000	663
Research and development	2,265	2,126
General and administrative	1,892	2,245
Severance expense	—	830
Total operating expenses	5,157	5,864
Income (loss) from operations	6,960	(3,775)
Other (expense) income:		
Loss on extinguishment of debt	(16,885)	—
Interest expense related to amortization of debt issuance costs and discount	(150)	(571)
Interest expense on principal	(199)	(1,260)
Fair value adjustment related to derivative and warrant liability	(30)	75
Interest and other income (expense), net	8	(223)
Total other expenses	(17,256)	(1,979)
Loss before income taxes	(10,296)	(5,754)
Income tax benefit (expense)	—	—
Net loss	$ (10,296)	$ (5,754)
Deemed dividend	(37,444)	—
Net loss attributable to common stockholders	$ (47,740)	$ (5,754)
Basic and diluted net loss per share of common stock:		
Net loss	$ (0.54)	$ (1.92)
Net loss attributable to common stockholders	$ (2.49)	$ (1.92)
Weighted average number of shares of common stock outstanding:		
Basic and diluted	19,146,270	3,004,559

KEMPHARM, INC.
CONDENSED BALANCE SHEETS
(in thousands, except share and par value amounts)

	March 31, 2021	December 31, 2020
	(unaudited)	
Assets		
Current assets:		
Cash and cash equivalents	$ 75,917	$ 4,213
Accounts and other receivables	11,308	2,579
Prepaid expenses and other current assets	395	1,481
Restricted cash	109	109
Total current assets	87,729	8,382
Property and equipment, net	975	1,039
Operating lease right-of-use assets	1,294	1,350
Other long-term assets	437	438
Total assets	$ 90,435	$ 11,209
Liabilities and stockholders' equity (deficit)		
Current liabilities:		
Accounts payable and accrued expenses	$ 2,855	$ 6,647
Current portion of operating lease liabilities	336	327
Current portion of loans payable	683	390
Other current liabilities	364	172
Total current liabilities	4,238	7,536
Convertible notes, less current portion, net	—	67,658
Derivative and warrant liability	334	304
Operating lease liabilities, less current portion	1,500	1,587
Loans payable	98	391
Other long-term liabilities	14	145
Total liabilities	6,184	77,621
Stockholders’ equity (deficit):		
Preferred stock, undesignated, $0.0001 par value, 9,957,366 shares authorized, no shares issued or outstanding as of March 31, 2021 (unaudited); 9,961,846 shares authorized, no shares issued or outstanding as of December 31, 2020	—	—
Common stock, $0.0001 par value, 250,000,000 shares authorized, 28,480,156 shares issued and outstanding as of March 31, 2021 (unaudited); 4,537,321 shares issued and outstanding as of December 31, 2020	3	—
Additional paid-in capital	353,018	192,062
Accumulated deficit	(268,770)	(258,474)
Total stockholders' equity (deficit)	84,251	(66,412)
Total liabilities and stockholders' equity (deficit)	$ 90,435	$ 11,209

Exhibit 99.2


KemPharm
First Quarter 2021 Results
May 13, 2021
Trademarks referenced herein are held by their respective owners.

Cautionary Note Regarding Presentation Information

This presentation may contain forward-looking statements made in reliance upon the safe harbor provisions of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Forward-looking statements include all statements that do not relate solely to historical or current facts, including without limitation and can be identified by the use of words such as "may," "will," "expect," "project," "estimate," "anticipate," "plan," "believe," "potential," "should," "continue" or the negative versions of those words or other comparable words. Forward-looking statements are not guarantees of future actions or performance. These forward-looking statements include statements regarding the timing of the potential commercial launch of AZSTARYS, the market outlook for AZSTARYS, potential regulatory and sales milestone and royalty payments pursuant to the License Agreement with an affiliate of Gurnet Point Capital, the potential benefits of AZSTARYS, the clinical development of KP879, the potential benefits of SDX being classified as a Schedule IV controlled substance, and KemPharm's forecasted cash runway. These forward-looking statements are based on information currently available to KemPharm and its current plans or expectations and are subject to a number of uncertainties and risks that could significantly affect current plans. Risks concerning KemPharm's business are described in detail in the "Risk Factors" section of KemPharm's Annual Report on Form 10-K for the year ended December 31, 2020, KemPharm's Quarterly Report for the quarter ended March 31, 2021, and KemPharm's other filings with the Securities and Exchange Commission. KemPharm is under no obligation to, and expressly disclaims any such obligation to, update or alter its forward-looking statements, whether as a result of new information, future events or otherwise.

This presentation also may contain estimates and other statistical data made by independent parties and by us relating to market size and other data about our industry. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. In addition, projections, assumptions and estimates of our future performance and the future performance of the markets in which we operate are necessarily subject to a high degree of uncertainty and risk.

Q1 2021 Results Call Participants

- **Travis Mickle, Ph.D.** – President & Chief Executive Officer
- **R. LaDuane Clifton, CPA** – Chief Financial Officer, Secretary & Treasurer

KemPharm: Q1 2021 and Recent Highlights

AZSTARYS™ (KP415) - FDA has approved AZSTARYS NDA - Corium expected to launch in H2 2021 - Now eligible to receive up to $590 million for regulatory and sales milestone payments, per amended License Agreement - New top-level sales tier for royalty rates on U.S. net sales + increased royalty rates throughout AZSTARYS patents (2037)	**Improved Financial Position** - Multi-phase financial restructure process completed - KMPH stock re-listed on Nasdaq effective Jan 8, 2021 - Debt repaid in full on Feb 8, 2021 - Recent AZSTARYS-related milestones further strengthen cash position - Cash on hand as of Mar 31, 2021 = $76.0M
SDX Schedule IV Classification - SDX classified as Schedule IV Controlled Substance by the DEA - HHS and DEA determined that SDX has generally low potential for abuse and a lower potential for abuse when compared to d-MPH - Key differentiator for AZSTARYS[1], KP484 and KP879	**Beyond AZSTARYS** - KP879 IND cleared by FDA; initiation of clinical trial program expected by mid-2021 - Expanded services agreement with Corium adds additional revenue - KVK-Tech/Sure Med collaboration for APADAZ, Perspectives in Care program gaining traction

[1] AZSTARYS is a Schedule II controlled substance which contains SDX, a Schedule IV prodrug of d-methylphenidate

ASTARYS™ Approval

- ✓ **On March 2, 2021, the FDA approved AZSTARYS (serdexmethylphenidate and dexmethylphenidate capsules, for oral use, CII) A New Once-Daily Treatment for ADHD**
  - Consists of serdexmethylphenidate (SDX), KemPharm's prodrug of d-methylphenidate (d-MPH), co-formulated with immediate-release d-MPH
  - Corium expects to make AZSTARYS commercially available in the U.S. as early as the second half of 2021
- ✓ **AZSTARYS NDA Approval is a Significant Milestone for KemPharm**
  - Demonstrates value potential of SDX and KemPharm's groundbreaking LAT® platform
  - License Agreement with an affiliate of GPC provides significant economic benefits to KemPharm tied to the commercial launch of AZSTARYS
- ✓ **Approved label for AZSTARYS provides significant differentiation, which required a re-thinking of commercial forecasts and long-term possibilities**
  - The totality of various label elements, including administration, height and weight data from clinical trials experience, pharmacokinetics and efficacy data, all provide potential differentiation as compared to currently available d-MPH products for ADHD

Amendment to License Agreement w/ Affiliate of GPC

- ✓ **Post-Approval commercial assessments conducted separately and together with the GPC team led to a renegotiation of the economic terms of the KP415 License Agreement**
  - Total potential regulatory and sales milestone payments increased to **$590M** from $468M (these are in addition to $15M in upfront and NDA acceptance milestones already paid)
  - Added **new top-level sales tier for royalty rates** on U.S. net sales and **increased peak royalty rate throughout the life** of the patents that cover AZSTARYS through 2037. Those rates range, on a product-by-product basis, from a percentage in the high single digits up to the mid-twenties for U.S. net sales
  - KemPharm received **$10M** regulatory milestone payment for FDA approval of AZSTARYS; now eligible for additional **$10M** regulatory milestone following DEA scheduling of SDX (May 7, 2021)
  - **Four additional sales milestone tiers added**, including three lower-level sales tiers and a new top-level sales tier
  - Sales milestones available under the amended License Agreement total **$550M**, as compared to $420M in the original agreement

AZSTARYS™ Commercialization - Reasons for Optimism

- Corium preparing for commercial launch as early as the second half of 2021
  - Target date aligns with start of school in Aug./Sept.
  - Manufacturing validation underway
  - Corium is led by Perry Sternberg, President and CEO, as well as many other executives with prior experience at Shire
- Based on the approval label for AZSTARYS, peak market share may be greater than original forecasts
- Some payors have indicated initial receptivity to AZSTARYS and the differentiation that it may provide for patients
- Recent SDX Schedule IV classification by DEA potentially increases appeal of AZSTARYS[1] among prescribers and patients
- Amended License Agreement allows GPC to re-allocate resources to Corium's efforts, with the goal to optimize the commercial launch
  - *Additional investment in commercialization activities could potentially accelerate the ramp to peak, as compared to original forecasts*

[1] AZSTARYS is a Schedule II controlled substance which contains SDX, a Schedule IV prodrug of d-methylphenidate

Serdexmethylphenidate (SDX) – Schedule IV Classification

- SDX recently classified as a Schedule IV Controlled Substance by DEA
  - AZSTARYS classified as a Schedule II controlled substance as it includes a 70:30 mixture of SDX (Schedule IV) and d-MPH (Schedule II), respectively
- SDX Schedule IV classification based on eight-factor analysis by HHS, which concluded that, "SDX is related in action and effect to the schedule IV substance phentermine, and can therefore be expected to have a similar potential for abuse."
- HHS also affirmed that, "in clinical studies, SDX demonstrated a lower potential for abuse when compared to d-MPH."
- SDX is the sole API in KP879
  - For KP879, if approved, Schedule IV classification could allow physicians to prescribe KP879 knowing that it may have a significantly lower potential for abuse when treating Stimulant Use Disorder (SUD)

Key Differences between Schedule C-II and C-IV Methylphenidate Products

	All Current Methylphenidate Products	Serdexmethylphenidate (SDX)
Current DEA Schedule	C-II	C-IV
Refills Allowed?	No	Yes
Duration of Script/Refills?	None	Up to 6 months total
Delivery of Prescription	Written or electronic only	Phone, fax, written or electronic
Similar abuse potential as phentermine	No	Yes

- Specific advantages of a C-IV SDX include:
  - KP879 could be C-IV as well, if approved
  - Other SDX containing products may be C-IV
  - Since amphetamine-based prodrugs (KP922) have similar properties as SDX, the possibility for lower schedule exists with those candidates

Financial Update

Multi-Phase Financial Restructuring Completed

- Series of transactions enabled the restructure of the balance sheet and strengthened our financial position
- Transactions culminated in aggregate gross proceeds of approximately $94 million, enabling KemPharm to:
  - Regain its listing on The Nasdaq Capital Market as of Jan 8, 2021
  - Eliminate all of the Company's debt as of Feb 8, 2021
  - Add a substantial amount of new capital to propel the Company's growth efforts
- Incremental capital in-flows continue as associated warrants are exercised
  - 5-year life
  - Strike prices range from $6.36 – $8.125 per share
- KemPharm is now positioned with a solid balance sheet and a significantly extended cash runway that provides greater operating and strategic flexibility

Q1 2021 Financial Results

- Revenue of $12.1M, primarily comprised of a milestone payment of $10.0M related to the AZSTARYS NDA approval and services revenue of $2.1M under the Corium consulting arrangement
- Net loss of ($10.3M), or ($0.54) per basic and diluted share, compared to net loss of ($5.8M), or ($1.92) per basic share and diluted share for Q1 2020, primarily driven by non-cash loss on extinguishment of debt of ($16.9M) from the financial restructuring completed during Q1 2021
- Operating income of $7.0M, or $0.36 per basic and diluted share, primarily driven by an increase in revenue of $10.0M and a net decrease in operating expenses of $0.7M as compared to Q1 2020
- R&D expenses were $2.3M, a 7% increase compared to Q1 2020
- G&A expenses were $1.9M, a 16% decrease compared to Q1 2020

Q1 2021 Balance Sheet Update

- As of Mar 31, 2021, total cash[1] was $76.0M, an increase of $71.7M compared to Dec 31, 2020
- Total debt, net, of $67.7M at Dec 31, 2020, **has been fully extinguished**:
  - Paid $30.3M out of cash proceeds received in Jan 2021 offering
  - Converted $31.5M of principal and interest into preferred stock in Jan 2021
  - Paid $8.0M of principal, interest and prepayment fee paid in Feb 2021
- As of Mar 31, 2021:
  - 28,480,156 common shares outstanding
  - 38,379,718 fully diluted shares outstanding, which includes 9,544,693 of shares issuable upon exercise of warrants
  - No preferred stock outstanding

1 - Includes cash, cash equivalents and restricted cash.

KemPharm: Looking Ahead

AZSTARYS™ (KP415) - KemPharm continues to actively support Corium's commercial launch effort which is expected in H2 2021 - Additional clinical work around preschool age group (4-5 yr.) expected in 2021 - Expect royalties and sales milestones in 2022 and beyond	**Improved Financial Position** - Cash on hand as of Mar 31, 2021 = $76.0M - Recent AZSTARYS-related milestones further strengthen cash position
KP879 - SDX classified as Schedule IV Controlled Substance by the DEA - KP879 IND cleared by FDA; initiation of clinical trial program expected by mid-2021 - Additional timing and details to come	**Beyond AZSTARYS** - Expanded services agreement with Corium adds additional revenue - KVK-Tech/Sure Med collaboration for APADAZ, Perspectives in Care program gaining traction - Continued evaluation of pipeline and other value-creating opportunities

First Quarter 2021 Results

May 13, 2021