KemPharm

Management Presentation

September 2021

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KemPharm: Recent Highlights

AZSTARYS™

- Commercial launch on July 21, 2021
- Expect royalties and sales milestones in 2022 and beyond
- Royalty rates on U.S. net sales of high single digits up to mid-twenties
- AZSTARYS patents extend to 2037

Solid Financial Position

- Cash on hand as of Jun 30, 2021 = $132.3M
- Q2 2021 net income of $6.2M, or $0.18 per basic share
- Combination of AZSTARYS-related regulatory milestones and June warrant transaction bolstered cash reserves

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 compared to d-MPH
- Key differentiator for AZSTARYS[1], and all other SDX-based product candidates

Beyond AZSTARYS

- Initiated clinical trial with SDX, with data expected prior to year-end 2021
- KVK-Tech preparing to expand Sure Med collaboration for APADAZ®, Perspectives in Care™, into additional regions

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

KemPharm Leverages its LAT™ Prodrug Technology to Improve the Attributes of Approved Drugs in Large Markets

1) Select FDA-approved and widely prescribed drug for improvement, seek indications with few options or significant unmet need

2) Chemically modify using a ligand to create a prodrug
   - Ligands – GRAS or demonstrated to be safe
   - Prodrugs generate composition-based patents

3) Following ingestion, normal human metabolic processes cleave the ligand and release the active drug

- Generates long-lived **composition-of-matter** patent protection
- Proprietary to KemPharm and **applicable across many therapeutic areas**

Current Development Pipeline

Indication	Product Candidate	Parent Drug	Next Milestone	Potential Timing of Next Milestone	Potential NDA Submission
ADHD	KP484	Methylphenidate (ER)	Initiation of Efficacy Trial	TBD by Partner	As early as 2023
First-in-Class Therapy					
Stimulant Use Disorder (SUD)	KP879	Methylphenidate (ER)	Initiation of Clinical Program	Mid 2021	2024
Rare CNS Diseases					
Idiopathic Hypersomnia (IH)	KP1077	Undisclosed	Pre-IND Meeting	1H 2021	TBD – Exploratory Program

Partnered Assets – Potential For Near and Long-Term Value

Candidate	Indication	Partner	Status
AZSTARYS™ Methylphenidate ER	ADHD	Gurnet Point Capital/Corium	• **Commercially available** • Royalties to follow
KP484 Methylphenidate ER	ADHD	Gurnet Point Capital/Corium	• **Licensed** • Ready to enter clinical phase • Timing TBD with partner
KP879/KP1077 Methylphenidate	Stimulant Use Disorder (SUD)	Gurnet Point Capital/Corium	• IND cleared for KP879 • Pre-clinical not needed, clinical underway 2021 • GPC has Right of First Negotiation after POC, then one-time ROFR up to NDA acceptance
KP922 Amphetamine	TBD	Gurnet Point Capital/Corium	• Timing TBD • GPC has Right of First Negotiation after POC, but no ROFR
APADAZ® Hydrocodone IR	Pain	KVK Tech	• **Licensed** • Commercial launch Q4 2020 • During 2021, potential for $3.4M in m/s and reimb, plus profit share up to 50%

AZSTARYS™

D-Methylphenidate Prodrug Product for the Treatment of ADHD

ASTARYS™ - U.S. Commercial Launch

- ✓ **On July 21, 2021, Corium, Inc. initiated U.S. commercial launch of AZSTARYS™ (serdexmethylphenidate and dexmethylphenidate capsules)**
  - Launch initially focused on a few states with select prescribers; payor discussions ongoing
  - Based on the approved label for AZSTARYS, we believe peak market share may be greater than original internal forecast
- ✓ **AZSTARYS Commercial Launch is a Significant Milestone for KemPharm**
  - Demonstrates value potential of SDX and KemPharm's LAT® platform
  - License Agreement with an affiliate of GPC provides significant economic benefits to KemPharm tied to the commercialization of AZSTARYS
- ✓ **Approved label for AZSTARYS and SDX DEA Schedule IV classification provides significant differentiation**
  - 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
  - SDX comprises 70% of the API in AZSTARYS, which is classified as a Schedule II controlled substance; SDX as a Schedule IV controlled substance potentially increases AZSTARYS' appeal among prescribers and patients

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 royalty rates 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 eligible to receive **$10M** regulatory milestone payment for FDA approval of AZSTARYS; additional **$10M** regulatory milestone following DEA scheduling determination of SDX (anticipated on or around June 2, 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™ Label

Sections 1 and 2.3

Section 1: Indications and Usage

- AZSTARYS is indicated for the treatment of Attention Deficit Hyperactivity Disorder (ADHD) in patients 6 years of age and older.

Section 2.3: Administration Information

- Administer AZSTARYS orally once daily in the morning with or without food.
- AZSTARYS capsules may be taken whole, or opened and the entire contents sprinkled into 50 mL of water or over 2 tablespoons of applesauce.

IMPORTANT SAFETY INFORMATION, Contraindications, Warnings and Precautions, Adverse Reactions and Drug Interactions may be found within the full Prescribing Information at www.kempharm.com/pipeline-products/#kp415

AZSTARYS™ Label

Section 6

Section 6.1: Clinical Trials Experience

To adjust for normal growth, z-scores were derived (measured in standard deviations [SD]); z- scores normalize for the natural growth of children and adolescents by comparisons to age- and sex-matched population standards. A z-score change less than 0.5 SD is considered not clinically significant.

In this study, the mean increase in weight from baseline to Month 12 was 3.4 kg among study completers. The mean change in z-score from baseline to Month 12 was -0.20, indicating a lower than expected increase in body weight compared to children of the same age and sex, on average. Most of the weight z-score decline occurred in the first 4 months of treatment.

The mean increase in height from baseline to Month 12 was 4.9 cm among completers. Using the same z-score analysis for height, the mean change in z-score from baseline to Month 12 was -0.21, indicating a lower than expected increase in height compared to pediatric patients of the same age and sex, on average.

AZSTARYS™ Label

Section 12

Section 12.3: Pharmacokinetics

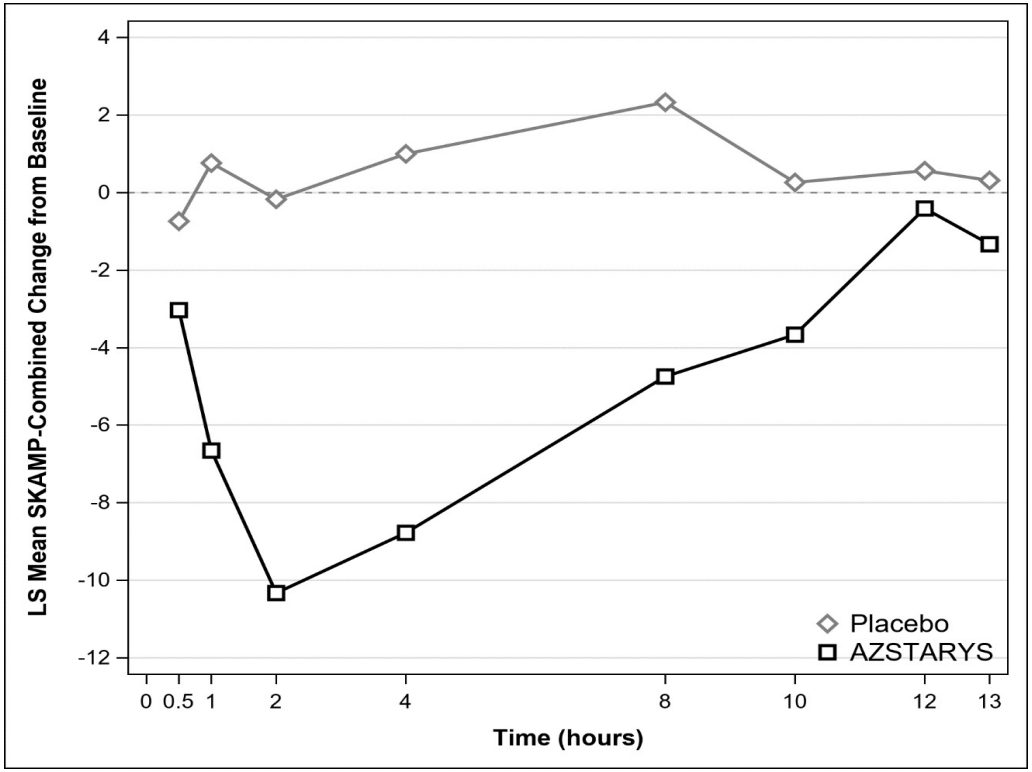
- No clinically meaningful differences in the exposure of dexmethylphenidate were observed when administered after an overnight fast, with a high-fat, high-caloric meal, or sprinkled onto applesauce or water. The median time to peak plasma concentration (T_{max}) was lengthened from 2 to 4-4.5 hours in the presence of food.

- Serdexmethylphenidate is a prodrug of dexmethylphenidate and is likely converted to dexmethylphenidate mainly in the lower gastrointestinal tract.

AZSTARYS™ Label

Section 14

Figure 2: LS Mean Change in SKAMP-Combined Score from Baseline after Treatment with AZSTARYS or Placebo during Classroom Day in Pediatric Patients (6 to 12 years) with ADHD



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Serdexmethylphenidate (SDX) – Schedule IV Classification

- SDX 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 and KP1077

Serdexmethylphenidate (SDX) Opportunity

- SDX provides an opportunity to explore indications outside ADHD
  - SDX is the only C-IV methylphenidate product; all others are C-II
  - SDX has a unique pharmacokinetic profile allowing for gradual and continuous release throughout the day
  - No generic equivalent and is not substitutable
- Recently initiated a trial with SDX under the KP879 IND exploring the pharmacokinetics, safety and exploratory effects of SDX at doses above those studied with AZSTARYS (>240 mg)
  - Difficult trial enrollment and retention due to nature of the study and the subjects involved
  - Data release should be available prior to year-end 2021
- Goal is to assess the best potential clinical path with SDX in future drug development in such indications like SUD, IH and others
- Provide additional clarification as to the potential development of SDX in the near-future

KP879

Agonist Replacement Therapy for the Treatment of Stimulant Use Disorder (SUD)

Stimulant Use Disorder (SUD)

- Stimulant Use Disorder (SUD) is broadly defined as the abuse or misuse of cocaine, methamphetamine, or other stimulants
- Although there are therapies for opioid addiction (buprenorphine, methadone), there are currently no approved treatments for SUD
- Studies with agonist replacement therapies have shown promising data for treating SUD

U.S. Prevalence of Stimulant Abuse in 2016

Stimulant	Abuse Reported In Last 30 Days (% of US Population >12 years)
Prescription Stimulants	1,700,000 (0.63%)
Cocaine[a]	1,900,000 (0.71%)
Methamphetamine[b]	~700,000 (0.25%)
Total:	**4,300,000 (1.59%)**

[a] includes crack cocaine
[b] includes only illicitly manufactured methamphetamine

Source: Substance Abuse and Mental Health Services Administration. (2017). HHS Publication No. SMA 17-5044, NSDUH Series H-52.

KP879 for the Treatment of SUD

- Potential KP879 features and benefits:
  - Stand-alone formulation of serdexmethylphenidate (SDX)
  - Releases d-methylphenidate (d-MPH), a dopamine reuptake inhibitor (similar pharmacology as abused stimulants)
  - Very gradual onset of blood concentrations of released d-MPH followed by sustained release
  - Low oral, IN, and IV abuse potential
- Focus of initial clinical studies
  - High dose PK
  - High dose safety
  - Effect size in different treatment populations
- May qualify for FDA fast track, breakthrough therapy and/or priority review
- May qualify for orphan designation depending on exact indication and target population

KP1077

For the Treatment of Idiopathic Hypersomnia (IH)

Idiopathic Hypersomnia (IH)

- There are no approved therapies for the treatment of Excessive Daytime Sleepiness (EDS) in IH
- Narcolepsy treatments have commonly been used for treating IH symptoms
  - GHB/sodium oxybate for improved sleep; recent approval of Xywave®
  - Stimulants for Excessive Daytime Sleepiness (EDS) are used off-label
    - Methylphenidate remains the most commonly used stimulant for IH
    - Amphetamine
    - Modafinil
- Unmet needs are focused on symptom control
  - No 16-hour product available for EDS symptom control
  - PRN (as needed) utilization of IR methylphenidate is very typical for “break-through” sleepiness

KP1077 Product Candidate Overview

- Once-daily dosing
- Potential features and benefits
  - Single dose allows for symptom control up to 16 hours
  - Still allows for PRN stimulant use for “break-through” sleepiness
- Orphan drug designation potential
  - Fast-track eligible
  - Break-through designation eligible
  - Pediatric rare disease potential
- No generic equivalent
- Composition-of-matter based patents expire in 2037; additional applications may extend past that time

Financial Update

Q2 2021 Financial Results

- Revenue of $12.0M, comprised of $10.0M milestone payment for DEA scheduling of SDX, and service fee revenue of $2.0M
- Net income of $6.2M, or $0.18 per basic share, compared to net income of $0.9M, or $0.21 per basic share and diluted share for Q2 2020
  - Operating income of $5.8M and non-cash gain of $0.8M from the forgiveness of the PPP loan during Q2 2021
  - Net loss attributable to common stockholders for Q2 2021 was ($0.40) per basic and diluted share, driven by a non-cash deemed dividend of $16.9M related the warrant exercise inducement transaction in June
- Operating income increased $3.2M, primarily driven by an increase in revenue of $5.1M, partially offset by a net increase in operating expenses of $1.8M as compared to Q2 2020
  - R&D expenses were $2.8M, an increase of $0.9M vs. Q2 2020
  - G&A expenses were $2.3M, an increase of $0.6M compared to Q2 2020

Q2 2021 Balance Sheet Update

- As of June 31, 2021, total cash was $132.3M, an increase of $56.3M compared to Mar 31, 2021, primarily due to receipt of $20M in cash milestones related to AZSTARYS, and $40.6M in proceeds from warrant exercises during Q2 2021

- Completed warrant exercise inducement transaction in June 2021:
  - Received $39.1M of gross proceeds from the exercise of 6,117,509 existing warrants at exercise price of $6.36 per share
  - Issued 1,529,379 inducement warrants with an exercise price of $16.50

- As of June 30, 2021:
  - 34,977,923 common shares outstanding
  - 46,546,998 fully diluted shares outstanding, which includes 4,584,889 of shares issuable upon exercise of warrants
  - No preferred stock outstanding

Solid Financial Position

- KemPharm's balance sheet has been completely restructured and recapitalized with a cash balance that provides for:
  - operating requirements,
  - internal development opportunities, and
  - other potential external investments
- Shelf registration on Form S-3 is just another component of the financial restructure process, a "housekeeping" step; no immediate needs, but available if strategically appropriate in the future
  - ATM agreement is another housekeeping tool (maintained by most life science companies); reserved for opportunistic use only if needed
  - Formalizes ongoing relationship with investment banks
- Taken together, our goal through these steps has been to provide for an extended cash runway and to enable greater operating and strategic flexibility

KemPharm: Looking Ahead

AZSTARYS™ - U.S. commercial rollout is being led by Corium and is progressing as planned - KemPharm continues to support manufacturing, scientific and regulatory affairs - Expect royalties and sales milestones in 2022 and beyond	**Improved Financial Position** - Cash on hand as of June 30, 2021 = $132.3M - Tools in place to enable operating and strategic flexibility - Looking forward to the potential of licensing revenue from AZSTARYS royalties and sales milestones
SDX Opportunity - Clinical trial with SDX underway - With clinical data, multiple potential paths forward will be fully assessed based on commercial potential and development pathway	**Beyond AZSTARYS** - Continued evaluation of pipeline and external opportunities - Upcoming clinical data from SDX clinical trials and initial SDX development plan

KemPharm

Leveraging our LAT™ Prodrug Technology to Create Long-Term Value

For additional information please contact:

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