STRONGBRIDGE BIOPHARMA PLC

JANUARY 2021

Forward-looking statements

This document contains forward-looking statements relating to the Company's strategy, objectives, business development plans, financial position, clinical development, regulatory plans and revenue guidance. All statements other than statements of historical facts included in this document, including, without limitation, statements regarding the Company's future financial position, strategy, anticipated investments, costs and results, status and results of clinical trials, anticipated timing of release of results from clinical trials, size of patient population potential, advantages of a product or product candidate, anticipated timing of activities related to the regulatory approval process for a product candidate, results of company-sponsored market research, plans, outcomes of product development efforts, intellectual property portfolio, revenue guidance and objectives of management for future operations, may be deemed to be forward-looking statements. You can identify forward-looking statements by words such as "anticipate," "believe," "could," "estimate," "expect," "intend," "may," "plan," "potential," "predict," "project," "should," "will," "would" or the negative of those terms, and similar expressions that convey uncertainty or future events or outcomes.

These forward-looking statements involve known and unknown risks, uncertainties, and other factors that may cause the Company's actual results, performance, or achievements or industry results to be materially different from those contemplated, projected, forecasted, estimated or budgeted, whether expressed or implied, by these forward-looking statements. These risks and uncertainties include those associated with clinical development and the regulatory approval process, the reproducibility of any reported results showing the benefits of RECORLEV, the adoption of RECORLEV by physicians, if approved, as treatment for any disease and the emergence of unexpected adverse events following regulatory approval and use of the product by patients. Additional risks and uncertainties relating to Strongbridge and its business can be found under the heading "Risk Factors" in Strongbridge's Annual Report on Form 10-K for the year ended December 31, 2019 and its subsequent Quarterly Reports on Form 10-Q, as well as its other filings with the SEC. These forward-looking statements are based on current expectations, estimates, forecasts and projections and are not guarantees of future performance or development and involve known and unknown risks, uncertainties and other factors. The forward-looking statements contained in this presentation are made as of the date hereof, and Strongbridge Biopharma does not assume any obligation to update any forward-looking statements except as required by applicable law.

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Strongbridge has a three-product, rare-disease portfolio

		Indication/Target Disease	Preclinical	Phase 1	Phase 2	Phase 3	Marketed	Commercial Rights
Rare Neuromuscular	KEVEYIS® (dichlorphenamide)	Primary Periodic Paralysis			Marketed			U.S.
Rare Endocrinology Investigational Agents	RECORLEV® (levoketoconazole)	Endogenous Cushing's syndrome				Phase 3		Global
	veldoreotide modified release	Conditions modifiable through activation of somatostatin receptors, such as Cushing's disease and neuroendocrine tumors	Preclinical	Immediate Release Formulation Completed Phase 2				Global

RECORLEV®
(levoketoconazole)

Positive results from two Phase 3 studies

NDA submission anticipated Q1 2021

10-month PDUFA review expected

Launch Q1 2022 if approved

KEVEYIS®
dichlorphenamide 50 mg tablets

2020 revenue of approximately $30.7M **up 41.5%** from 2020 despite COVID-19

2021 revenue guidance: **$34M-$36M**

Provides established and leverageable rare disease **commercial infrastructure**

VELDOREOTIDE
modified-release

Novel, patented, extended-release formulation is **under evaluation** in nonclinical disease models potentially amenable to SST modulation

RECORLEV

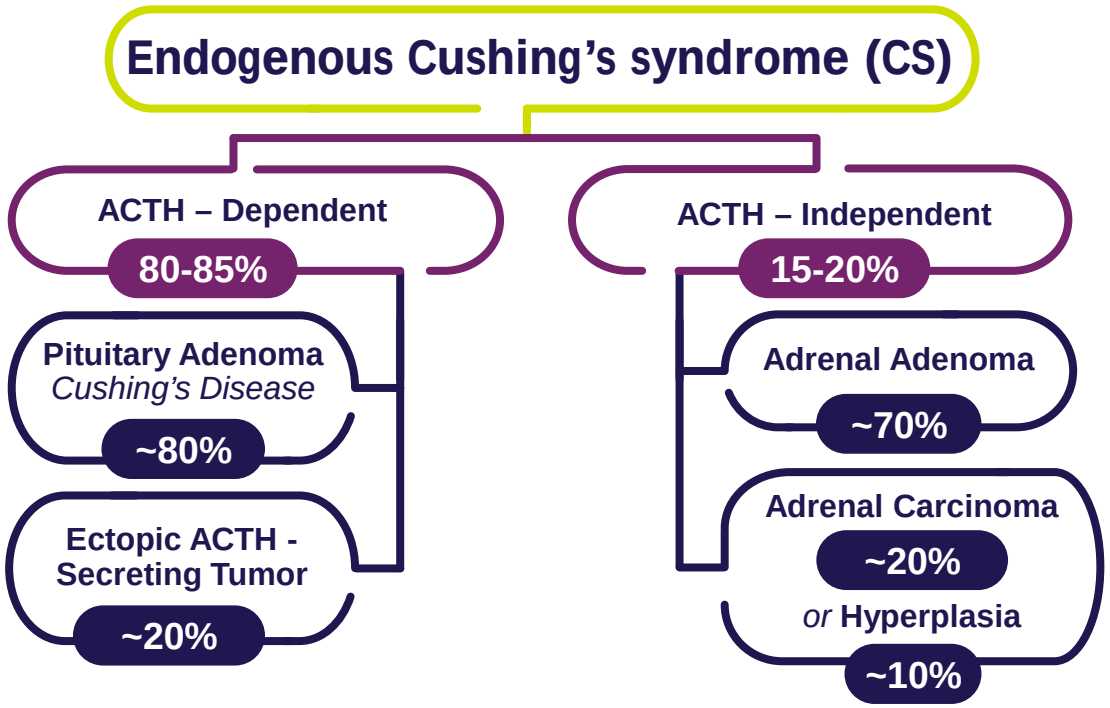
(levoketoconazole)

In Phase 3 development for Cushing’s syndrome

The safety and efficacy of Recorlev (levoketoconazole) for treatment of endogenous Cushing's syndrome has not been established.

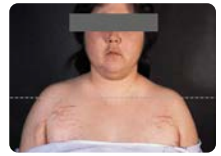
Endogenous Cushing's syndrome is a serious rare disease

Underlying cause is chronic exposure to
EXCESS SERUM CORTISOL
due to any of several etiologies



Abbreviation: ACTH, adrenocorticotropic hormone. Source: Sharma TS, et al. Clin Epidemiol. 2015;7:281–293.

Affects the whole body

Heart attacks, stroke, high blood pressure, high cholesterol, vein clots	Overweight/obesity, facial, neck and abdominal fat accumulation, diabetes	Psychosis, impaired memory, sleep disturbance, depression, anxiety
Muscle and skin atrophy	Osteoporosis	

Patients have*

2-5x higher incidence rates of comorbidities

7x higher medical costs

4x higher pharmacy costs

*According to a retrospective analysis of claims from a large U.S, commercial health plan (885 selected Cushing's disease cases and 2,655 matched controls without Cushing's disease) from 2007 to 2011.

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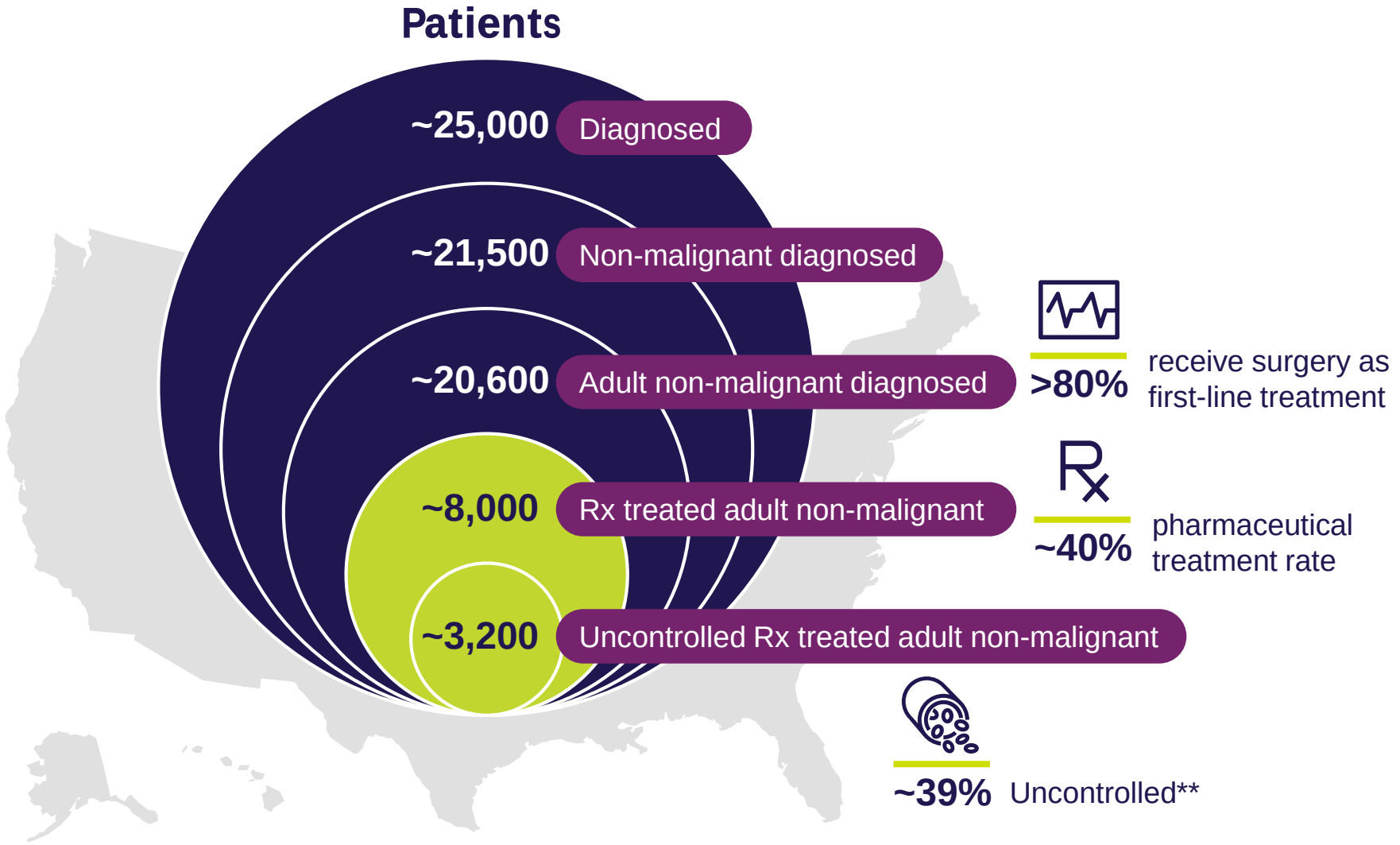
The safety and efficacy of Recorlev (levoketoconazole) for treatment of endogenous Cushing's syndrome has not been established.

An estimated ~8,000 CS patients in the U.S. are Rx-treated*

~3,200 of whom are not well controlled**



Abbreviation: Rx= prescription drug

* Source: Secondary literature and company sponsored research

** A07. Of your endogenous Cushing's patients currently receiving pharmacological therapy, what percent would you consider have their symptoms controlled vs. uncontrolled by their medication(s) for CS?

Levoketoconazole, an enantiomer of ketoconazole, comprises virtually all the cortisol inhibition activity of ketoconazole*

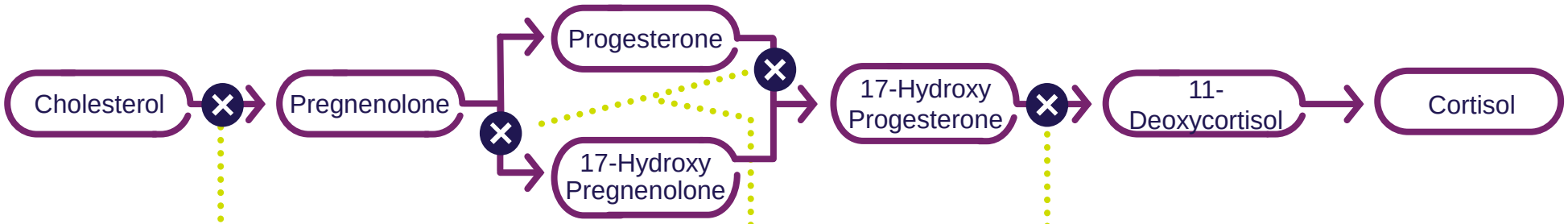
Ketoconazole is a flawed "standard of care" in CS:

Not indicated for CS outside of Europe

Limited data in CS: efficacy and safety poorly characterized

U.S. label limits top dose to 400mg daily, 6 months therapy

Weekly monitoring for liver injury recommended by FDA



	CYP11A1	CYP17A1	CYP11B1
Ketoconazole, racemate	2,267	58	139
Dextroketoconazole (RH enantiomer)	25,080	596	1,365
Levoketoconazole* (LH enantiomer)	1,447	28	52

1.6-2.7x

10-26x

50% inhibitory concentration, nmol/L; lower number indicates greater inhibition potency

*Auchus RJ, Wu JL, Peng HM "2S,4R-Ketoconazole is the Relevant Enantiomer of Ketoconazole for Cortisol Synthesis Inhibition: Steroidogenic P450s Inhibition Involves Multiple Mechanisms" Endocrine Society's Annual Meeting. University of Michigan, Chicago, IL. 18, March 2018. Poster presentation.

Phase 3 program for Recorlev: includes two phase 3 studies with positive results

Phase 3 Study	Study Design	Patients	Status
SONICS[1]	Single-arm, open-label, dose-titration study in adults with Cushing's syndrome (CS)	94 patients enrolled in dose-titration phase	• Completed with statistically significant result on primary endpoint • Full results published in *The Lancet Diabetes and Endocrinology*
LOGICS[2]	Double-blind, placebo-controlled, randomized withdrawal following open-label treatment in adults with CS	84 total patients (12 participated after completing SONICS) 44 entered and 43 completed the randomized-withdrawal phase	• Statistically significant result on primary endpoint
OPTICS	Long-term, open-label extension study in adults with CS	Project 45-50 to be enrolled	• Last patient last visit for the study expected to be in 2023 • Preliminary safety data to be included in NDA

1. Fleseriu M, et al. Lancet Diab Endocrinol. 2019;7(11):855-865.
2. Zacharieva S, et al. *Journal of the Endocrine Society*, Volume 4, Issue Supplement_1, April-May 2020, MON–332, https://doi.org/10.1210/jendso/bvaa046.1129.

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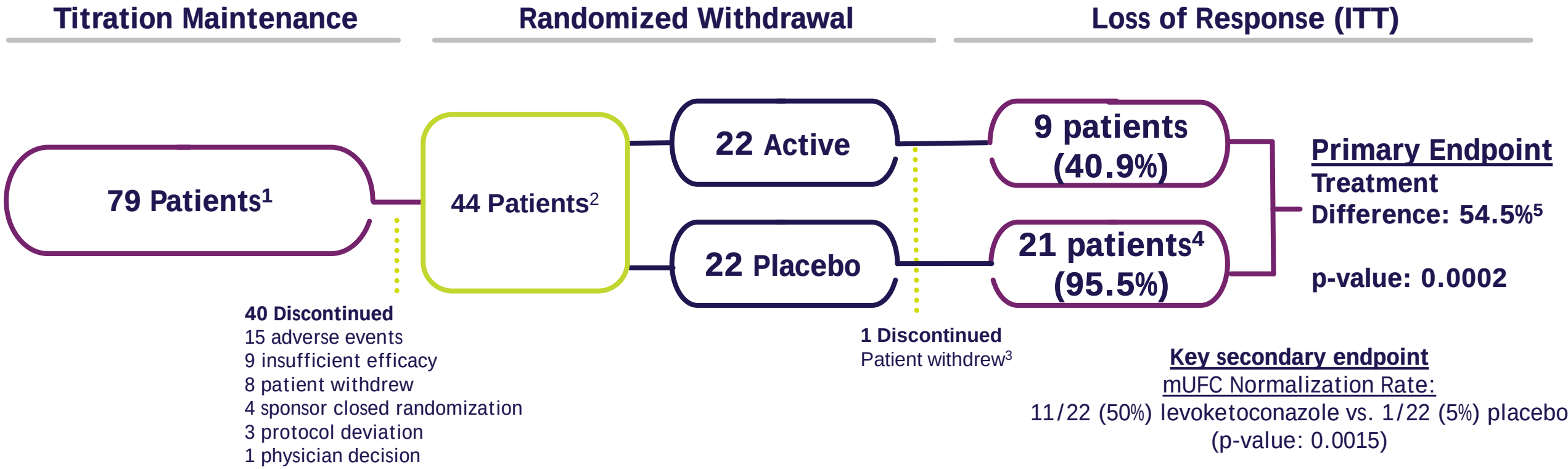
LOGICS: a phase 3, double-blind, placebo-controlled, randomized-withdrawal trial

- Phase 3, multinational, double-blind, placebo-controlled, randomized-withdrawal study of CS patients with study baseline mUFC at least 1.5 times the upper limit of normal (ULN) for patients naïve to levoketoconazole
- Levoketoconazole individually titrated open-label according to mUFC response with maintenance at therapeutic dose for at least 4 weeks and with at least 14 weeks total therapy
- Completers of SONICS study were potentially allowed entry into LOGICS, but required re-titration if not on a stable therapeutic dose for at least 12 weeks prior to screening for LOGICS
- Randomization 1:1 active:placebo
- The study population was similar to SONICS and representative of the CS population

* Subjects who directly rolled over into LOGICS from SONICS and were on a stable therapeutic dose for 12 weeks prior to screening did not require titration-maintenance
** Early rescue can happen at any time during randomized withdrawal

LOGICS showed that 54.5% more patients lost response on placebo than on levoketoconazole (p-value: 0.0002)



The enrolled study population had baseline characteristics comparable to those in the SONICS study, representative of a medically treated CS population with moderate to severe hypercortisolemia

1) 7 former SONICS patients entered TM; 2). 5 former SONICS patients enrolled directly into randomized-withdrawal; 3) 1 patient discontinued during RW from active arm; 4) Patients on placebo were rescued after a median 22 days, mean 28 days; 5) 95% Conf. Interval (27.4-75.7);

Adverse events during levoketoconazole treatment in LOGICS were generally comparable to those seen in SONICS

Treatment-Emergent Adverse Events During Levoketoconazole Use (Phases combined)

N=80*

Nausea	**29%**
Hypokalemia	**28%**
Headache	**21%**
Hypertension	**19%**
Diarrhea	**15%**

Treatment-emergent events with incidence ≥15%

Treatment-Emergent Adverse Events (Randomized-Withdrawal)

N=44

	L-KTZ n=22	Placebo n=22
Nausea	**2 (9%)**	**1 (5%)**
Fatigue	**2 (9%)**	**1 (5%)**
Headache	**2 (9%)**	**2 (9%)**
Dizziness	**0%**	**2 (9%)**
Hypertension	**3 (14%)**	**1 (5%)**
Insomnia	**0%**	**2 (9%)**

Treatment-emergent events with incidence ≥5%

*Includes 79 patients who entered the titration maintenance phase plus one patient who joined the randomized-withdrawal phase directly from SONICS and was randomized to the active arm

The safety and efficacy of Recorlev (levoketoconazole) for treatment of endogenous Cushing's syndrome has not been established.

Safety measures in LOGICS were generally comparable to those seen in SONICS

Liver Test Results During Levoketoconazole Use (Phases combined) (Worst observed value for ALT)

N=79*

ALT > 3x ULN (includes those > 5x ULN)	**11.4%**
ALT > 5x ULN	**3.8%**
Total bilirubin values > 1.5x ULN	**0.0%**

No Hy's Law, no transaminases >20x ULN; no clinical sequelae; 7 patients discontinued due to a liver-related abnormality (6 were AESIs); all liver abnormalities >3x ULN resolved without clinical sequelae (with medication cessation in some cases)

QTc Results (Phases combined) (Worst observed values for QTcF)

N=80

> 500msec	**2.5%**

No clinical sequelae related to QTcF; all cases resolved with medication interruption; 2 patients discontinued due to QTc prolongation

Adrenal Insufficiency (Phases combined)

N=80

Adverse Events	**10%**

*One patient of the 80 who were treated with levoketoconazole did not have post-baseline liver test result data because they dropped out of the study

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The safety and efficacy of Recorlev (levoketoconazole) for treatment of endogenous Cushing's syndrome has not been established.

Recorlev could be launched in U.S. Q1 2022 if approved

NDA submission ~Q1 2021
~10-month PDUFA review

PDUFA date ~Q4 2021 or Q1 2022

U.S. Launch ~Q1 2022

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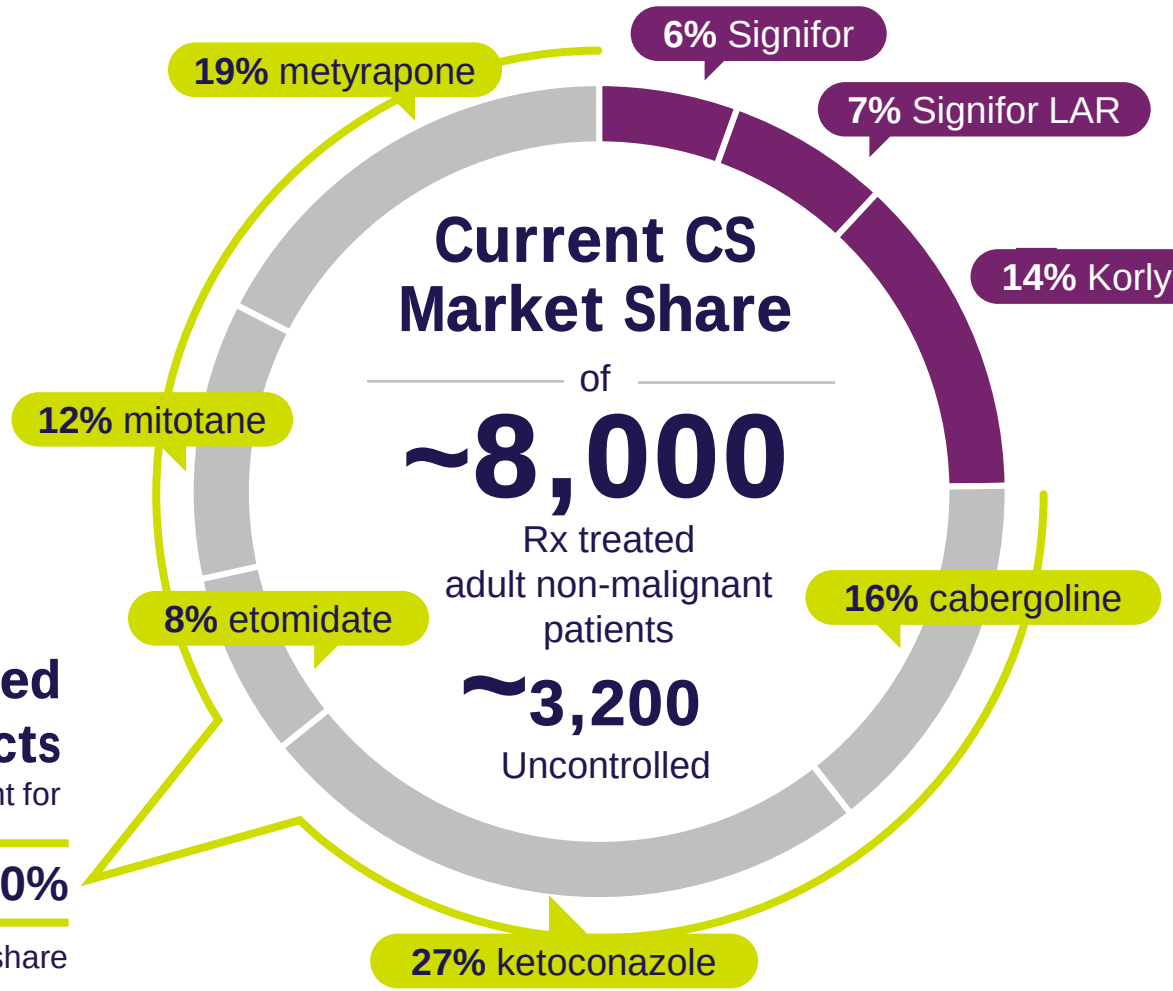
The safety and efficacy of Recorlev (levoketoconazole) for treatment of endogenous Cushing's syndrome has not been established.

RECORLEV COMMERCIAL OPPORTUNITY

The safety and efficacy of Recorlev (levoketoconazole) for treatment of endogenous Cushing's syndrome has not been established.

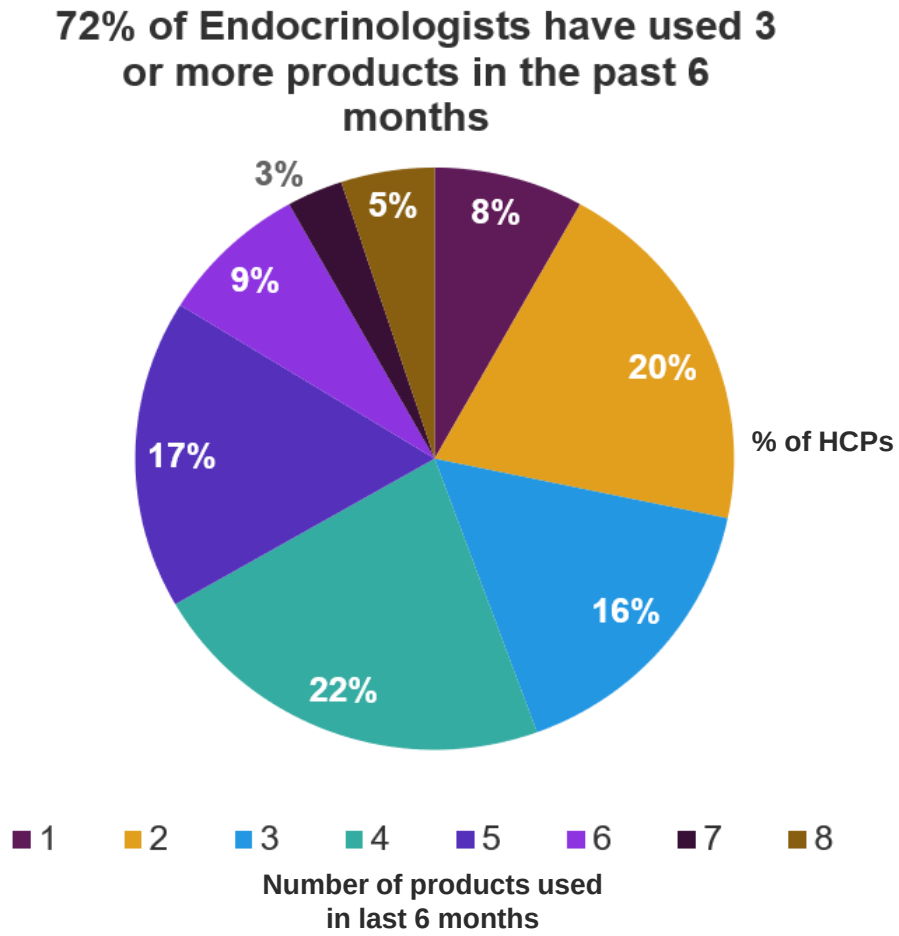
Fragmented CS prescribing market – dominated by unapproved CS products*



Note: Total utilization greater than 100% due to combination therapy

Source: Company sponsored research
Signifor and Signifor LAR are owned by Recordati; Korlym is owned by Corcept
* Isturisa was approved on March 9th 2020.after the market research was conducted
**2020 Corcept guidance
B08. Of your endogenous Cushing's syndrome patients currently receiving a pharmacological therapy pre-surgery, what percent are receiving each pharmacological therapy listed below?
B09. Of your endogenous Cushing's syndrome patients currently receiving a pharmacological therapy post-surgery – 1st line, what percent are receiving each pharmacological therapy listed below?
B10. Of your endogenous Cushing's syndrome patients currently receiving a pharmacological therapy post-surgery – 2nd line or later, what percent are currently receiving each pharmacological therapy listed below?

A need for new treatment options exists



81% of endocrinologists have moderate to high interest in new treatments for CS

9 | Extremely interested

Not at all interested **1** |

Controlled vs. Uncontrolled on Pharmacological Therapy

Source: Company sponsored research

B02. When thinking of your endogenous Cushing's syndrome patients that you have personally managed in the past six months, please indicate which of the following pharmacological therapies your patients have received.

A07. Of your endogenous Cushing's patients currently receiving pharmacological therapy, what percent would you consider have their symptoms controlled vs. uncontrolled by their medication(s) for CS?

B15. In general, how interested are you in new treatments for endogenous Cushing's syndrome? Please rate on a 9-point scale, where 1 is "Not at all interested" and 9 is "Extremely interested".

Endocrinologists had a positive reaction to the Recorlev clinical profile and indicated a likelihood to prescribe if approved

Recorlev Has Potential to Fill Key Unmet Needs as Described by Endocrinologists

- Patient-reported improvements in QoL
- Reduction in UFC / Ability to monitor therapeutic response
- CV Profile (e.g., progressive weight loss)
- Safety (e.g., hepatoxicity, hyperandrogenism, adrenal insufficiency)

Fills an Unmet Need

81% of endocrinologists in large practices indicate Recorlev could fill an unmet need**

% rating 6 or higher

Likelihood to Prescribe

86% of endocrinologists in large practices are likely to prescribe**

All endocrinologists surveyed

Endocrinologists reported to have seen >40 CS patients in the last 6 months

Source: Company sponsored research
D03. Based on this profile, what is your likelihood to prescribe Product Y? Please rate on scale from 1-9, with 1 being "Not at all likely" and 9 being "Very likely".
D02. To what extent does Product Y fill an unmet need in the treatment and management of endogenous Cushing's syndrome? Please rate on scale from 1-9, with 1 being "Not at all" and 9 being "Very much".
**Not statistically significant

Although Ketoconazole is currently the most prescribed treatment, there is a significant opportunity for Recorlev

40% of HCPs surveyed do not use ketoconazole

- Reluctant to use Keto due to safety concerns
- CS label primary driver of product selection
- More willing to try a new therapy coming to market given efficacy and safety data from clinical trials

35% of HCPs surveyed use ketoconazole in less than 20% of their CS prescribing

- Acknowledge that safety concerns and FDA warnings exist
- Use Keto based on clinical experience
- See benefit of FDA approved product with supporting data in CS

The 75% of the market that either does not use keto or uses keto in less than 20% of their CS prescribing indicated a high likelihood to prescribe Recorlev

Source: Company sponsored research

The safety and efficacy of Recorlev (levoketoconazole) for treatment of endogenous Cushing's syndrome has not been established.

Precedent established for CS branded pricing*

Annual Pricing*

SIGNIFOR/SIGNIFOR LAR	ISTURISA	KORLYM
~$165k	~$160k – ~$451k**	~$189k – ~$755k Weight-based dosing

Source: Red Book, Signifor Prescribing Info, Signifor LAR Prescribing Information, Korlym Prescribing Information, Isturisa Prescribing Information
* Wholesale/ Acquisition Cost
** Isturisa estimated annual cost based on maintenance dose range of 2mg-7mg twice daily.. At the highest recommended maintenance dose the annual cost of Isturisa would be ~ $1M..

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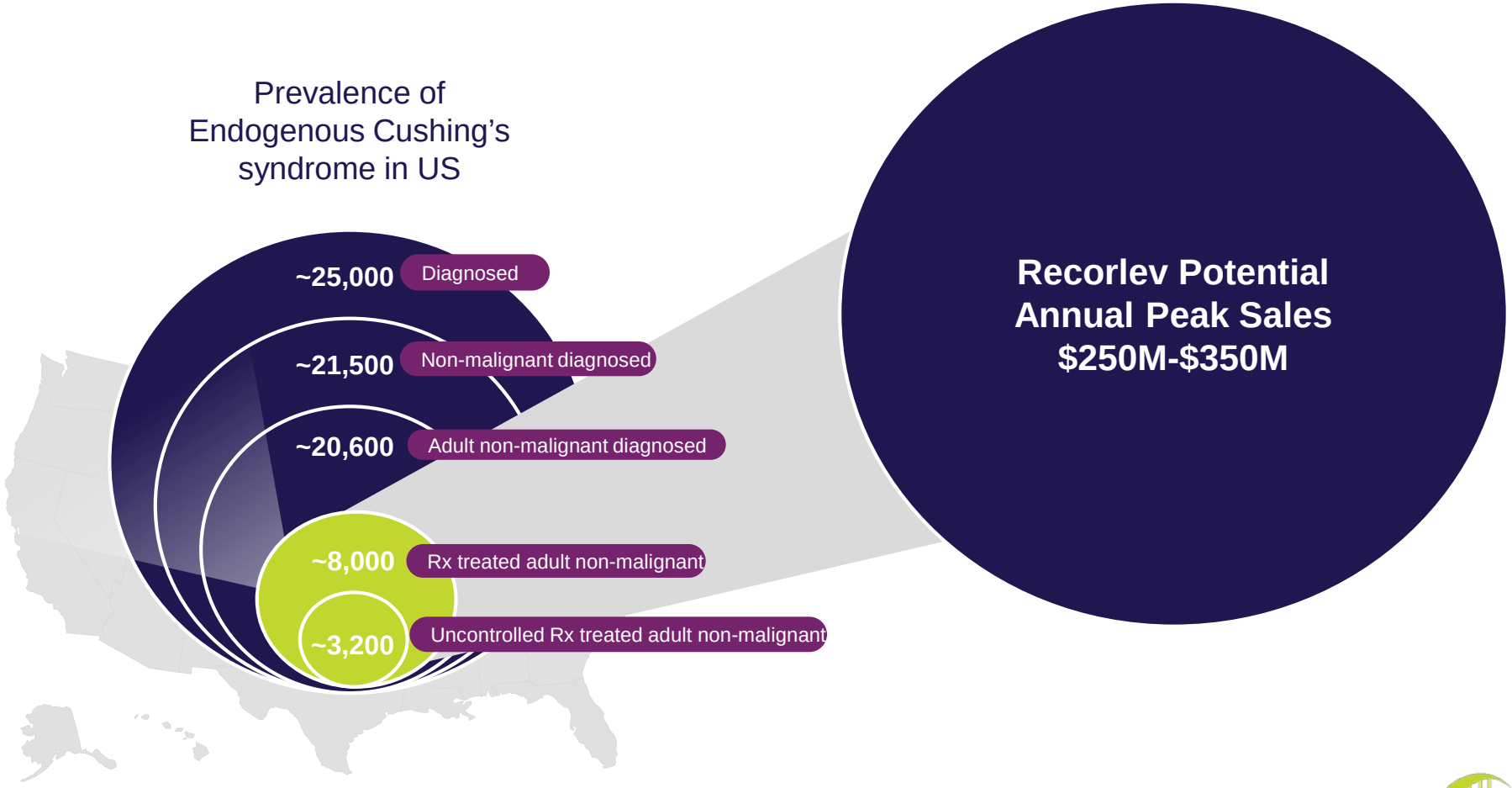
The safety and efficacy of Recorlev (levoketoconazole) for treatment of endogenous Cushing's syndrome has not been established.

Recorlev represents the potential to capitalize on a $2B+ total addressable annual market



Source: Company sponsored research

The safety and efficacy of Recorlev (levoketoconazole) for treatment of endogenous Cushing's syndrome has not been established.

KEVEYIS
(dichlorphenamide)

The first and only FDA-approved therapy for primary periodic paralysis*

* FDA-approved treatment for hyperkalemic, hypokalemic, and related variants of primary periodic paralysis

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Primary periodic paralysis: a spectrum of rare, chronic, genetic, neuromuscular disorders

PPP

Causes recurrent, progressive, and debilitating episodes of muscle weakness and temporary paralysis[2-4]

Symptoms/Triggers

Symptoms
clumsiness, extreme fatigue, weakness, palpitations, pain

Triggers
potassium, carbohydrates, rest after exercise, cold exposure, stress

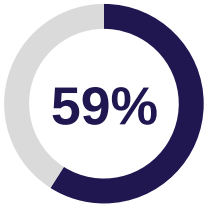
Impact of Attacks

Paralytic attacks are acute episodes that can be debilitating[4]

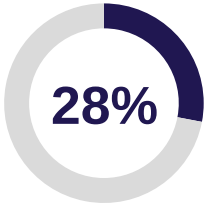
Attacks may last from one hour to several days[1]

As patients age, muscle weakness can become permanent[3]

Frequency



have **weekly** attacks



have **daily** attacks

1. Charles G, Zheng C, Lehmann-Horn F, Jurkatt-Rott, Levitt J. Characterization of hyperkalemic periodic paralysis: a survey of genetically diagnosed individuals. J Neurol. 2013;260:2606-2613.
2. Cannon SC. Channelopathies of skeletal muscle excitability. Compr Physiol. 2015;5:761-790.
3. Cavel-Greant D, Lehmann-Horn F, Jurkat-Rott K. The impact of permanent muscle weakness on quality of life in periodic paralysis: a survey of 66 patients. Acta Myol. 2012;31:126-133.
4. Sansone V, Meola G, Links TP, Panzeri M, Rose MR. Treatment for periodic paralysis. Cochrane Database Syst Rev. 2008; Jan 23;(1):CD005045.

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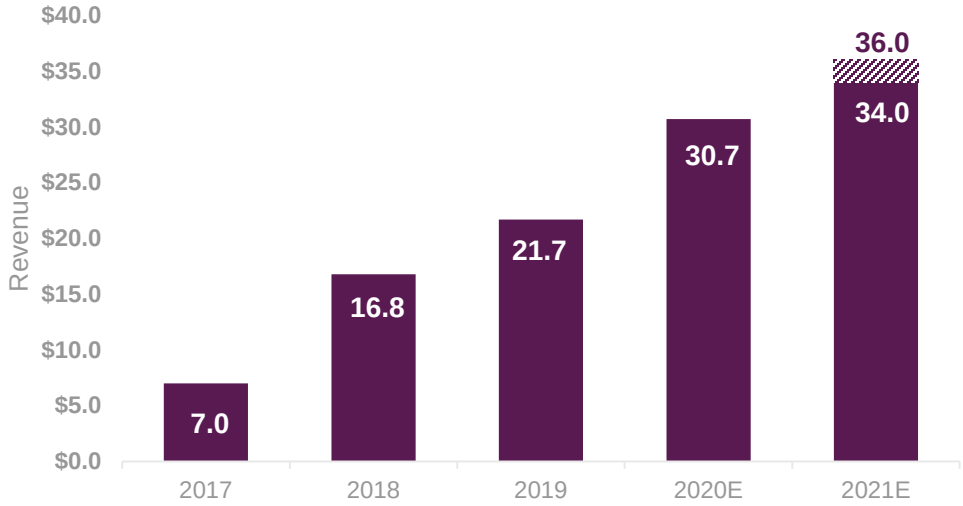
Keveyis provides revenue and commercial experience for Strongbridge

~4,000 – 5,000*

Diagnosed PPP patients in the United States

Total addressable market is more than $500M annually



With continued market exclusivity, we believe Keveyis has the potential to exceed peak sales of $50M annually

Established Rare Disease Commercial Experience and Expertise

- Sales
- Marketing/Analytics
- Patient Access Managers
- Patient Services
- Advocacy

We are attempting to extend Keveyis exclusivity by pursuing >12 patent applications

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IP & FINANCIALS & CLOSING

* FDA-approved treatment for hyperkalemic, hypokalemic, and related variants of primary periodic paralysis

Intellectual property and orphan exclusivity

Recorlev U.S. Exclusivity: At least 7 years from launch
Keveyis U.S. Exclusivity: Expires August 2022 unless extended via IP efforts

	Intellectual Property		Orphan Exclusivity	
	U.S.	EU	U.S.	EU
RECORLEV	2026 — Method of use: treating Cushing's syndrome	2026 — Method of use: treating Cushing's syndrome	7 years	10 years
VELDOREOTIDE	2037 — Modified release formulation	Filed patent application for modified release formulation	7 years	10 years
KEVEYIS	>12 active patent applications	Strongbridge has U.S. rights only	Aug 2022	Strongbridge has U.S. rights only

The safety and efficacy of Recorlev (levoketoconazole) for treatment of endogenous Cushing's syndrome has not been established.

Strongbridge projects it can fund operations into and potentially beyond Q1 2023*

~$87.5M Cash

Cash and cash equivalents as of 12/31/20

$30M Debt Facility

- $10M drawn at close
- $10M drawn Q4 2020 following positive Recorlev data
- Up to an additional $10M available upon Recorlev approval and lender consent
- No revenue or cash liquidity covenants

Cash runway

Into and potentially beyond

Q1 2023*

2021

Keveyis revenue guidance

$34M–$36M

~67.2M

shares outstanding

*Runway projection assumes full availability and drawdown of $30M facility

Near-term key priorities

RECORLEV®
(levoketoconazole)

- **Submit an NDA for Recorlev to the U.S. FDA Q1 2021**
- **Launch planning**

KEVEYIS®
dichlorphenamide 50 mg tablets

- **Achieve or surpass our full year 2021 guidance range of $34-$36M**
- **Continue vigorous prosecution of KEVEYIS IP**

Corporate

- **Manage expenses to achieve or exceed runway guidance of cash lasting into and potentially beyond Q1 2023**

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