ZEVRA THERAPEUTICS

A Rare Approach to Therapeutics

January 2025



NasdaqGS: ZVRA

Cautionary Note Regarding Forward-Looking Statements

Presentation may contain forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements relate to future events or our future financial performance. We generally identify forward-looking statements by terminology such as "may," "will," "would," "should," "expects," "plans," "anticipates," "could," "intends," "target," "projects," "contemplates," "believes," "estimates," "predicts," "assume," "intend," "potential," "continue" or other similar words or the negative of these terms. We have based these forward-looking statements largely on our current expectations about future events and financial trends that we believe may affect our business, financial condition and results of operations. Forward-looking statements are not guarantees of future actions or performance. These forward-looking statements include statements regarding the promise and potential impact of our preclinical or clinical trial data, including without limitation the timing and results of any clinical trials or readouts, our anticipated financial performance, our industry, our intellectual property, business strategy, plans, goals and expectations concerning our market position, future operations, the timing or results of any Investigational New Drug Applications (NDA) and NDA submissions, communications with the U.S. Food and Drug Administration (FDA), the potential uses or benefits of MIPLYFFA, KP1077, SDX celiprolol or any other product candidates for any specific disease indication or at any dosage, the potential benefits of any of Zevra's product candidates, the success or timing of the launch or commercialization of any products or related sales milestones, and our strategic and product development objectives. These forward-looking statements are based on information currently available to Zevra and its current plans or expectations and are subject to a number of known and unknown uncertainties, risks and other important factors including those discussed under the caption "Risk Factors" in our Annual Report for the year ended December 31, 2023, on Form 10-K and filed with the Securities and Exchange Commission (SEC) on April 1, 2024, and in our other filings with the SEC could cause actual results, performance, or achievements to differ materially from those indicated by the forward-looking statements made herein.

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Zevra Has a Unique **Opportunity to Impact People Living with Rare Diseases**

Two commercial-stage rare disease products

Advanced clinical development pipeline

Existing infrastructure supportive of future growth

Strong financial position with cash runway into 2027



Pursuing our Mission to Bring Life-Changing Therapeutics to the Rare Disease Community

Execute

Focus

Innovate

Resources prioritized across four pillars to achieve our vision

Commercial Excellence

Synergistic commercial products supporting patient access to therapeutics

Pipeline and Innovation

in-line with commercial capabilities to deliver maximum value to patients

Talent and Culture

Experienced team with rare disease expertise

Corporate Foundation

Demonstrating Financial Discipline



Experienced Team with Rare Disease Expertise



Neil F. McFarlane Chief Executive Officer and President

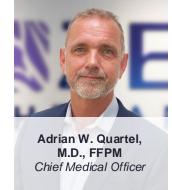


R. LaDuane Clifton, CPA Chief Financial Officer and Treasurer



Joshua Schafer Chief Commercial Officer and EVP of BD







RARE DISEASE EXPERIENCE



















RARE DISEASE PRODUCT EXPERIENCE

























Diversified Portfolio to Deliver Value for Patients

	PHASE 1	PHASE 2	PHASE 3	NDA/MAA ^{iv}	FDA APPROVED	STATUS AND IP		Zevra's Portfolio
U.S.	MIPLYFFA TM arimoclomol Niemann-Pick Disease Type C (NPC)					FDA Approval: Sep 20, 2024 Launch: Nov 21, 2024 IP through 2031 via ODE ⁱ	Asset portfolio targeting rare diseases	
Commercial	OLPRUVA® sod Urea Cycle Disord		te for oral susper	nsion		FDA Approval: Dec 22, 2022 Launch: Jan 29, 2024		Leverage areas of synergy
Partnered	AZSTARYS® sell			ylphenidate		Receiving royalties and milestones on net sales ⁱⁱ		for commercial portfolio
	Arimoclomol Niemann-Pick Dis	sease Type C (N	PC)			Exploring regulatory path in Europe and other countries	⊘	Lean infrastructure that can be leveraged with additional products
Pipeline	Celiprolol Vascular Ehlers-D	oanlos Syndrome	e (VEDS)			Ph. 3 trial ongoing IP through 2038	S	Multiple upcoming milestones and catalysts
	KP1077 Idiopathic Hypers	somnia (IH)				Seeking strategic alternative; Ph. 3 trial ready ⁱⁱⁱ IP through 2037		Portfolio with commercial
	KP1077 Narcolepsy					Ph. 3 trial potential ⁱⁱⁱ		and clinical assets



Efficient Team Approach to Providing Patient Access

Rare Disease Specialists



Marketing



Patient
Reimbursement
Services



Account Management & Contracting



Medical Affairs & Patient Advocacy



Zevra's comprehensive patient support program



To support the individual needs of eligible patients and those who care for them

Personalized insurance coverage education and support



Disease state information and tools for therapy management



Copay & alternate funding identification assistance for eligible patients' product needs



Interactions to address barriers while facilitating timely prescription refills





U.S. Prescribing Information for MIPLYFFATM (arimoclomol capsules)

Indication

MIPLYFFA is indicated for use in combination with miglustat for the treatment of neurological manifestations of Niemann-Pick disease type C (NPC) in adult and pediatric patients 2 years of age and older.

Recommended Dose

Recommended MIPLYFFA oral dosage, in combination with miglustat, for patients with actual body weight of:

8 kg to 15 kg, is 47 mg three times a day

- > 15 kg to 30 kg, is 62 mg three times a day
- > 30 kg to 55 kg, is 93 mg three times a day
- > 55 kg, is 124 mg three times a day

MIPLYFFA can be administered with or without food











NPC is a Neurodegenerative Lysosomal Storage Disorder



NPC causes cholesterol buildup that leads to cell death



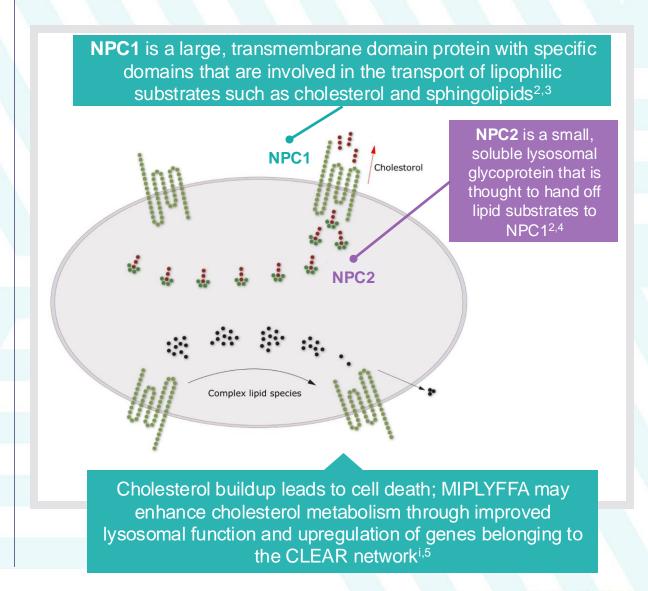
NPC gene mutations produce abnormal, absent, or non-functional NPC proteins¹



Progressive lipid build up leads to cell death and ultimately organ dysfunction in the spleen, liver, and brain



Disease results in impairment and loss of cognition, speech, swallow ability, fine motor skills, and ambulation





NPC is an Ultra-Rare, Heterogenous and Fatal Disease



~1,800

Individuals in the U.S. and Europe diagnosed and live with NPC ~900 patients the U.S., of which ~300 are diagnosed or treated⁶

Onset at Any Age Makes NPC particularly difficult to diagnose

Heterogeneous
Rate of progression, always fatal

~13 Years
Mean age of death⁶

~80%
Of patients who participated in the

Of patients who participated in the Phase 2/3 clinical trial took miglustat⁷ page 2/3 clinical trial took miglustat⁷

Miglustat
The primary treatment for NPC patients in the EU and U.S.ⁱ



MIPLYFFA is Cornerstone Treatment for NPC

Efficacy

Proven effectiveness using the rescored 4-domain NPC clinical severity scale (R4DNPCCSS)

MIPLYFFA used in combination with miglustat shown to halt disease progression through 12-months of treatment⁷

> Only U.S. approved product for NPC with 5+ years of evidence-based data outcomes

Safety

Generally well-tolerated therapy

Adverse events were generally mild to moderate in severity and few led to a withdrawal of treatment⁷

> >270 NPC patients have been treated, including pivotal studies, open label extension, and Expanded Access Program (EAP)

Dosing

Oral, weight-based dosing

3x per day, either by swallowing the whole capsule with or without food, or by adding the contents to a small amount of water, apple juice, or soft foods, or via a feeding tube

Advantage

➤ MIPLYFFA is the first product approved for treatment of NPC and the only product approved in combination with miglustat shown to halt disease progression through 12-months

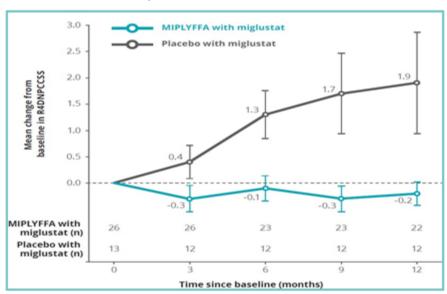
MIPLYFFA has Proven Effectiveness in Stopping Disease Progression in Patients who also Received Miglustat

Proven Effectiveness: Shown to halt disease progression in patients who also received miglustat⁷

The estimated placebo adjusted mean change from -2.2 pts. baseline at month 12 was

NPC SYMPTOM REDUCTION AT 12 MONTHS

as measured by the R4DNPCCSS score: ambulation, speech, swallow, and fine motor skills



Well-Tolerated Safety Profile: Adverse events were generally mild to moderate in severity and few led to a withdrawal of treatment⁷

Adverse reaction ¹	MIPLYFFA with miglustat n=26 n (%)	Placebo with miglustat n=13 n (%)
Upper respiratory tract infection*	8 (31)	2 (15)
Diarrhea	6 (23)	3 (23)
Decreased weight	4 (15)	0
Decreased appetite	3 (12)	0
Tremor	3 (12)	0
Urticaria**	3 (12)	0
Headache	3 (12)	1 (8)
Lower respiratory tract infection	3 (12)	1 (8)
Seizure	3 (12)	1 (8)



^{*}Upper respiratory tract infection: combined incidence of upper respiratory tract infection and rhinitis.

^{**}Urticaria: Includes one patient in which urticaria occurred alone (3%) and two patients who had urticaria with angioedema (6%).



Early MIPLYFFA Launch Metrics

U.S. Launch Metrics as of October 31, 2024ⁱ

- 90 prescription enrollment forms received
 - 69 of which were from U.S. EAP participants
 - 21 patients new to MIPLYFFA and outside of the EAP
- 30% of all prescription enrollment forms approved for reimbursement

Exploring Regulatory Path in EU

- EU-based EAP continues with ~70 to 80 patients
- ~\$2.1M per quarter in net reimbursements from French EAP
- Exploring regulatory path in Europe and other countries

U.S. Prescribing Information for OLPRUVA® (sodium phenylbutyrate) for Oral Suspension

Indication

OLPRUVA is a nitrogen-binding agent indicated as adjunctive therapy to standard of care, which includes dietary management, for the chronic management of adult and pediatric patients weighing 20 kg or greater and with a body surface area (BSA) of 1.2 m2 or greater, with urea cycle disorders (UCDs) involving deficiencies of carbamylphosphate synthetase (CPS), ornithine transcarbamylase (OTC), or argininosuccinic acid synthetase (AS).

Recommended Dose

The recommended dosage is 9.9 -13 g/m2/day.



UCDs are Rare Inherited Metabolic Disorders Characterized by Hyperammonemia



Defect in one of the 6 enzymes or 2 transporters in urea cycle leads to accumulation of ammonia^{8,14}



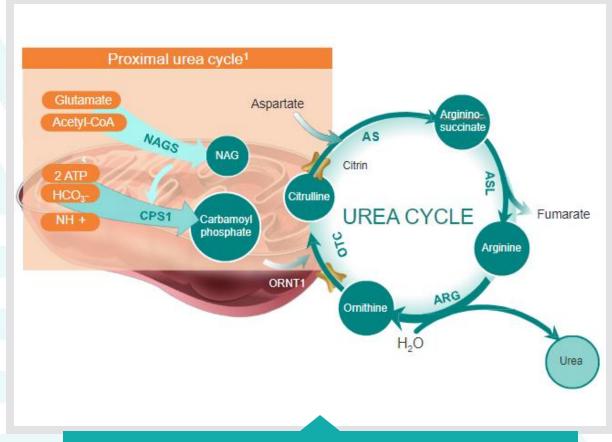
Elevated ammonia can be neurotoxic, leading to neurocognitive damage and even death⁹⁻¹²



Signs and symptoms of hyperammonemia can present acutely or chronically, and can first manifest across the age spectrum^{9,13-15}



Treatment goals are to prevent hyperammonemia, achieve normal development & neurocognitive function, & minimize the risk of chronic complications^{9,16}

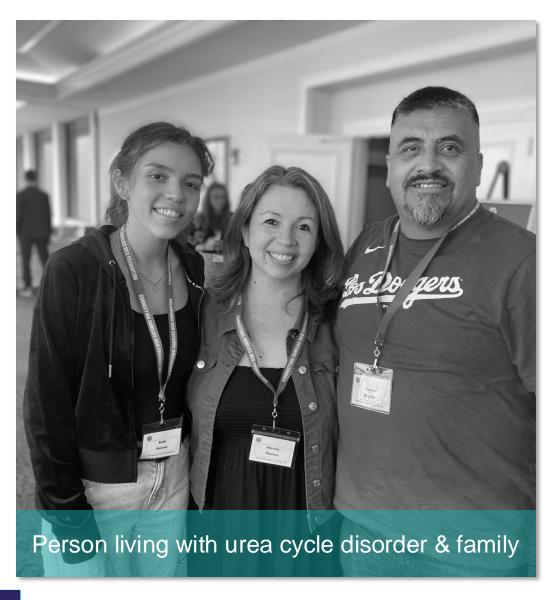


OLRPUVA is a nitrogen scavenger that removes excess ammonia

Figure adapted from Summar ML, Mew NA. Pediatr Clin North Am. 2018;65(2):231-246.



Poor Treatment Adherence Remains an Unmet Need in UCDs



~1,100

Individuals in the U.S. diagnosed in the U.S.¹⁷

~80%

Of patients have deficiencies in the CPS, OTC, or AS enzymesⁱ

>800

Patients are currently receiving treatment in the U.S.¹⁷

>25%

Of hyperammonemic crises stem from poor treatment adherence¹⁸



Potential to Improve Compliance with OLPRUVA through Formulation Designed for Convenience and Palatability

Efficacy

Established efficacy profile through 505(b)(2) filing in-line with market leader

➤ OLPRUVA is indicated as adjunctive therapy to standard of care for long-term management of adults and children in UCDs involving deficiencies of CPS, OTC and AS

Safety

Safety profile in-line with other nitrogen scavengers

Demonstrated by use of sodium phenylbutyrate for the treatment of UCDs since 1996

Dosing

Oral, weight-based dosing

- Convenient pre-measured, single-dose envelopes for ease of use and "ammonia control on the go"
- Unique formulation designed for palatability and adherence

Advantage

Novel dual-coated formulation of sodium phenylbutyrate delays release in water for up to 5 minutes





Unmet Medical Needs in UCDs

Important reasons to reassess therapy for patients currently on a nitrogen scavenger therapy

1

Poor Adherence

2

Recurrent Hospital Visits (hyperammonemic crises)

3

Not on Optimal Treatment & Mild Undiagnosed UCD



Driving Adoption of OLPRUVA through Patient Experience



Adult Patients Diagnosed with busy lifestyles

- Need to take their medication at work
- Have jobs that allow limited time for treatment
- Missing their midday dose
- Patients who travel
- May want to be discreet or more private with their treatment
- Experiencing symptoms such as vomiting, confusion, mental fogginess, lethargy



Diagnosed

and naïve to treatments

- Taking medication was inconvenient / not worth the trouble
- Couldn't tolerate previous medications
- Didn't like the taste or texture of previous medications
- May want to be discreet or more private with their treatment
- Elevated ammonia and/or glutamine
- Experiencing symptoms such as vomiting, confusion, mental fogginess, lethargy



Celiprolol Potential Treatment for Vascular Ehlers-Danlos Syndrome (VEDS)



VEDS Impairs Connective Tissue



Most severe Ehlers-Danlos syndrome subtype¹⁹



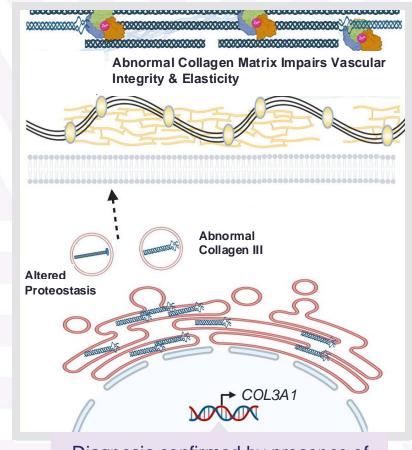
Inherited **connective tissue disorder** caused by **COL3A1** gene mutations



Leads to defect in type III procollagen in vessel walls and hollow organs



Characterized by arterial aneurysms and hollow organ ruptures¹⁹



Diagnosis confirmed by presence of mutations in the *COL3A1* gene

Figure adapted from Omar R, et al. Matrix Biol Plus. 2021 Nov 9;12:100090.



Significant Unmet Need in VEDS with No Approved Treatments



~7,500

Individuals in the U.S. diagnosed and live with VEDS²¹

Majority (95%) have genetically confirmed (*COL3A1*) diagnosis^{19, 20}

~25%

Of patients experience an event before the age of 20¹⁹

~90%

Of patients experience an event by the age of 40¹⁹

51 Years

Median survival age with arterial rupture being the most common cause of sudden death¹⁹

Surgical intervention

Is the current treatment paradigm

Celiprolol

Is the primary treatment for VEDS patients in several European countries²²



Celiprolol is a Potential Treatment of Patients with COL3A1+ VEDS

Celiprolol designed to reduce mechanical stress on collagen fibers within arterial wall

New Chemical Entity in the U.S., Orphan Drug Designation and Breakthrough Therapy Designation, & IP to 2038

- Selective adrenergic modulator (SAM)
- Mechanism of action in VEDS patients is thought to be through vascular dilatation and smooth muscle relaxation
- May reduce the mechanical stress on collagen fibers within the arterial wall

Previously Completed Studies & Ongoing DiSCOVER Trial

- Multicenter, randomized, controlled, open-label, event blinded Ph3 study
- Results: 5% annual risk of major vascular event in celiprolol treated vs.
 12% in not-treated

BBEST Trial, 2010²³

- Retrospective observational study
- Patients not treated with celiprolol had a worse survival outcome than treated patients (p=0.0002)

Long-Term Observational: French Cohort, 2019²⁴

- Observational study
- 66% reached target dose of 400mg and tolerated celiprolol well
- Follow up of 106 patient years, five patients suffered major vascular events, 4.7% annual risk

Long-Term Observational: Swedish Cohort, 2021²⁵

- DiSCOVER Phase 3 decentralized (virtual) pivotal study ongoing
- Special Protocol Assignment (SPA) in place

DiSCOVER Trial, Ongoing



KP1077 (Serdexmethylphenidate) Potential Treatment for Idiopathic Hypersomnia (IH)

IH Causes Brain Fog, Excessive Daytime Sleepiness, & Sleep Inertia



Rare, debilitating, chronic neurologic disorder



Unknown pathophysiology

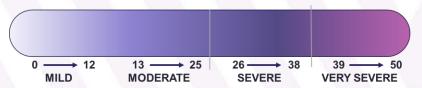


Also characterized by excessively long sleep times, difficulty waking, & long and unrefreshing napsⁱ



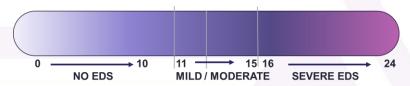
Symptoms measured by Idiopathic Hypersomnia Severity Scale & Epworth Sleepiness Scale

Idiopathic Hypersomnia Severity Scale



- 14 questions on a scale of 0 to 3 or 0 to 4, totaling 50 points²⁶
- Higher scores, indicate more severe/frequent symptoms²⁶
- Minimal Clinically Important Difference (MCID) of 4 points²⁷

Epworth Sleepiness Scale



- 8 questions on a scale of 0 to 3, totaling 24 points²⁸
- Higher scores, indicate more severe daytime sleepiness²⁸
- 2- to 3-point change is considered MCID in sleep disorders²⁹



Remaining Unmet Need in IH



~37,000

Individuals in the U.S. diagnosed and live with IH, though the total population may be much larger³⁰

~66%

Report IH symptoms as High Impact including not feeling refreshed, fatigue, excessive daytime sleepiness, and brain fog³¹

~85%

Require more than a first-line therapy due to unresolved symptoms³²

Current Treatments Don't Address Needs

Patients rated current medication effectiveness as poor (5.4 on a 10-point scale)³³



KP1077 has a Differentiated Profile Addresses Unmet Needs in IH

KP1077 for IH

- SDXⁱ is a proprietary prodrug of d-MPH
- Two dosing regimens being explored:
 - Once daily at bedtime
 - o Twice daily once in the morning and once at bedtime

Improved Safety and Tolerability Over Existing Treatments

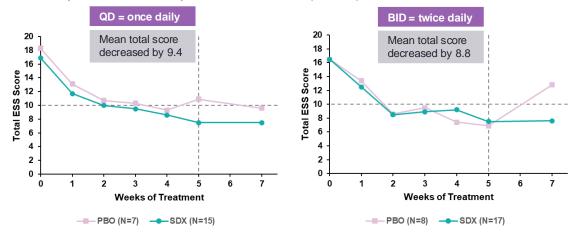
- Unique pharmacokinetic profile to overcome key symptoms
- Greater tolerability, lower cardiovascular effects, lower abuse potential
- · No DDI potential with hormonal contraceptives; antidepressants

Regulatory & IP Advantages

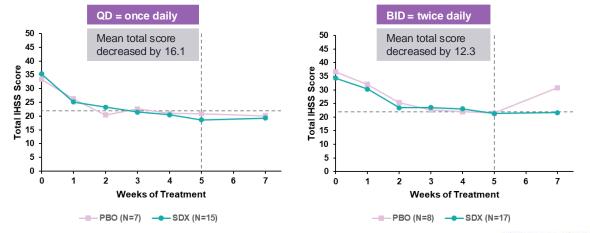
- Orphan Drug Designation in IH
- Conducted End-of-Phase 2 meeting with the FDA at the end of Q3 2024
- SDX is designated Schedule IV controlled substance by DEA in the U.S.ⁱⁱ

Results from Ph. 2 Clinical Trialⁱⁱⁱ; All patients received active drug in Weeks 1-5; (decrease = improvement)

A. Epworth Sleepiness Scale (ESS)



B. Idiopathic Hypersomnia Severity Score (IHSS)





ii. Zevra's proprietary prodrug of d-methylphenidate (d-MPH) has been classified as a Schedule IV controlled substance by the U.S. Drug Enforcement Administration (DEA)





Strong Corporate Foundation Demonstrating Financial Discipline



Financial Position is a Source of Strength

Q3 2024 Income Statement Details:

- Net revenue of \$3.7M, comprised of \$2.6M from the arimoclomol French EAP program, and \$1.1M under the AZSTARYS[®] license agreement
- Q3 2024 net loss attributable to common stockholders of (\$33.2M), or (\$0.69) per basic and diluted share, driven primarily by R&D expense of \$10.9M, and general and administrative expense of \$16.2M

Q3 2024 Balance Sheet Details:

- Cash, cash equivalents and investments were \$95.5M
- Available cash, cash equivalents and investments expected to extend cash runway into 2027
 - cash runway does not include potential proceeds from sale of PRVⁱ
- Debt of \$60M, additional \$20M tranche available

Common and Fully Diluted Shares Outstanding:

As of Sep 30, 2024, common and fully diluted shares outstanding were:

	(millions)
Common shares outstanding	53.2
Outstanding awards under equity incentive plans	9.0
Outstanding common stock warrants	5.5
Fully diluted shares outstanding	67.7



Zevra has a Unique Opportunity to Impact People Living with Rare Diseases

Two commercial-stage rare disease products

- Launch of MIPLYFFA, cornerstone therapy for people living with NPC
- OLPRUVA launched for the treatment of certain UCDs

Advanced clinical development pipeline

- Prioritizing arimoclomol's regulatory submission in Europe
- Ongoing Phase 3 program for treatment of VEDS
- Seeking strategic alternatives to develop and commercialize KP1077, Phase 3 ready, for rare sleep disorders

Existing infrastructure supportive of future growth

- Aspire to become a "partner of choice" for rare disease products
- Leverage current commercial infrastructure

Strong financial position with cash runway into 2027

- Disciplined capital allocation
- Cash runway into 2027 without potential proceeds from sale of PRV
- Potential to monetize PRV
- Royalty generating asset (AZSTARYS) and French EAP (arimoclomol) contribution



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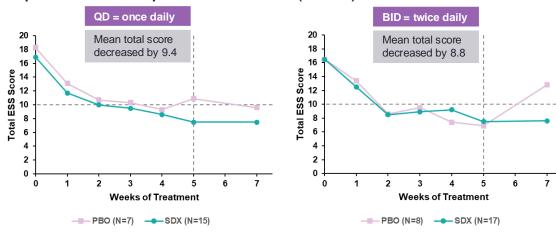
NasdaqGS: ZVRA

Appendix

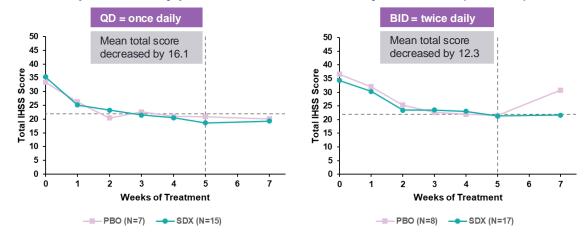
KP1077 Ph. 2 Trial Produced Clinically Meaningful Improvements at All Endpoints

All patients received active drug in Weeks 1-5; (decrease = improvement)

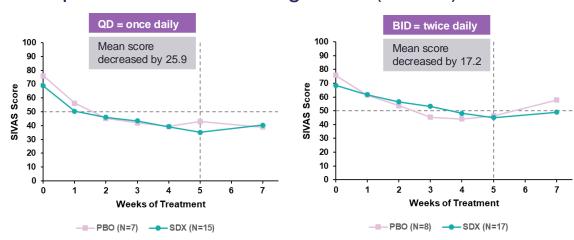
A. Epworth Sleepiness Scale (ESS)



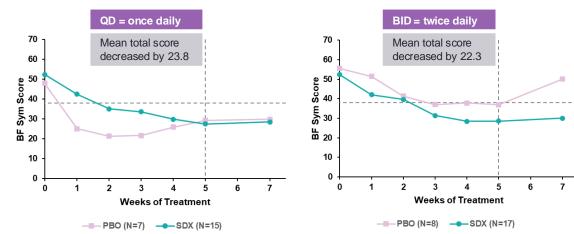
B. Idiopathic Hypersomnia Severity Score (IHSS)



C. Sleep Inertia Visual Analog Scale (SIVAS)



D. Brain Fog Symptom Scale (BFS)





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