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Fourth Quarter and Full Year 2023 Earnings Call

February 27, 2024

Call Agenda

Welcome	**Al Kildani** | Senior Vice President, Investor Relations and Corporate Communications
CEO Opening Remarks	**Steve Davis** | President and Chief Executive Officer
Commercial Update	**Brendan Teehan** | Chief Operating Officer, Head of Commercial
R&D Update	**Doug Williamson, M.D.** | Head of Research and Development
Financial Update	**Mark Schneyer** | Chief Financial Officer
Closing Remarks	**Steve Davis** | President and Chief Executive Officer
Q&A Session	**Parag Meswani, Pharm D.** | Senior Vice President, Trofinetide – Rare Disease Franchise, *available for Q&A*

Forward-Looking Statements

This presentation contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include all statements other than statements of historical fact and can be identified by terms such as “may,” “will,” “should,” “could,” “would,” “expects,” “plans,” “anticipates,” “believes,” “estimates,” “projects,” “predicts,” “potential” and similar expressions (including the negative thereof) intended to identify forward-looking statements. Forward-looking statements contained in this presentation, include, but are not limited to, statements about: (i) our business strategy, objectives and opportunities; (ii) plans for, including timing, development and progress of commercialization or regulatory timelines for, NUPLAZID, DAYBUE and our product candidates; (iii) benefits to be derived from and efficacy of our products, including the potential advantages of NUPLAZID and DAYBUE and expansion opportunities for NUPLAZID and DAYBUE in other indications, and for DAYBUE in jurisdictions outside the U.S.; (iv) estimates regarding the prevalence of the diseases targeted by our products and product candidates; (v) potential markets for any of our commercial products; and (vi) our estimates regarding our future financial performance, cash position, profitability or capital requirements.

Forward-looking statements are subject to known and unknown risks, uncertainties, assumptions and other factors that may cause our actual results, performance or achievements to differ materially and adversely from those anticipated or implied by our forward-looking statements. Such risks, uncertainties and other factors include, but are not limited to: our dependency on the continued successful commercialization of NUPLAZID and DAYBUE and our ability to maintain or increase sales of NUPLAZID or DAYBUE; the costs of our commercialization plans and development programs, and the financial impact or revenues from any commercialization we undertake; our ability to obtain necessary regulatory approvals for our product candidates and, if and when approved, market acceptance of our products; our dependence on third-party collaborators, clinical research organizations, manufacturers, suppliers and distributors; the impact of competitive products and therapies; our ability to generate or obtain the necessary capital to fund our operations; our ability to grow, equip and train our specialized sales forces; our ability to manage the growth and complexity of our organization; our ability to maintain, protect and enhance our intellectual property; and our ability to continue to stay in compliance with applicable laws and regulations. Given the risks and uncertainties, you should not place undue reliance on these forward-looking statements. For a discussion of these and other risks, uncertainties and other factors that may cause our actual results, performance or achievements to differ, please refer to our quarterly report on Form 10-Q for the quarter ended September 30, 2023 as well as our subsequent filings with the Securities and Exchange Commission from time to time, including our annual report on Form 10-K for the year ended December 31, 2023. The forward-looking statements contained herein are made as of the date hereof, and we undertake no obligation to update them after this date, except as required by law.

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Opening Remarks

Steve Davis, President and Chief Executive Officer

ACADIA® Investment Thesis

Two successful commercial franchises driving record revenues

- $726.4M 2023 FY revenues
  - $231M Q4 revenues
- DAYBUE™ - $177.2M FY revenues
  - $87.1M Q4 revenues
- NUPLAZID® - $549.2M FY revenues
  - 143.9M Q4 revenues

Three late-stage assets with strong early-stage pipeline

- Anticipating ADVANCE-2 top line results in Negative Symptoms of Schizophrenia this quarter
- Ongoing Phase 3 trial of ACP-101 in Prader-Willi Syndrome
- Ongoing Seamless P2 / P3 program of ACP-204 in Alzheimer's Disease Psychosis
- Numerous early-stage programs

Financial strength

- 40% revenue growth in FY23
- Cash balance of $438.9 million as of YE2023
- Cash balance expected to grow to $585-655M by YE2024

DAYBUE (trofinetide) is only approved in the U.S. by the FDA for the treatment of Rett syndrome in adults and pediatric patients two years of age and older.
NUPLAZID (pimavanserin) is only approved in the U.S. by the FDA for the treatment of hallucinations and delusions associated with Parkinson's disease psychosis.

Deep CNS Pipeline

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Program	Indication	Preclinical	Phase 1	Phase 2	Phase 3	Marketed
NUPLAZID® (pimavanserin)	Parkinson's Disease Psychosis					
DAYBUE™ (trofinetide)	Rett Syndrome					
Pimavanserin[1]	Negative Symptoms of Schizophrenia					
ACP-101[2,3]	Hyperphagia in Prader-Willi Syndrome					
ACP-204[3]	Alzheimer's Disease Psychosis					
ACP-2591[3]	Rett Syndrome; Fragile X Syndrome					
ASO Programs[3]	SYNGAP1; Rett; Undisclosed					
Multiple Undisclosed Programs	Neuropsychiatric and Rare Disorders					

[1] Safety and efficacy of pimavanserin for the treatment of negative symptoms of schizophrenia have not been established or approved by the FDA. [2] Acadia acquired Levo Therapeutics and its rights/licenses to ACP-101.
[3] The safety and efficacy of these investigational agents have not been established. There is no guarantee these investigational agents will be filed with or approved by any regulatory agency.

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Commercial Update

Brendan Teehan, Chief Operating Officer, Head of Commercial

DAYBUE Commercial Dynamics 10 Months into Launch

Early surge of new patient starts

Led to faster than anticipated uptake and broad HCP experience

Now seeing breadth of prescribing beyond top accounts and more linear adoption curve consistent with other rare disease products

Seasonal dynamics impacting December, January and February

Real World DAYBUE Persistency Continues to Outperform Clinical Trial Experience

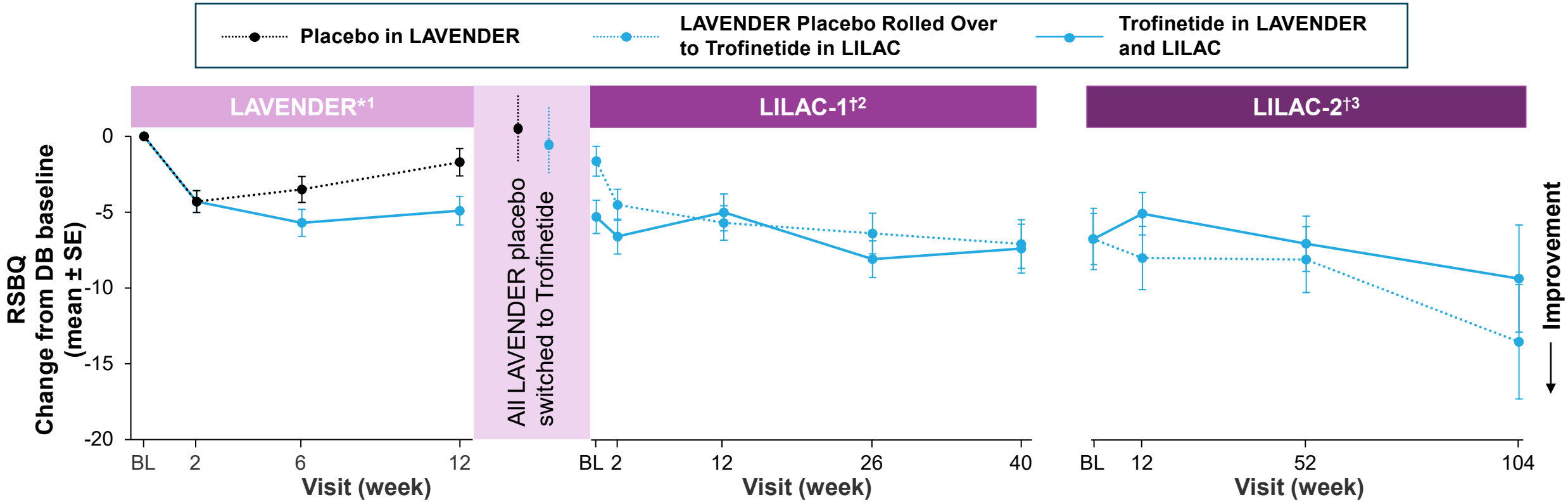
	Previously Presented Real World Persistency[1]	Current Real World Persistency[1]	Lilac-1 Clinical Experience
Month 4	**75%** (Nov '23)	**80%**	**66%**
Month 5	**-**	**76%**	**64%**
Month 6	**68%** (Jan '24)	**70%**	**58%**
Month 7	**-**	**63%**	**51%**

Real world persistency consistently **10+ percentage points** above clinical experience.

Monthly cohort persistency rates are trending up.

[1] Based on confirmed discontinuations and patients who were 60 days past their scheduled refill

LILAC-2 Data Supports Long-Term Benefits Including Improvement Over Time



- LILAC-2 data presented at American Epilepsy Society concluding that open-label treatment with trofinetide for **up to 32 months** in LILAC-2 continued to improve symptoms of Rett syndrome.
- Safety and tolerability were consistent with prior studies.

***** Full analysis set. Difference in LSM from the mixed-effect model for repeated measure analysis. †Safety analysis set. Data are mean (SE).

1 Neul JL, et al. Nat Med. 2023;29(6):1468-1475.
2 Percy AK, et al. Poster presented at the International Rett Syndrome Foundation's Scientific Meeting (IRSF); June 5–7, 2023.
3 Acadia Pharmaceuticals Inc. Data on file. ACP-2566-005 Clinical Study Report. 2024.

For full details about this LILAC-2 poster please contact IR@acadia-pharm.com

Real World Benefits Supported by LILAC-2 Caregiver Exit Interviews

Area/type of improvement with trofinetide reported by ≥15% of caregivers, n (%)	Caregivers N=25 (%)
Engagement with others	11 (42.3)
Hand use	10 (38.5)
Eye gaze	8 (30.8)
Attention/focus/concentration	7 (26.9)
Tobii eye trackers use	7 (26.9)
Ability to make sounds	6 (23.1)
Happier mood or disposition	6 (23.1)
Ability to walk	5 (19.2)
Alertness	5 (19.2)
New words	5 (19.2)
Seizures	4 (15.4)
Aware of environment	4 (15.4)
Repetitive hand movements	4 (15.4)

The results of these qualitative interviews of caregivers of LAVENDER, LILAC, and LILAC-2 patients provide insight into the range and meaningfulness of improvements in Rett symptoms when treated with trofinetide

- Caregivers interviewed reported continued and meaningful improvements

Assessing Experiences With Trofinetide for Rett Syndrome: Interviews With Caregivers of Patients in LAVENDER, LILAC, and LILAC-2 Studies. Kathie M. Bishop, Amy M. Barrett, Oyebimpe Olayinka-Amao, Susan Martin, Dilesh Doshi, James M. Youakim. Acadia Pharmaceuticals Inc., San Diego, CA, USA; 2RTI Health Solutions, Research Triangle Park, NC, USA

DAYBUE Real World Experience

"It was her engagement level with the world outside of her – to me and to friends in school; it just blossomed, and it was like a light was turned on."

"Her verbalization definitely improved, and she started saying more things."

"Picking up things a lot more (mostly her cup), happens daily and she is now trying to drink by herself."

"Improved cognitive ability, and [the parents] are hearing new words or words they have not heard in a while."

Caregiver testimonials are sourced from AnovoRx as well as from poster titled Assessing Experiences With Trofinetide for Rett Syndrome: Interviews With Caregivers of Patients in LAVENDER, LILAC, and LILAC-2 Studies.

Advancing DAYBUE on three key fronts for a global opportunity

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EUROPE

- Engaging with EMA in 1Q24
- MAA filing expected in 1H25

Prevalence

- Estimated 9,000 to 14,000 patients[1] (Europe and UK)

CANADA

- NDS filing expected 1Q24
- Potential approval around YE24

Prevalence

- Estimated 600 to 900 patients[1]

JAPAN

- Engaging Japanese regulatory agency (PMDA) in 2024

Prevalence

- Estimated 1,000 to 2,000 patients[1]

[1]Prevalence numbers estimated by Acadia based on information available.
NDS: New Drug Submission; EMA: European Medical Authority; MAA: Marketing Authorization Application; PMDA: Pharmaceuticals and Medical Devices Agency
Prevalence numbers estimated by Acadia based on information available.

NUPLAZID Strategy: Optimize Cash Flow

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Real world evidence has grown new patient starts and net sales

Reduced NUPLAZID SG&A spend by >$100M on an annualized basis (‘21 vs. ‘23)

$549.2M in net product sales in 2023

Franchise generates >$300 million in annual cash flow

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R&D Update

Doug Williamson M.D., Head of Research and Development

Negative Symptoms of Schizophrenia

No FDA-approved treatment

>700,000 patients in the U.S. have persistent negative symptoms[1]

Chronic, persistent negative symptoms include social withdrawal, restricted speech, lack of emotion, loss of motivation, and blunted affect and can lead to:

- Low social functioning
- Long-term disability
- Significant caregiver burden

[1]Studies suggest that ~40-50% of schizophrenia patients experience predominant negative symptoms; Patel et al. 2015, Haro et al., 2015, Bobes et al. 2010, and Chue and Lalonde, 2014.

Addressing Unmet Need in Predominant, Chronic Negative Symptoms of Schizophrenia

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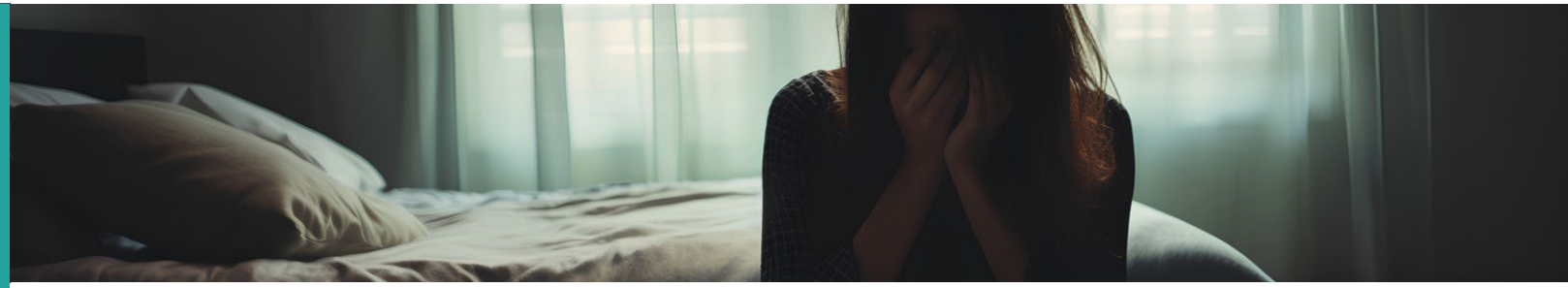
Topline results from ADVANCE-2 Phase 3 study of pimavanserin expected 1Q24



- Completed one positive pivotal study, ADVANCE-1
- ADVANCE-2 leverages optimal therapeutic dose of 34 mg
- 6-month study designed to evaluate impact on persistent negative symptoms beyond acute psychosis period
- Designed to treat patients whose positive psychotic symptoms are adequately controlled, but still suffer from predominant and uncontrolled negative symptoms, inhibiting their ability to live a normal, productive life

Prader-Willi Syndrome (PWS) Opportunity

Significant Unmet Need

- **~8,000-10,000 patients in the U.S.**
- **No FDA approved medicine to treat hyperphagia in PWS**

- Rare and complex neurobehavioral genetic disorder that often leads to social isolation
- Hyperphagia is a defining characteristic of Prader-Willi syndrome and commonly begins between the ages of 3-8
- Hyperphagia is characterized by unrelenting hunger
  - Often leads to obesity and behavioral challenges including anxiety and aggression
  - Extremely distressing for patients, parents and caregivers
- 30 years average life expectancy[1]

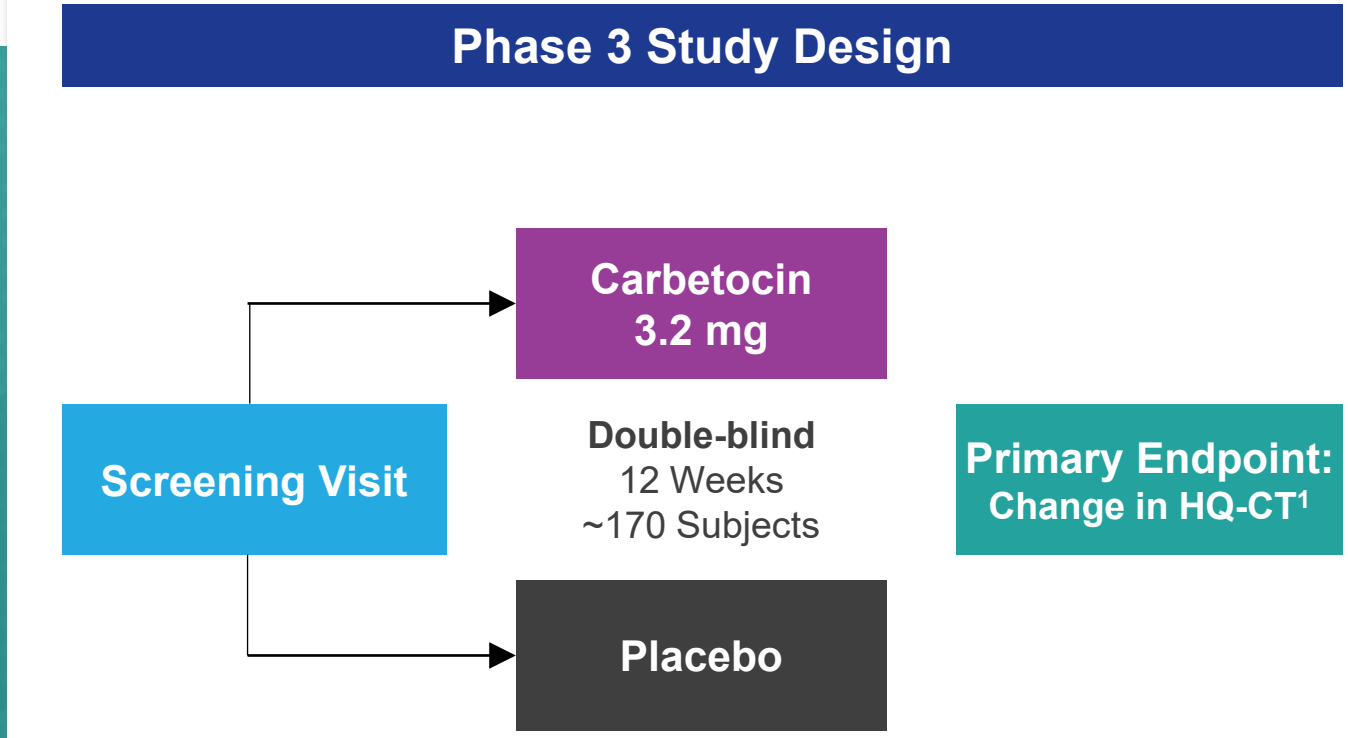
[1]Causes of Death in Prader-Willi Syndrome: Prader-Willi Syndrome Association (USA) 40-Year Mortality Survey. Genet Med. 2017 June ; 19(6): 635–642.

Ongoing Phase 3 Study of ACP-101 for the Treatment of Hyperphagia in PWS

COMPASSPWS

Trial builds on previous Phase 3 clinical trial experience

3.2 mg dose was observed to significantly reduce hyperphagia-related behaviors



1 Hyperphagia Questionnaire for Clinical Trials (HQ-CT) is an observer-reported outcome measure that has been widely used in interventional studies to assess changes in hyperphagic behaviors in individuals with PWS..

ACP-204 in Alzheimer's Disease Psychosis (ADP)

ACP-204 is a next generation $5HT_{2A}$ blocker that builds on the learnings of pimavanserin

Target Product Profile

- Mitigate or eliminate QT prolongation
- Explore doses higher than pimavanserin 34 mg equivalent
- Improved time to onset of action

Phase 1 Results

- ✓ No sign of QT prolongation
- ✓ Wide dose range established supporting potential for ~2x pimavanserin 34 mg equivalent
- ✓ Steady state PK (5 days) achieved in less than half the time of pimavanserin (12 days)

Phase 2 / Phase 3 Program for the Treatment of ADP

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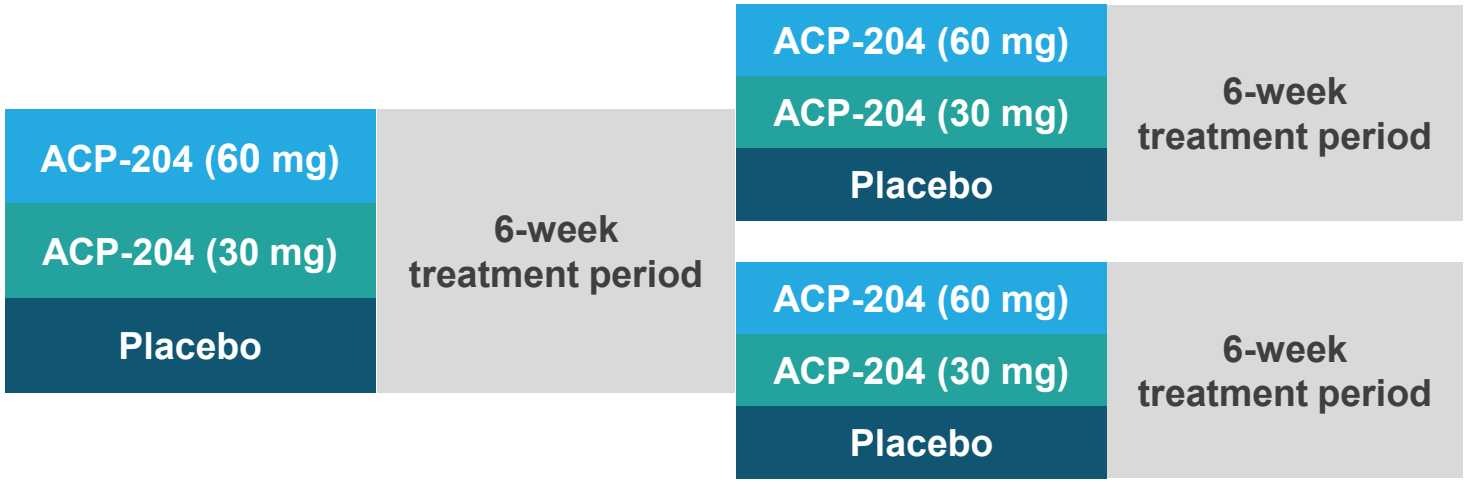
Our clinical experience with pimavanserin supports seamless Ph2 / Ph3 program

Phase 2 and each Phase 3 study designed and sized to be pivotal study if successful

Phase 2
N=318, double-blind, randomized 1:1:1

Two Phase 3 Studies
of similar size and design

Seamless Enrollment



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Financial Update

Mark Schneyer, Chief Financial Officer

4Q23 and FY23 Financial Highlights

Millions, Except EPS	4Q23	4Q22	YoY Change	FY23	FY22	YoY Change
Total Revenue	$231.0	$136.5	*69%*	$726.4	$517.2	*40%*
DAYBUE™	$87.1	-	-	$177.2	-	-
NUPLAZID®	$143.9	$136.5	*5%*	$549.2	$517.2	*6%*
R&D	$66.7	$75.7	*(12%)*	$351.6	$361.6	*(3%)*
SG&A	$111.5	$104.4	*7%*	$406.6	$369.1	*10%*
Net Income (Loss)	$45.8	($41.7)	-	($61.3)	($216.0)	-
EPS	$0.28	($0.26)	-	($0.37)	($1.34)	-
Cash Balance				$438.9	$416.8	

FY 2024 Financial Guidance

	FY23 Results	FY24 Guidance
DAYBUE™ Net Sales	$177.2	$370 - 420 Million
NUPLAZID® Net Sales	$549.2	$560 - $590 Million
NUPLAZID® Gross-to-Net	24.3%	25% - 29%
R&D Expense	$351.6	$305 - $325 Million
SG&A Expense	$406.6	$455 - $480 Million

Building On Our Success

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2023 Recap

- Launched second commercial drug, DAYBUE
- Achieved 40% revenue growth from two commercial franchises, DAYBUE and NUPLAZID
- Completed enrollment in ADVANCE-2
- Acquired worldwide rights to trofinetide
- Initiated Phase 3 trial of ACP-101
- Initiated seamless Ph2 / Ph3 study of ACP-204
- Reached cash flow positivity

2024 and Beyond

- Further capitalize on successful DAYBUE launch
- Strong revenue streams from DAYBUE and NUPLAZID franchises
- Topline results from ADVANCE-2 in NSS in 1Q24
- Global expansion of trofinetide into Canada, Europe and Japan
- ACP-101 program in Prader-Willi syndrome
- ACP-204 program in Alzheimer's disease psychosis
- Sustainable and growing cash flow from operations

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Q&A Session