LB Pharmaceuticals Inc

Developing Novel Therapies for Neuropsychiatric Disorders

September 2025



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These and other risks are described more fully in our filings with the Securities and Exchange Commission ("SEC"), including the "Risk Factors" section and elsewhere in the prospectus filed with the SEC on September 12, 2025 in connection with our initial public offering, and our other documents subsequently filed with or furnished to the SEC. All forward-looking statements contained in this presentation speak only as of the date on which they were made. Except to the extent required by law, we undertake no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they were made.

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Investment Highlights

Advancing a Phase 3 ready asset in schizophrenia (SCZ) with differentiated clinical profile

Phase 2 SCZ trial demonstrated statistically significant benefit versus placebo at all doses studied

Positive FDA feedback offering potential for SCZ approval with one successful Phase 3 trial

Strong scientific and clinical rationale for planned Phase 2 clinical trial in bipolar depression (BPD)

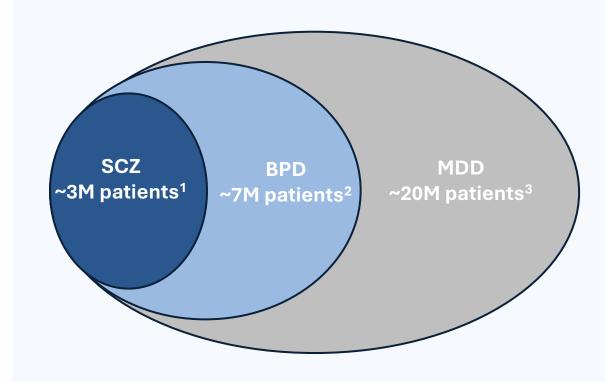
Future indication expansion opportunities including major depression (MDD)

Composition of matter IP with protection expected to 2041¹

Multibillion-dollar sales potential for LB-102 as treatment for SCZ, BPD and MDD²

¹ Includes estimated Hatch-Waxman extension, composition of matter IP expires 2037; LB-102 patent portfolio includes: 7 U.S. issued, 11 foreign issued, 7 U.S. pending, and 19 foreign pending patents; 2 Proprietary company data

Development of APs Typically Starts in SCZ and with a Suitable Mechanism Expands to BPD and MDD

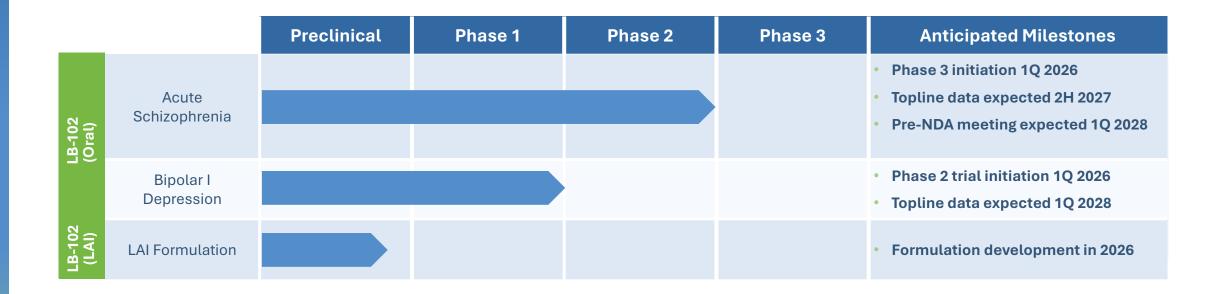


- Development path validated by Vraylar and Caplyta
 - 2024 Vraylar sales exceeded \$3 billion
 - 2025 Intra-Cellular acquired for \$14.6 billion
- LB-102's mechanism, Phase 2 SCZ data and the legacy of amisulpride all support development of LB-102 in:
 - Schizophrenia
 - Bipolar depression
 - Major depression

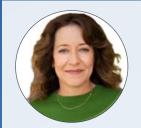
¹ https://www.hopkinsmedicine.org/health/wellness-and-prevention/mental-health-disorder-statistics#:~:text=Approximately%201%25%20of%20Americans%20are,late%20teens%20or%20early%2020s.

² https://www.nimh.nih.gov/health/statistics/bipolar-disorder; ³ https://www.nimh.nih.gov/health/statistics/major-depression#:~:text=disorders%2C%20or%20medication., Prevalence%20of%20Major%20Depressive%20Episode%20Among%20Adults,more)%20races%20(13.9%25)

Significant Milestones and Runway Expected Through 1Q 2028 LE PHARMACEUTICAL



World-Class Leadership Backed by Premier KOLs and Investors



Heather Turner Chief Executive Officer Director

Roche

CARMOT



Gad Soffer Chief Business Officer





Anna Eramo, MD **Chief Medical Officer**



Richard Silva SVP Technical Operations





Marc Panoff SVP Finance



Leading life science investor syndicate









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LB-102 is a Derivative of Amisulpride, a Well Regarded and Widely Used AP in Europe

Drug	Effect size (Overall change in symptoms)
Clozaril/Clozapine ¹	0.89
Solian/Amisulpride ¹	0.73
Zyprexa/Olanzapine ¹	0.56
Cobenfy/KarXT ²	0.56
Risperdal/Risperidone ¹	0.55
Invega/Paliperidone ¹	0.49
Abilify/Aripiprazole ¹	0.41
Latuda/Lurasidone ¹	0.36
Vraylar/Cariprazine ¹	0.34
Rexulti/Brexpiprazole ¹	0.26

- 2 million+ monthly Rx / yr in EU³
- Approvals in SCZ, negative symptoms of SCZ and dysthymia, a form of depression⁴
- Not approved in U.S. because the requirements of FDA were incompatible with patent coverage
- Extensive use in mood disorders
- Second highest effect size among approved APs
- One of the lowest all-cause discontinuation rates
- Favorable safety and tolerability profile⁵

We Developed LB-102 to Address the Limitations of Amisulpride

LB-102 is a Derivative of Amisulpride (Ami); Represents a New Chemical Class for Treatment of Neuropsychiatric Disorders in U.S.

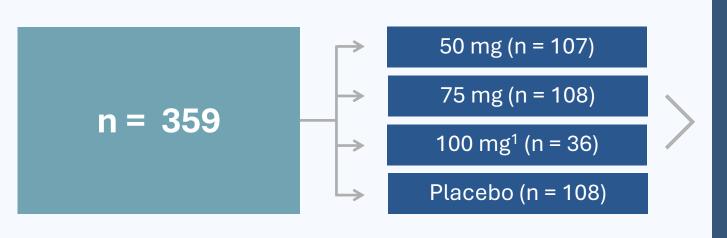
Amisulpride

- Phase 1 data suggest that methylation improves blood-brain-barrier permeability and potency
 - 50 mg LB-102 ≈ 400 mg amisulpride¹
- Phase 2 data validates improved potency and QD dosing profile with potential for better tolerability
- LB-102 retains binding profile of amisulpride:
 - Strong and selective antagonism of D2, D3, 5-HT7
 - Few off-target effects^{2,3}

Phase 2 SCZ Clinical Trial was Designed to be Registrational

<u>4-week</u>, in-patient, double-blinded, placebo-controlled, oral once daily dose in acute schizophrenia patients

- 359 patients at 25 U.S. clinical trial sites
- 50 mg, 75 mg, 100 mg¹, and placebo (Pbo)
- Designed trial to be potentially pivotal by including a large sample size, robust statistical analyses, and other attributes



Primary endpoint: Change from baseline in Positive and Negative Syndrome Scale (PANSS) at 28 days

Secondary endpoints: CGI-S, PANSS positive and negative subscales, Marder factor

Exploratory endpoints: cognition

Safety and tolerability

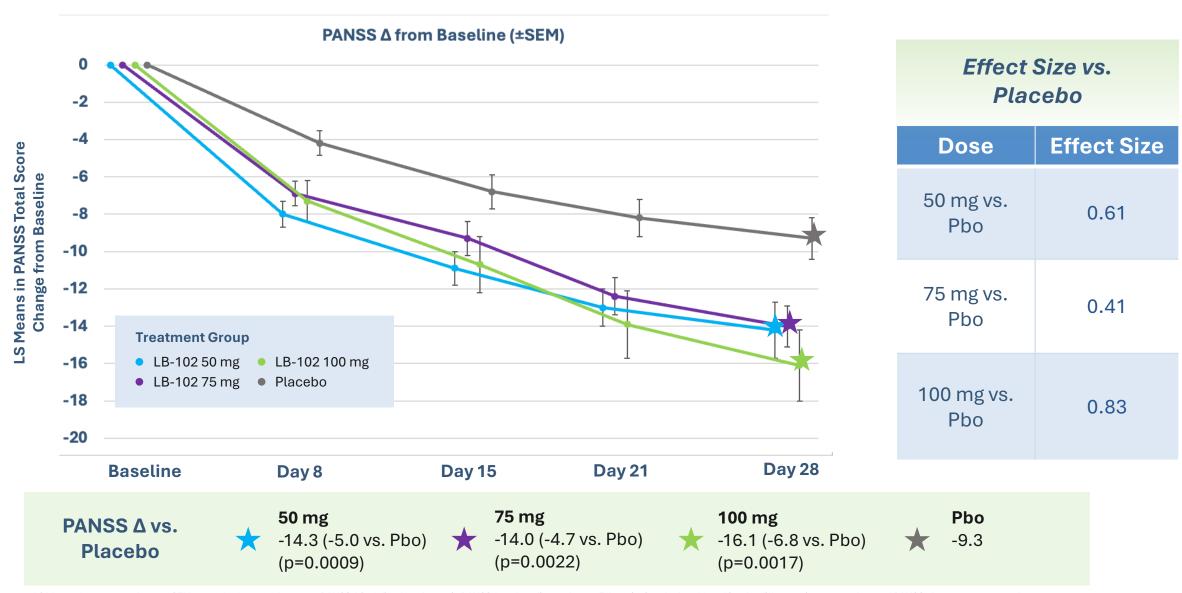
End-of-Phase 2 (EOP2) Feedback from FDA Highlighted the Potential for a Streamlined Path to Approval of LB-102 in SCZ

- FDA noted, in writing, that our Phase 2 SCZ trial appeared to have many of the characteristics of an adequate and well-controlled trial
- Based on this feedback, our Phase 2 trial may serve as one of two trials required to support approval¹

We believe there is a viable path to approval in SCZ with a single 6-week Phase 3 trial¹

¹ Adequacy of our Phase 2 trial to support registration will be a matter of review by the FDA at the time of new drug application (NDA) submission and will depend on the totality of the data included in our submission, including the results of our planned Phase 3 trial. FDA noted preference for a 6-week phase three trial. Registration in SCZ would require the planned Phase 3 trial to meet its primary endpoint as well as compilation of the requisite safety data set and completion of a defined set of clinical and non-clinical NDA-enabling studies. There is no guarantee that our Phase 2 trial may serve as one of the two pivotal trials required for FDA approval, and in such case, we may be required to conduct an additional pivotal trial in acute schizophrenia.

Statistically Superior Clinical Activity to Placebo at All Three Doses



LS Mean = least squared mean; SEM = standard error of the mean, PANSS Δ is defined as change in PANSS from baseline to day 28; Effect size is calculated by taking the difference in average observed PANSS change among completers between two groups (an active treatment arm and placebo) and dividing it by a single measure of variability that combines both groups' observed pooled standard deviation. P refers to "p-value," the conventional method for determining the statistical significance of a result, which represents the probability that random chance caused the result (e.g., a p-value = 0.01 means that there is a 1% probability that the difference between the control group and the treatment group is purely due to random chance). Generally, a p-value less than 0.05 is considered statistically significant.

Robust Cognition Data, Unmet Need Spans SCZ and Mood Disorders

Global Composite Effect in Cognition¹ (LB-102 Phase 2 Trial Results)

	Dose	Effect Size vs Pbo	р	n
LB-102 (Phase 2)	50 mg	0.26	0.0476	84
	75 mg	0.41	0.0027	74
	100 mg	0.66	0.0018	20

Global composite effect on cognition represents composite of five tests covering psychomotor function, memory, attention, working memory and executive function

- Dose dependent significant treatment effect size versus Pbo
- High rate of satisfactory completion of cognitive tests
- Broad patient population without enriching for severe cognitive impairment at baseline
- Substantial unmet need spans SCZ, BPD and MDD²

Generally Favorable Adverse Event (AE) Profile in Phase 2

AEs Reported in Greater Than or Equal to 5% of Patients¹ Number of subjects (% of treatment group)

Adverse Events	50 mg (N=107)	75 mg (N=108)	100 mg (N=36)	Placebo (N=108)
Insomnia	27 (25.2%)	23 (21.3%)	14 (38.9%)	24 (22.2%)
Headache	12 (11.2%)	9 (8.3%)	2 (5.6%)	10 (9.3%)
Anxiety	10 (9.3%)	9 (8.3%)	4 (11.1%)	9 (8.3%)
Agitation	11 (10.3%)	6 (5.6%)	4 (11.1%)	10 (9.3%)
Weight increase	13 (12.1%)	8 (7.4%)	3 (8.3%)	4 (3.7%)
Hyperprolactinemia	11 (10.2%)	8 (7.5%)	6 (16.6%)	0
Blood creatine phosphokinase increased	4 (3.7%)	1 (0.9%)	2 (5.6%)	3 (2.8%)
Alanine aminotransferase increased	3 (2.8%)	1 (0.9%)	2 (5.6%)	1 (0.9%)
Somnolence	1 (0.9%)	4 (3.7%)	2 (5.6%)	0
Constipation	4 (3.7%)	1 (0.9%)	2 (5.6%)	0

Most AEs were mild or moderate in severity

 $AEs\ leading\ to\ discontinuation\ were\ reported\ at\ the\ following\ rates:\ 50\ mg\ (1.9\%),\ 75\ mg\ (2.8\%),\ 100\ mg\ (8.3\%),\ Pbo\ (1.9\%)$

Serious Adverse Events (SAE) occurred at the following rates: 50 mg (less than 1%), 75 mg (less than 1%), 100 mg (2.8%), Pbo (1.9%)

¹ Comorbid conditions at study entry influenced the reporting of TEAEs in our trial. Because TEAEs were defined as any adverse event that began on or after the first dose of trial medication, or any pre-existing condition that reappeared during the treatment period and up to 14 days following the last dose, the rates of certain AEs, such as insomnia, appear elevated in both placebo and LB-102 patients.

Differentiated and Potentially Class Leading Safety Profile: Low EPS and QTc Prolongation with Negligible Sedation

EPS

Number of subjects (% of treatment group)

Preferred Term	50 mg (N=107)	75 mg (N=108)	100 mg (N=36)	Placebo (N=108)
Dystonia	0	3 (2.8%)	1 (2.8%)	1 (0.9%)
Akathisia	1 (0.9%)	2 (1.9%)	0	1 (0.9%)
Extrapyramidal disorder	0	1 (0.9%)	1 (2.8%)	2 (1.9%)
Total EPS	1 (1.0%)	6 (5.6%)	2 (5.6%)	4 (3.7%)

Sedation

Number of subjects (% of treatment group)

Preferred Term	50 mg	75 mg	100 mg	Placebo
	(N=107)	(N=108)	(N=36)	(N=108)
Sedation	0	1 (0.9%)	0	0

Related to prolactin increase

Number of subjects (% of treatment group)

Preferred Term	50 mg (N=107)	75 mg (N=108)	100 mg (N=36)	Placebo (N=108)
Galactorrhea	2 (1.9%)	1 (0.9%)	0	0
Breast enlargement	0	0	1 (2.8%)	0
Erectile dysfunction	0	0	1 (2.8%)	0
Total related to Prolactin	2 (1.9%)	1 (0.9%)	2 (5.6%)	0

QTcF Prolongation

QTcF Δ from Baseline at Day 28 (ms)

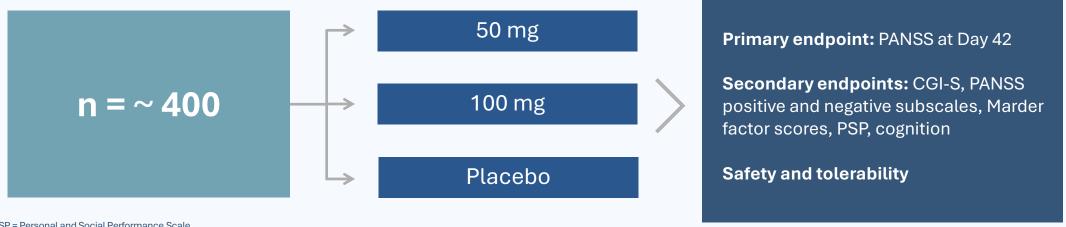
	50 mg (N=107)	75 mg (N=108)	100 mg (N=36)	Placebo (N=108)
Baseline	393.4	394.7	390.0	393.4
Day 28	4.9	4.3	5.4	1.7

Stopping criteria not met at any dose

Planned Phase 3 SCZ Clinical Trial Design Aligned with FDA

6-week in-patient, double-blinded, placebo-controlled, oral once daily dose in acute schizophrenia

- ~ 400 patients, U.S. only, ~ 25 sites
- Expect to initiate in 1Q 2026 with topline readout anticipated in 2H 2027
- 50 mg, 100 mg, and placebo (randomized: 1:1:1)
- Concurrent open label study to accrue safety population as well as additional cognition and negative symptoms data in stabilized patients ($n = \sim 900$ patients)



Phase 3 SCZ Trial Initiation Expected in 1Q 2026

- Trial design finalized with FDA input from positive End-of-Phase 2 interaction
- Operationally ready: clinical trial material (CTM) on track, contract research organization (CRO) selected



¹ Subject to positive topline data readout; ² Subject to positive feedback from FDA

LB-102 has Potential to be the Branded AP of Choice in SCZ

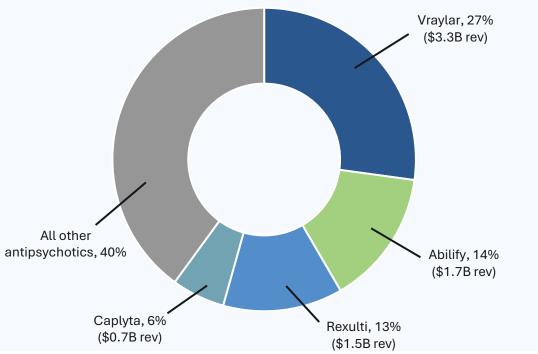
- Compelling evidence of clinical activity in 4-week trial
 - Clinically meaningful PANSS reduction across all three tested dose levels
 - Strong effect size with treatment effect of 0.83 at 100 mg
 - Significant effect on negative symptoms at 50 mg dose
- Potentially class leading safety profile including low EPS, QTc prolongation, negligible sedation
- Robust, significant, dose dependent treatment effect on cognition
- 6-week Phase 3 trial has potential to further improve PANSS reduction
- Additional negative symptoms and cognition data from open label trial available at launch
- New chemical class in the U.S. to expand treatment options
- Potential for first-in-class benzamide LAI and global opportunity

Potential for LB-102 to have competitive efficacy, improved safety, low EPS and sedation, with a positive effect on cognition and negative symptoms

Branded APs Achieve Significant Revenue Driven by Sales in SCZ, BPD and MDD

Indication	# of U.S. Patients
Schizophrenia	~ 3 million
Bipolar Depression	~ 7 million ¹
Major Depressive Disorder	~ 20 million ²
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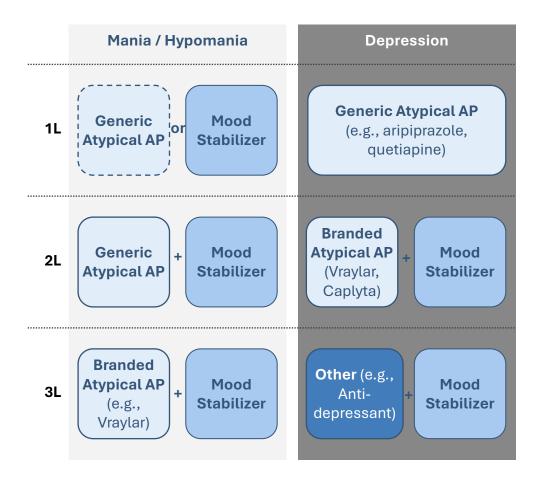


BPD Offers an Attractive Initial Opportunity in Mood Disorders

- Large global revenue opportunity, ~ 40 million patients worldwide¹
- Strong scientific and clinical rationale from SCZ Phase 2 data and Ami experience
- Following SCZ with BPD streamlines cost and timeline
- Few branded agents expected at launch²
- Additional opportunity for LAI
- Success supports expansion into MDD

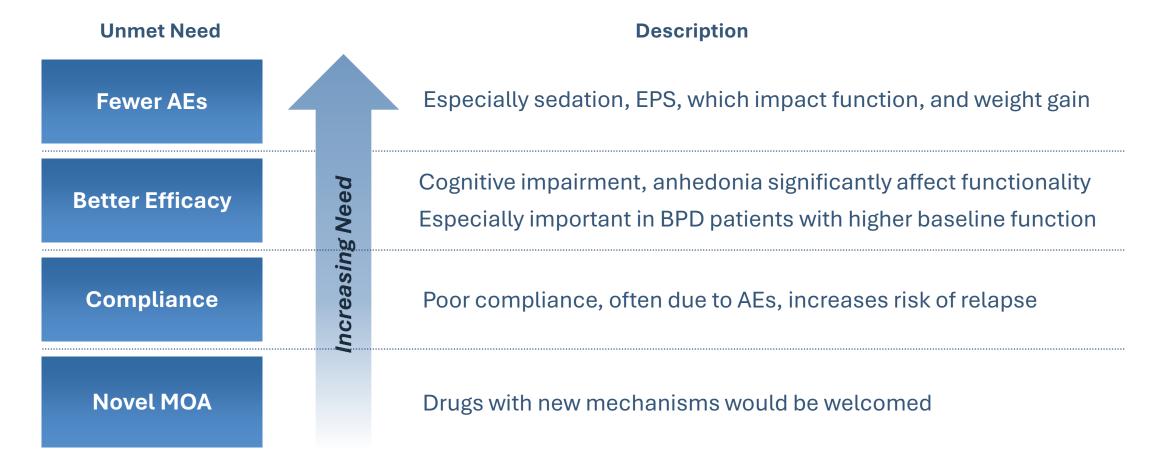
Differentiated Profile with Potentially Competitive Efficacy, Negligible Sedation or GI Effects and Potential to Improve Cognition

Atypical Antipsychotics Are a Mainstay of Treatment for BPD



- APs are favored in patients with bipolar depression with or without mood stabilizers
- Nearly all drugs approved as monotherapy in bipolar depression received their initial approval in SCZ
- Key advantage of APs is ability to treat depression without triggering mania
- Antidepressants are effective in treating depression,
 but are used in later lines given risk of causing mania

Substantial Unmet Need Remains in the Treatment of BPD



Switching treatments is common with ~61% of BPD patients having switched at least once due to inadequate clinical response and side effects

Leading Therapeutics Approved for BPD Highlight Unmet Need

Metric	Caplyta (Branded)	Vraylar (Branded)	Seroquel (Generic)
MADRS	4.6 point ∆ vs Pbo	2 - 4 point Δ vs Pbo	4 - 6.5 point Δ vs Pbo
Cognition / Anhedonia	No data	No data	No data
Somnolence / Sedation	13% vs 3% Pbo	6-7% vs 4% Pbo	~57% vs ~15% Pbo
EPS (including akathisia)	~1.3% vs 1.1% Pbo	10-16% vs 4% Pbo	7% vs 2% Pbo
Nausea / Vomiting / Dry mouth	17% vs 4% Pbo	7% vs 3% Pbo	49% vs 17% Pbo
Average Weight gain vs Pbo	-0.3 kg vs Pbo	~0.5-0.8kg vs Pbo	≥7% increase: 8% vs 2% Pbo

Potential for LB-102 to have competitive efficacy, improved safety, low EPS and sedation, and a positive effect on cognition / anhedonia

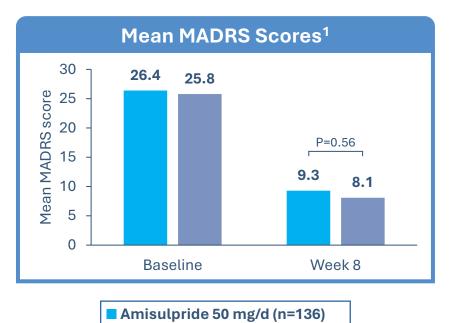
There is a Strong Scientific and Clinical Rationale for LB-102 in BPD

- LB-102's strong antagonism of D2, D3, and 5HT7 makes it well suited for mood disorders
- LB-102 Phase 2 trial in SCZ demonstrated antipsychotic activity and differentiation potential (e.g., tolerability, cognition)
- Ami is approved for dysthymia in Europe and is demonstrated to be as effective as certain approved agents for MDD ^{2,3}
- Efficacy in MDD translates to BPD
- Non-racemic Ami showed antidepressant activity in two third-party, Pbo-controlled BPD trial
- There is wide use of amisulpride in bipolar disorder (approximately 3.4% of Ami Rx / yr in Europe)¹
- Planned LB-102 Phase 2 in BPD will employ a fixed-flexible dose trial design

¹ Proprietary IQVIA Data from Austria, Germany, Italy, Romania, Belgium, Greece, Luxembourg, Slovakia, Czech Republic, Hungary, Poland, Spain, France, Ireland, Portugal, Switzerland; Cassano GB, et al. Int Clin Psychopharmacol. 2002;17(1):27-32.;

Amisulpride Was Observed to Be Equivalent to or Better Than the Most Effective Antidepressants Approved in Major Depression

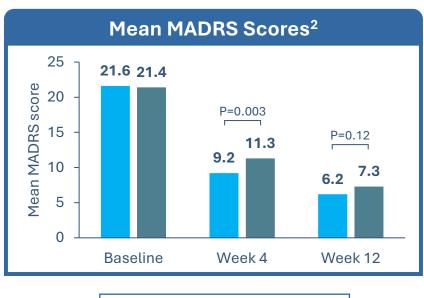
Amisulpride vs Paxil (head-to-head study)



~ 16.5 point reduction in MADRS from Baseline

■ Paroxetine 20 mg/d (n=136)

Amisulpride vs Zoloft (head-to-head study)

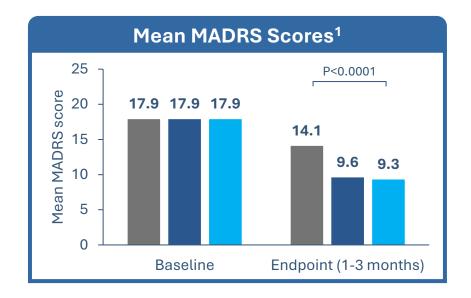


■ Amisulpride 50 mg/d (n=156)
■ Sertraline 50–100 mg/d (n=150)

~ 12-15 point reduction in MADRS from Baseline

Amisulpride has also Demonstrated Statistically Significant Benefit versus Placebo in Depression

Amisulpride vs Placebo



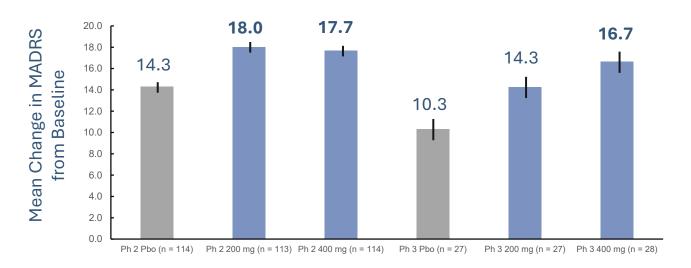
 \sim 4.8-point MADRS Δ versus Pbo Consistent with magnitude of benefit of approved agents

■ Placebo (n=105)
■ Amineptine 200 mg/d (n=101)
■ Amisulpride 50 mg/d (n=107)

- MDD and BPD characterized by a similar imbalance in neurotransmitters regardless of underlying pathology²
- Among the four APs approved for SCZ / MDD or TRD and studied in BPD, 75% succeeded in treatment of BPD

Clinical Experience of SEP-4199, a Non-Racemic Form of Amisulpride, Further Supports Potential of LB-102 in BPD

SEP-4199 Phase 2 1 and Phase 3 Trial 2 Results in BPD MADRS Δ from Baseline at 6 weeks



 $\frac{\text{Phase 2 Results}}{\text{3.4 to 3.7-point MADRS }\Delta\text{ versus Pbo (p < 0.05)}}\\ \sim 18\text{-point reduction versus baseline}$

Phase 3 Results
4.0 to 6.4-point MADRS Δ versus Pbo
~14 to 17-point reduction versus baseline

Placebo

MADRS Δ of approved agents (~2 to 6.5)

Non-racemic amisulpride

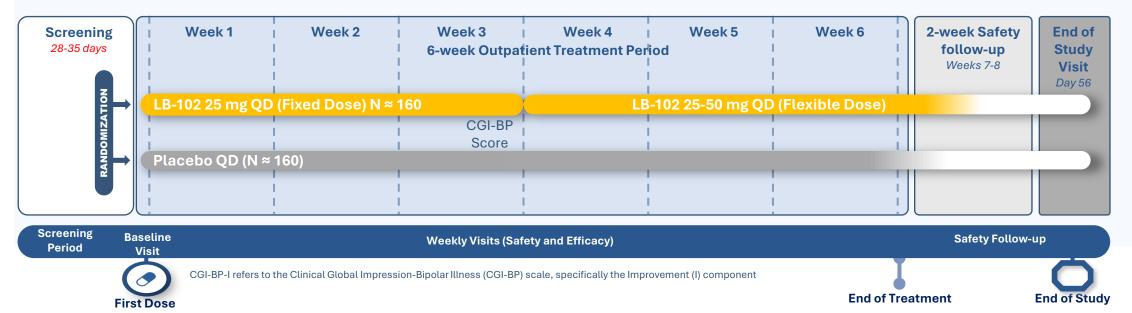
Comments

- Two trials of SEP-4199 support its antidepressant effect in BPD patients
- Approximately 17-point reduction in MADRS from baseline in two trials
- Phase 2 Statistically significant results in all patients (U.S. +EU +JP), n = 341
- Phase 3 MADRS Δ of ~ 6 prior to stopping for business reasons unrelated to data
- Average Pbo rate in recent BPD trials
 ~12.2-point reduction from baseline

Registrational Quality Phase 2 Trial Designed to Achieve Differentiation

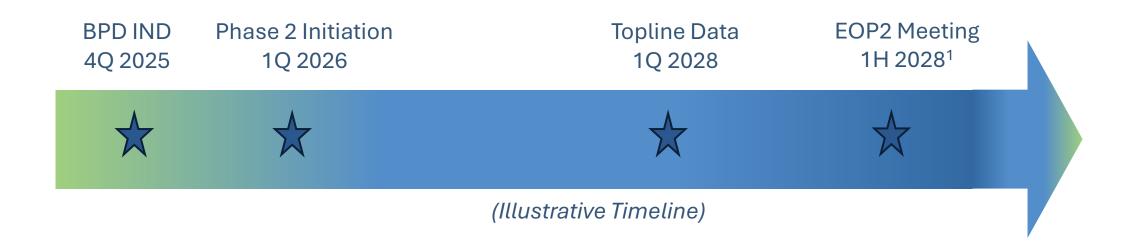
Outpatient, double-blinded, placebo-controlled, oral, once daily fixed-flexible dose in bipolar depression, with 6-week treatment duration

- ~ 320 patients, 30 sites, U.S. only, two arms
- 25 mg fixed dose (first 3 weeks), flexible dose 25-50 mg (Weeks 4-6), randomized 1:1
- Primary endpoint: MADRS-10, all LB-102 treated patients vs Placebo
- Secondary endpoints: MADRS-6, CGI-BP, Cognition, Anhedonia, Safety, and tolerability
- Flexible dose trials typically have better signal detection than fixed dose trials¹



Targeting Phase 2 Initiation in 1Q 2026 with Topline Data **Anticipated in 1Q 2028**

- Trial design finalized with KOL input
- Investigational new drug (IND) submission expected in 4Q 2025
- Operationally ready: CTM on track, CRO selected
- Principal investigator selected: Dr. Maurizio Fava



¹Subject to positive topline data readout 28

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LB Pharmaceuticals Inc Thank you!