pharmaceuticals

CORPORATE PRESENTATION

DECEMBER 2023

Making Smart Chemical Changes to Create Improved Novel Therapeutics

DISCLAIMERS

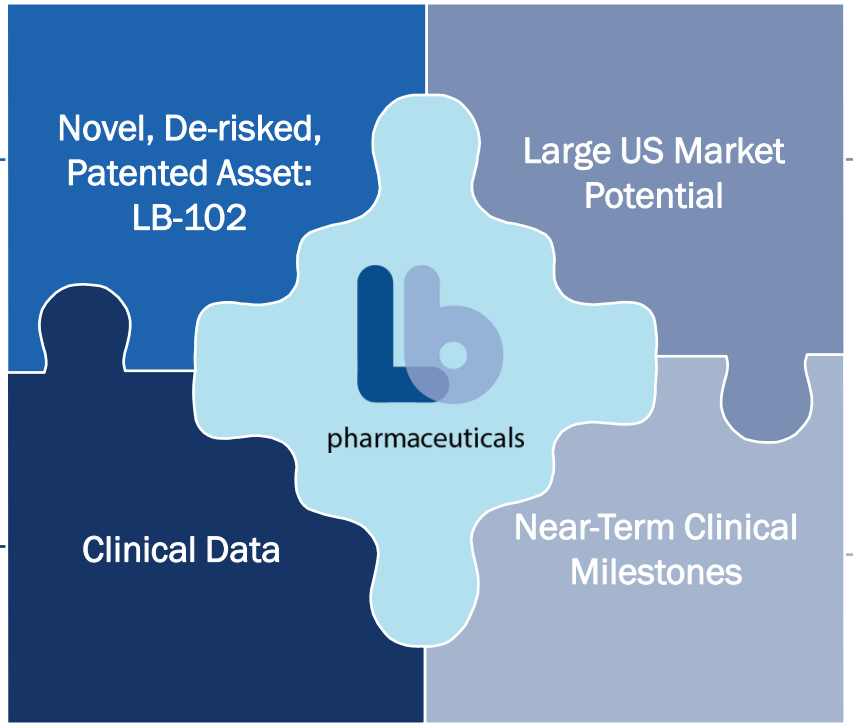
The Company has made statements throughout this presentation which constitute forward-looking statements. These statements involve known and unknown risks, uncertainties and other factors that may cause its actual results, levels of activity, performance or achievements to be materially different from any results, levels of activity, performance or achievements expressed or implied by any such forward-looking statements. In some cases you can identify forward-looking statements by terminology such as “may,” “will,” “should,” “could,” “expect,” “hopes,” “intends,” “plans,” “anticipates,” “believes,” “estimates,” “predicts,” “likely,” “potential,” or “continue” or the negative of these terms and similar words. Although management believe that the expectations reflected in these forward-looking statements are reasonable, management cannot guarantee future results, levels of activity, performance or achievements. Furthermore, management undertakes no obligation to update any forward-looking statements for any reason unless required to do so by law.

LB PHARMACEUTICALS INVESTMENT HIGHLIGHTS

CNS-focused biotech building a pipeline of potential best-in-class therapies for the US market

Lead asset, **LB-102,** is a novel benzamide leveraging the demonstrated efficacy and safety of amisulpride for the treatment of schizophrenia

N = 80 Phase 1 studies showed LB-102 safe, well-tolerated, and bound $D_{2/3}$ at desired occupancy to treat SCZ



LB-102 has potential to exceed $1 billion in annual US sales (based on EU comparison)

Phase 2 study, commenced in 4Q 2023, could validate LB-102 as an important therapy for schizophrenia patients

LB PHARMACEUTICALS BUSINESS STRATEGY

- CNS-focused development stage company intent on building a pipeline of improved versions of effective drugs that are commercially unavailable in the US

- Lead asset LB-102 is a methylated version of amisulpride, one of the leading anti-psychotics in use worldwide for the treatment of schizophrenia

    - LB-102 was designed to be effective at lower doses than amisulpride, which could improve safety and tolerability

    - LB-102 is a novel chemical structure with composition of matter patents issued in the US and abroad

    - Even if clinically equivalent to amisulpride, LB-102 would be one of the most effective antipsychotics on the US market with IP until at least 2037 and potential to yield $1 billion in annual sales based on ex-US market data*

- First-in-class team of executives, board members, and advisors with extensive experience in drug development in the psychiatric arena

* Based on a 2% market share of 65 million antipsychotic Rx per year in US (IMS, 2019 data) at an average price of $2,000 per month

MANAGEMENT TEAM

Zachary Prensky, Chief Executive Officer & Co-Founder

- Managed family office from 1997-2015
- Portfolio responsibilities included oversight of all biotechnology investments

Anna Eramo, M.D., Chief Medical Officer

- Former Clinical and Medical Affairs head at Lundbeck
- Has 18 years of global CNS experience; oversaw US development of brexpiprazole
- Trained clinical psychiatrist

Andrew Vaino, Ph.D., Chief Science Officer

- Chemistry PhD from Queen's University with two decades experience in biotech
- MBA from UC Irvine
- Inventor of two molecules studied clinically

Marc Panoff, Chief Financial Officer

- Previously CFO of Retrophin - raised $150 million in equity and debt financings and uplisted company to Nasdaq Global Market
- Previously CFO of Neurologix and Nephros

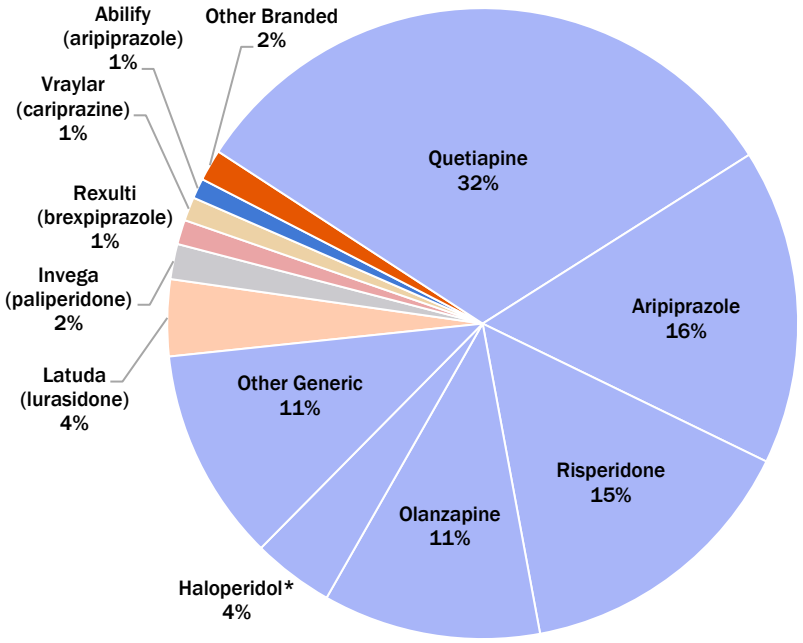
SCHIZOPHRENIA

- Schizophrenia (SCZ) is a chronic and debilitating disease affecting approximately 1% of the US population[1]
  - 100,000 new SCZ patients diagnosed per year[2]
  - SCZ patients have profoundly diminished quality of life
    - Fewer than 20% hold full-time employment;[3] increased odds of arrest[1]
  - Life expectancy of SCZ patients is reduced by 10-20 years compared to the general population[4]
    - Approximately 5% SCZ patients die of suicide[5]
  - Disease defined by three major groups of symptoms
    - Positive symptoms: delusions, hallucinations, agitation
    - Negative symptoms: lack of social engagement, depression
    - Cognitive symptoms: memory deficits, impaired executive functions

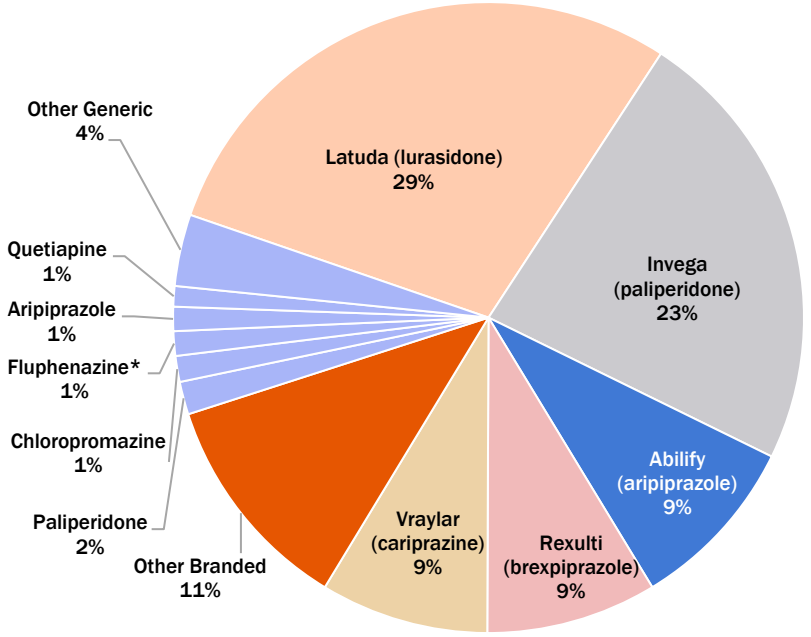
1 About Schizophrenia - Schizophrenia & Psychosis Action Alliance (sczaction.org)
2 Schizophrenia Symptoms, Patterns and Statistics and Patterns (mentalhelp.net)
3 The Atlantic, "Job Hunting with Schizophrenia", Maria Hengeveld, July 28, 2015
4 Moradi et al. 2018
5 Palmer et al. 2005

US ANTIPSYCHOTIC MARKET LANDSCAPE(1)

US Antipsychotic Market: ~67mm Retail TRx



US Antipsychotic Market: ~$12bn Sales



Represents generic TRx / Sales

* Indicates typical (first-generation) product

- Branded antipsychotic drugs generate ~$11 billion in sales annually in the US
- Despite limited efficacy, and a crowded generic market, new branded antipsychotics such as Latuda, Vraylar, and Rexulti are approaching or have achieved > $1 billion each in annual sales in the US

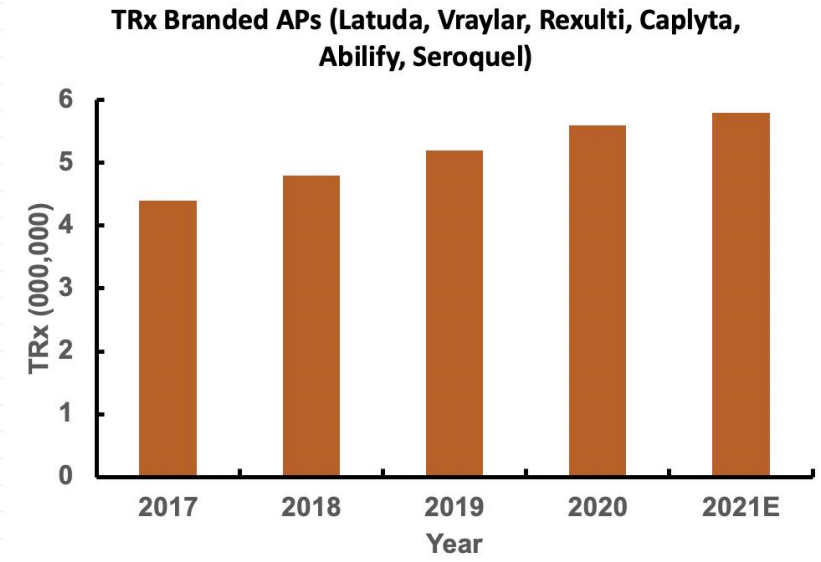
Notes: (1) Source: IMS 2019 data including all dosage forms

SCHIZOPHRENIA – UNMET MEDICAL NEED

- Despite 20+ FDA approved drugs, SCZ patients don't get adequate help
  - An estimated 50% of patients with SCZ do not take their prescribed medications as directed[1]
  - Up to 75% of SCZ patients cycle through multiple drugs within 18 months, with up to 60% failing to find an effective therapy[2]

Standard of care treatments do not adequately treat a heterogeneous patient population; alternative novel treatments are badly needed

Branded Rx growing



Phase 2 data price catalyst[3]

Share Price Pre/Post P2 SCZ Data

Company	Phase 2 Announcement	PANNS Δ From BL	Share Price Increase	Mkt Cap Increase ($B)
KRTX	11/18/19	-17.4	5.5x	2
CERE	6/29/21	-19.5*	2.4x	2.2

* 30 mg QD

1 About Schizophrenia - Schizophrenia & Psychosis Action Alliance (sczaction.org)

2 Lieberman JA, et al. Effectiveness of antipsychotic drugs in patients with chronic schizophrenia. *N Engl J Med.* 2005;**353**:1209–1223.

3 Shows percentage change of closing share price and market capitalization for two companies upon annoucement of successful Phase 2 clinical studies for schizophrenia during 2019-2021. Source: NASDAQ.

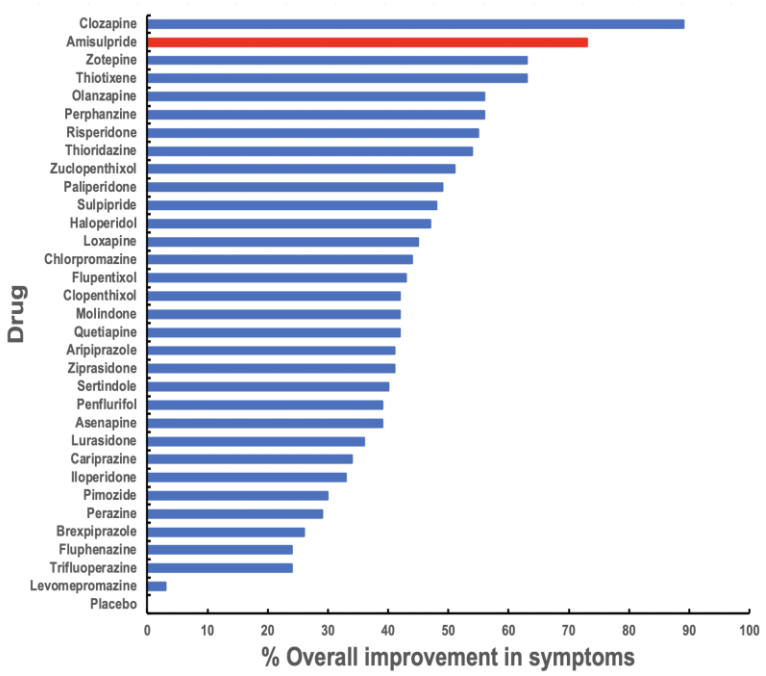
AMISULPRIDE BACKGROUND

- Amisulpride is a benzamide indicated for the treatment of schizophrenia in Europe since 1986
    - Patented and developed by Synthélabo (acquired by Sanofi)
    - Selective D_2 (K_i = 2.8 nM)/D_3 (K_i = 3.2 nM) and $5HT_7$ (K_i = 31 nM) antagonist
    - In July 2000 Sanofi announced it would discontinue development of amisulpride in the US based on IP
- Amisulpride has generated over 2.5 million prescriptions annually for the past three years in Europe
- 35 years of clinical use demonstrates an excellent efficacy/safety profile

AMISULPRIDE COMPARATIVE EFFICACY/SAFETY

Meta-Analysis of 32 Schizophrenia (SCZ) Drugs[1] (n = 53,500)

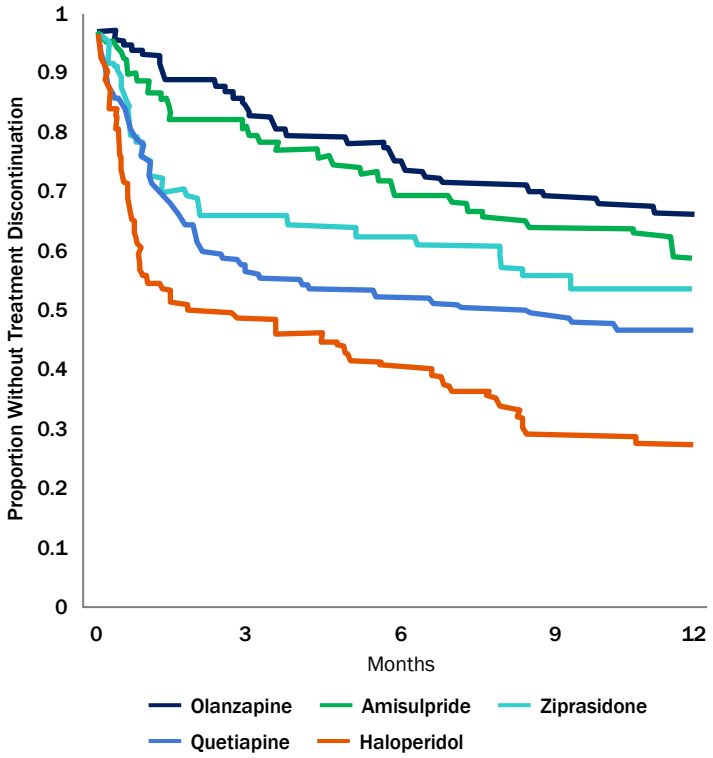
Antipsychotic Efficacy



Amisulpride is one of the most effective antipsychotics in the world

EUFEST Study[2] (Clinical Trial of 5 SCZ Drugs in First Episode) (n = 498)

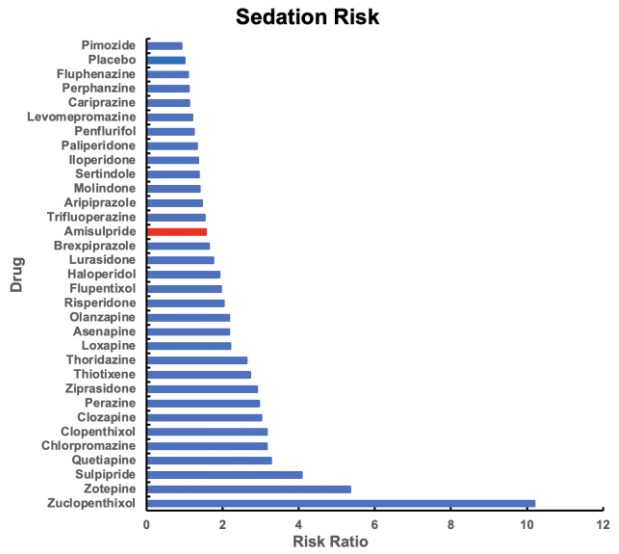
All-Cause Discontinuation

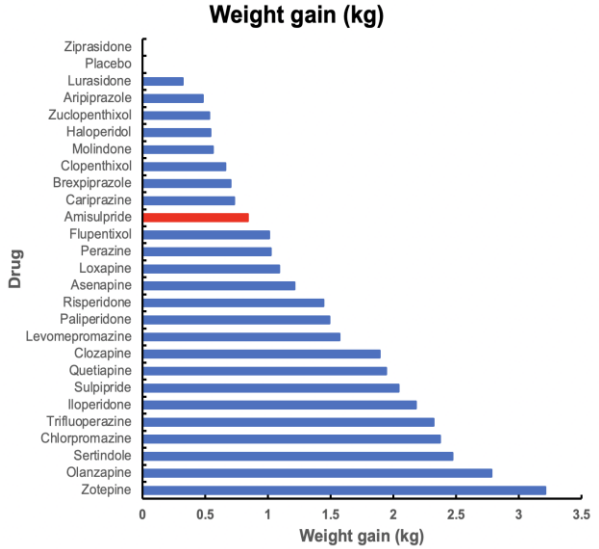


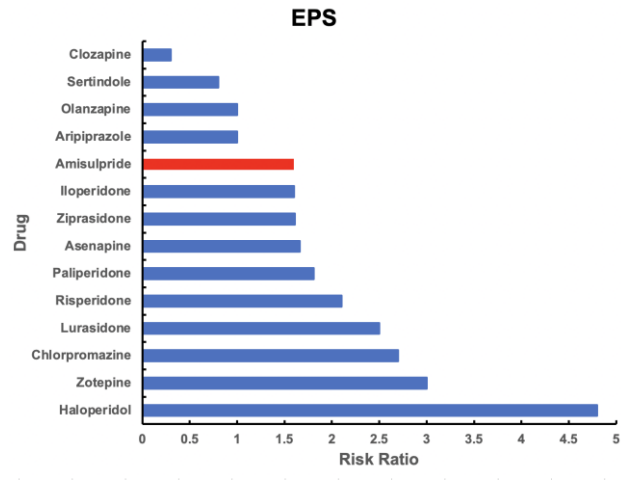
Amisulpride is one of the best tolerated antipsychotics

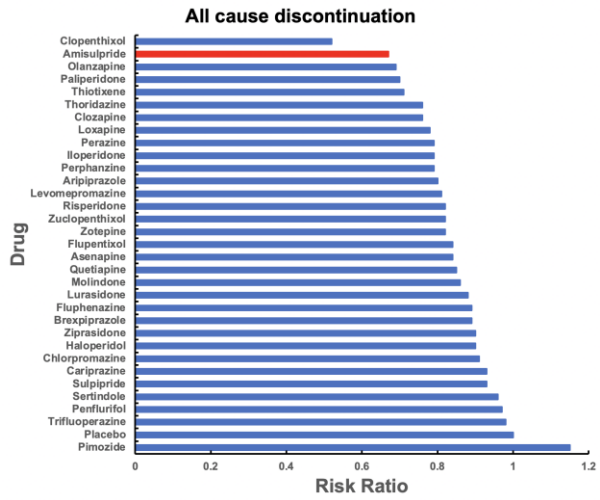
Notes: (1) Source: *Lancet*, **2019**, *394*, 939-951; (2) Source: *Lancet*, **2008**, *371*, 1085-1097

AMISULPRIDE COMPARATIVE SAFETY









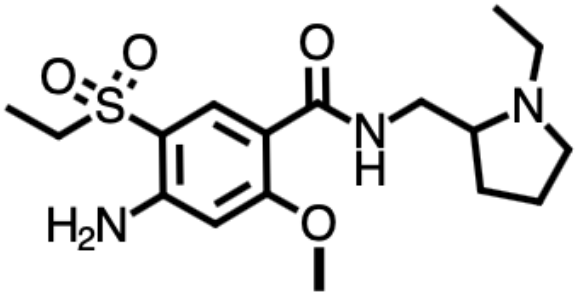
- All cause discontinuation combines efficacy and tolerability. When reported separately, more patients dropped out due to inefficacy (40%) than due to adverse events (20%)

* Lancet, 2019, 394, 939-951

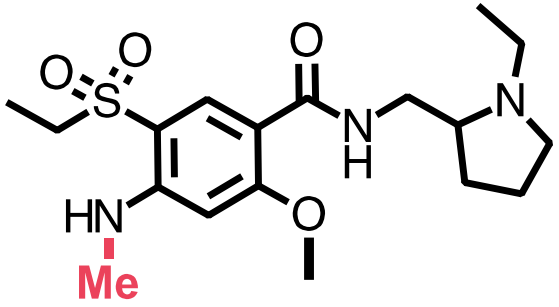
LB-102 OVERVIEW

LB-102 is a methylated version of amisulpride

Amisulpride (1983)



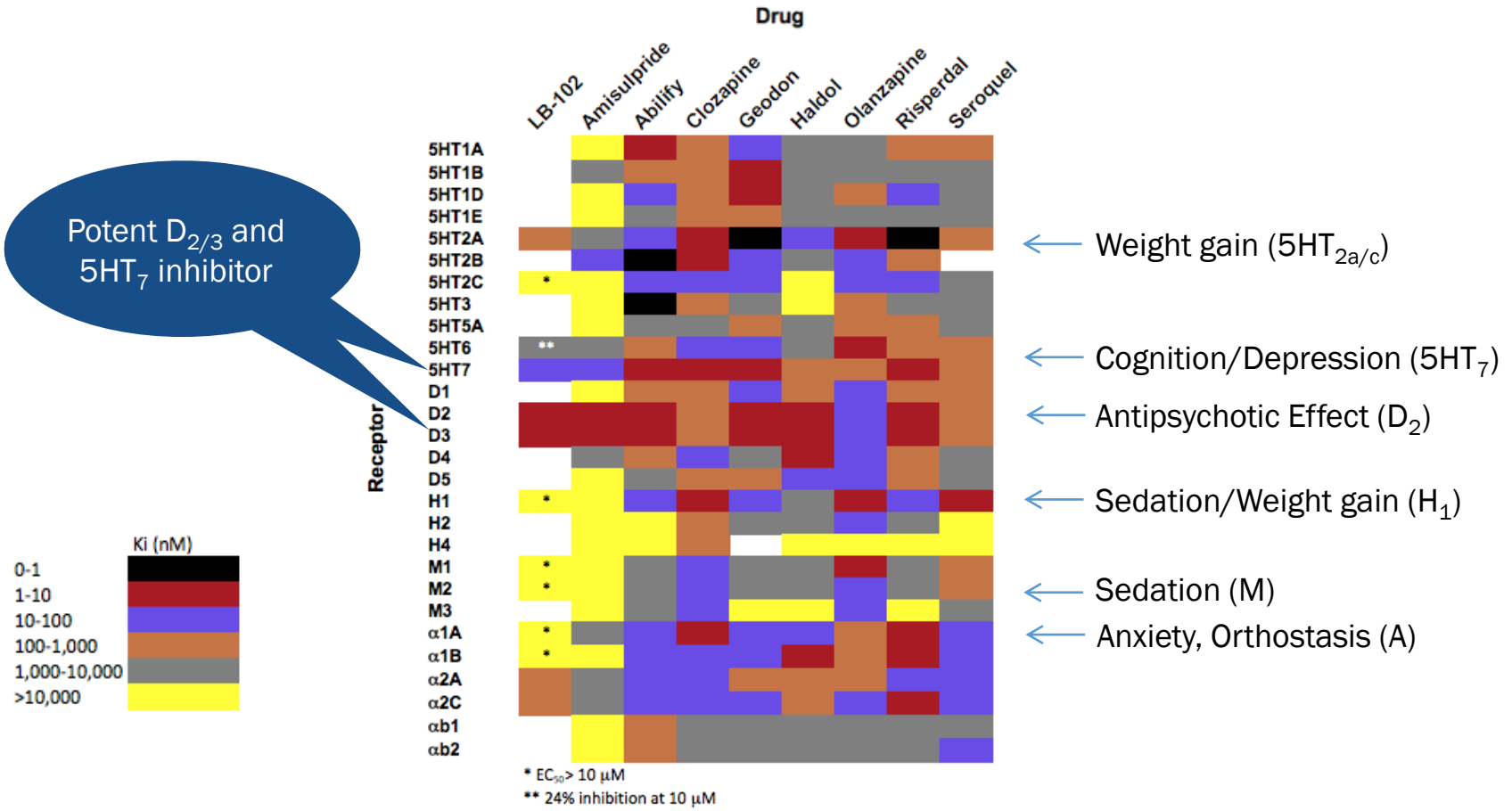
LB-102 (2016)



- Novel chemical structure with chemical properties designed to improve amisulpride's efficacy and safety
- Safe and well-tolerated in two (n = 80) Phase 1 clinical studies
- More than 20 issued patents worldwide including composition of matter covering LB-102 extending to at least 2037
- CNS receptor binding profile similar to amisulpride: high selectivity for $D_{2/3}$ and $5HT_7$
- LB-102 same as/better than amisulpride in preclinical animal models of SCZ

LB-102 AND AMISULPRIDE RECEPTOR SPECIFICITY

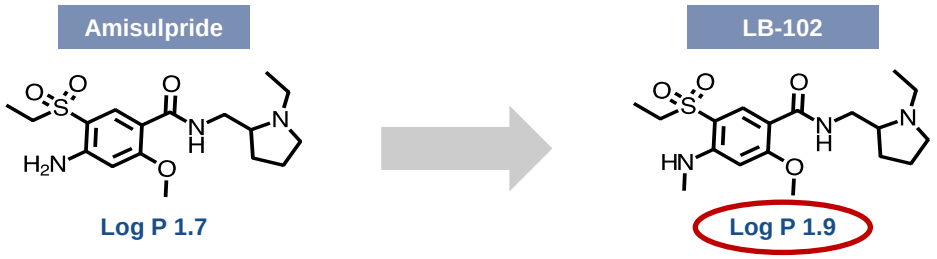
LB-102 is a selective D_2/D_3 /$5HT_7$ antagonist with minimal off-target activity



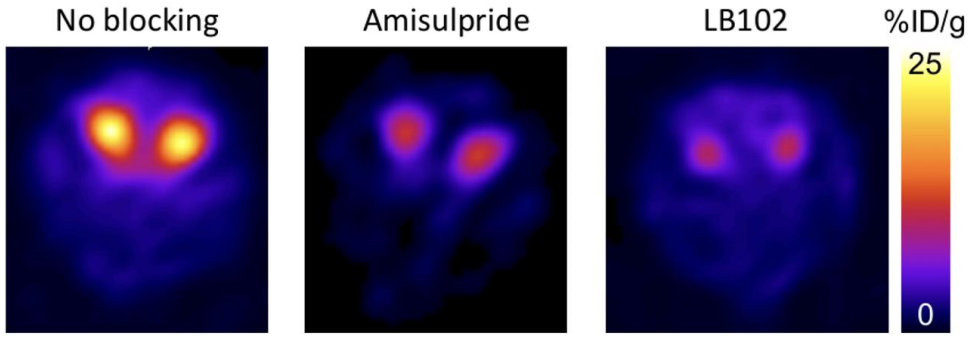
Notes: Ki data from: *The Neuroscientist*, **2000**, 6, 252-26245rf

LB-102: ENHANCING AMISULPRIDE'S PRODUCT PROFILE

- Of 30 psychiatric medications tested amisulpride was least able to passively diffuse across model BBB[(1)]
- Improving BBB permeability could improve efficacy/decrease adverse events
- Methylation has been shown to improve membrane permeability without changing receptor binding activity, for example desipramine to imipramine and nortriptyline to amitriptyline



- In a PET study, using ^{11}C raclopride, directly measuring dopamine RO in mice the same dose of LB-102 showed LB-102 bound $D_{2/3}$ receptors ~2X as strongly as amisulpride (K_is are similar)

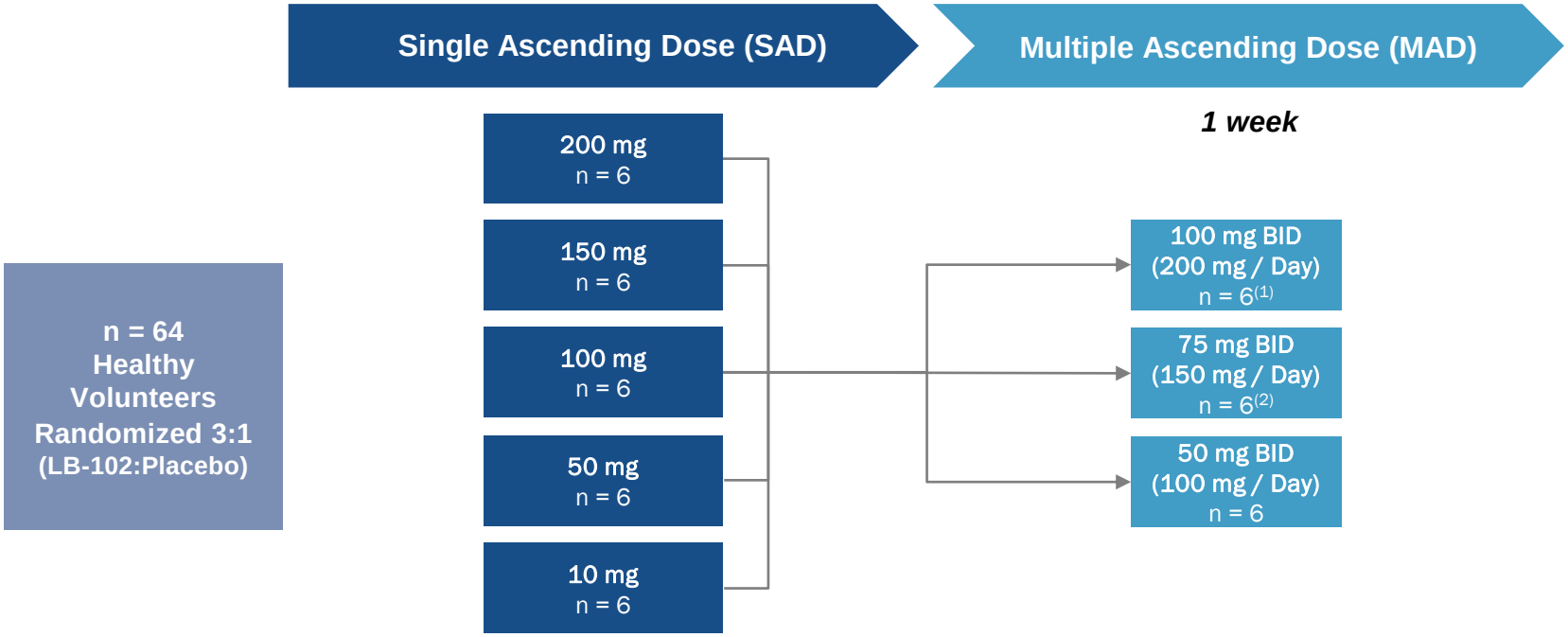


PET scans taken 140 min after dosing either 100 mg/kg amisulpride or LB-102

Notes: (1) Source: *The AAPS Journal*, **2014**, *16*, 1247-1258

LB-102 PHASE 1 CLINICAL TRIAL OVERVIEW

- **Dosing:** 5 single ascending dose (SAD) cohorts/3 multiple ascending dose (MAD, 1 week, BID dosing) cohorts
- **Endpoints:** Safety and pharmacokinetics
- **Single Site:** Medpace in Cincinnati, OH

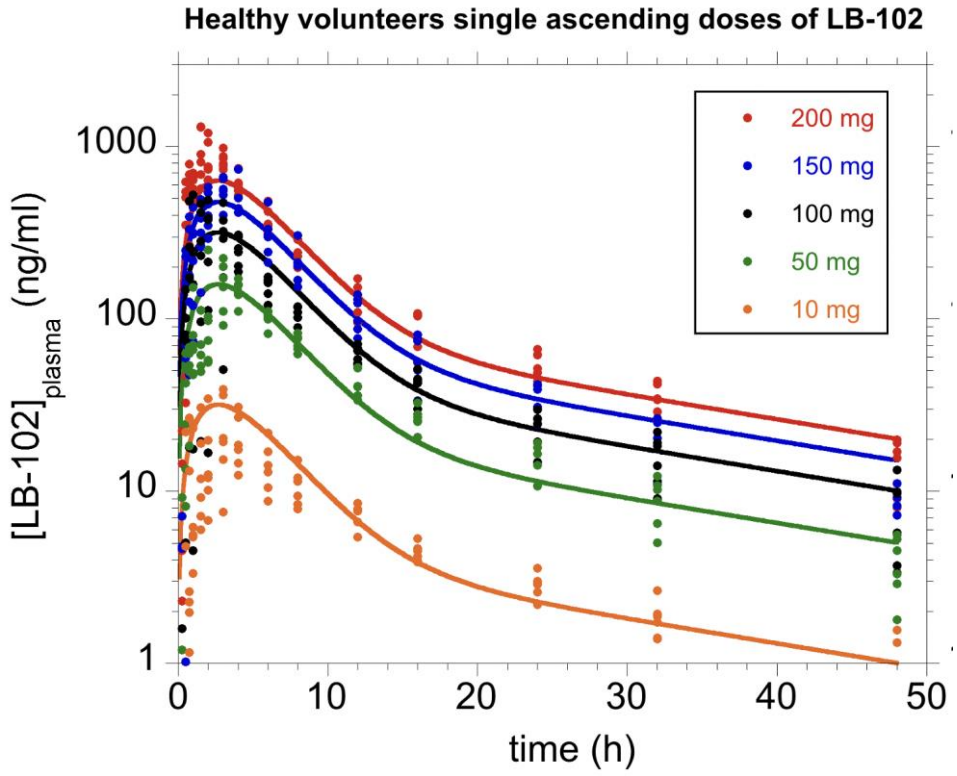


Notes: (1) Did not complete as pre-specified number of adverse events was reached; (2) n = 7 completed, one patient dropped out due to adverse events

LB-102 PHASE 1 PHARMACOKINETICS (SAD)

LB-102 exhibits favorable PK properties, with a half-life of 12+ hours and Tmax of 2-3 hours

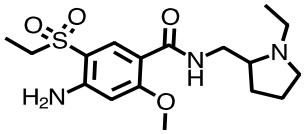
Dose LB-102 (mg)	Cmax (ng/mL)	AUCinf (h*ng/mL)	Tmax (h)	$T_{1/2}$(h)
10	24	253	3	13.7
50	176	1600	3	12.3
100	349	2823	2.8	14.7
150	596.5	4650	3.2	12.6
200	976	7001	2	12.8



PLASMA EXPOSURE OF LB-102 > AMISULPRIDE

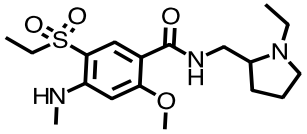
Rosenzweig[1] reported PK data on 18 healthy volunteers exposed to a single dose 50 mg amisulpride

Amisulpride



MW = 369.5
LogP = 1.7

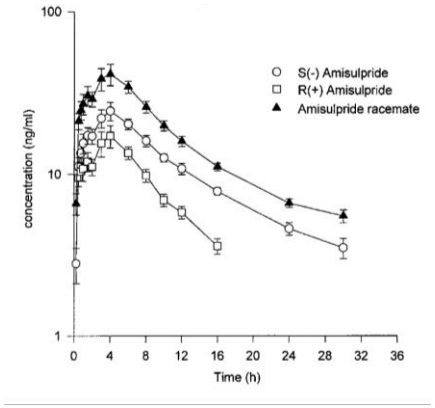
LB-102



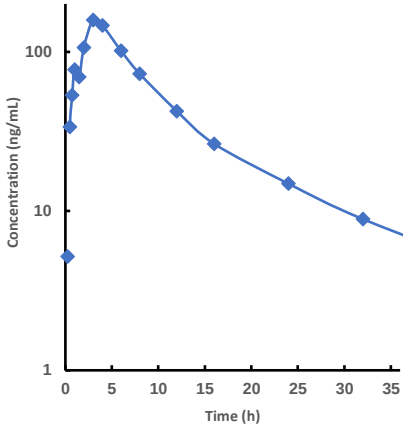
MW = 383.5
LogP = 1.9

Plasma Concentration of 50mg LB-102 vs. 50mg Amisulpride

50 mg Amisulpride



50 mg LB-102



Observed LB-102 plasma exposure is ~ 2.5x that of amisulpride[2]

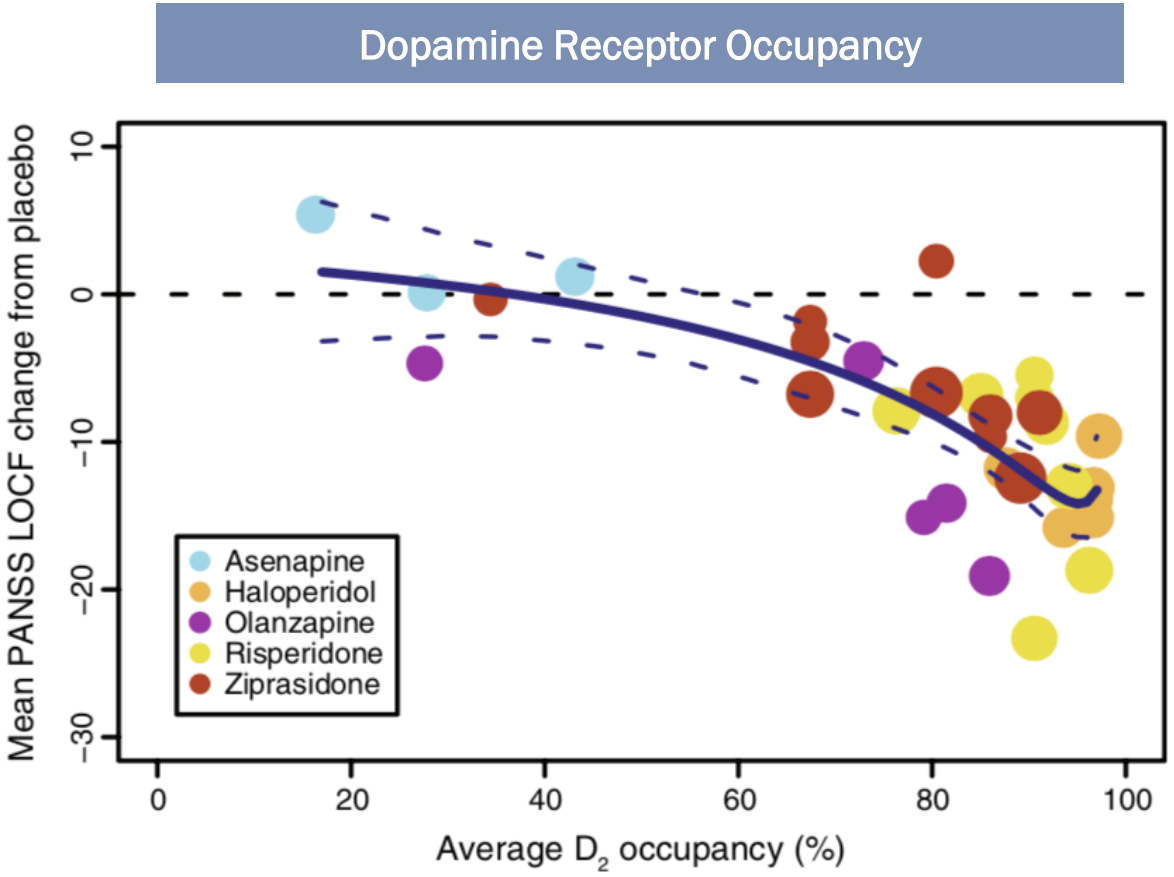
Notes: (1) Source: *Hum. Psychopharmacol. Clin. Exp.*, **2002**, *17*, 1-17; (2) Source: *Drugs*, **2001**, *61*, 2123-2150

LB-102 PHASE 1 ADVERSE EVENTS

	Single ascending dose						Multiple ascending dose		
Adverse event	**Placebo**	**10 mg**	**50 mg**	**100 mg**	**150 mg**	**200 mg**	**50 mg BID**	**75 mg BID**	**100 mg BID**
n	**16**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**
Elevated prolactin		2	3	1	1	1	2	2	1
Diarrhea			1						
Upper respiratory infection			1	1					
Abdominal pain	1	1		1					
Nausea						1		1	1
Urticaria				1					
Acute dystonia						1		1	2
QT prolongation						1			
Insomnia						1		1	
Gastroesophageal reflux						1			
Headache	1					1			
Oropharyngeal pain						1			
Heart palpitations						1			
Vomiting									1
Dry mouth									1
Somnolence								1	1
Dizziness								1	
Migraine								1	
Back pain	1							1	
Bug bite	1								
Total AEs	4	3	5	4	1	9	2	9	7

- Prolactin elevation (PRL), which was reversible and unassociated with clinical consequences, was observed at all doses, a consequence of dopamine receptor binding
- Dosing in 200 mg/d MAD cohort was stopped after 3 days due to two occurrences of EPS (acute dystonia)
  - EPS associated with excess $D_{2/3}$ RO, suggesting need to tamp down dose < 200 mg/d

DOPAMINE RO DIRECTLY LINKED TO IMPROVEMENTS IN SCZ PATIENTS

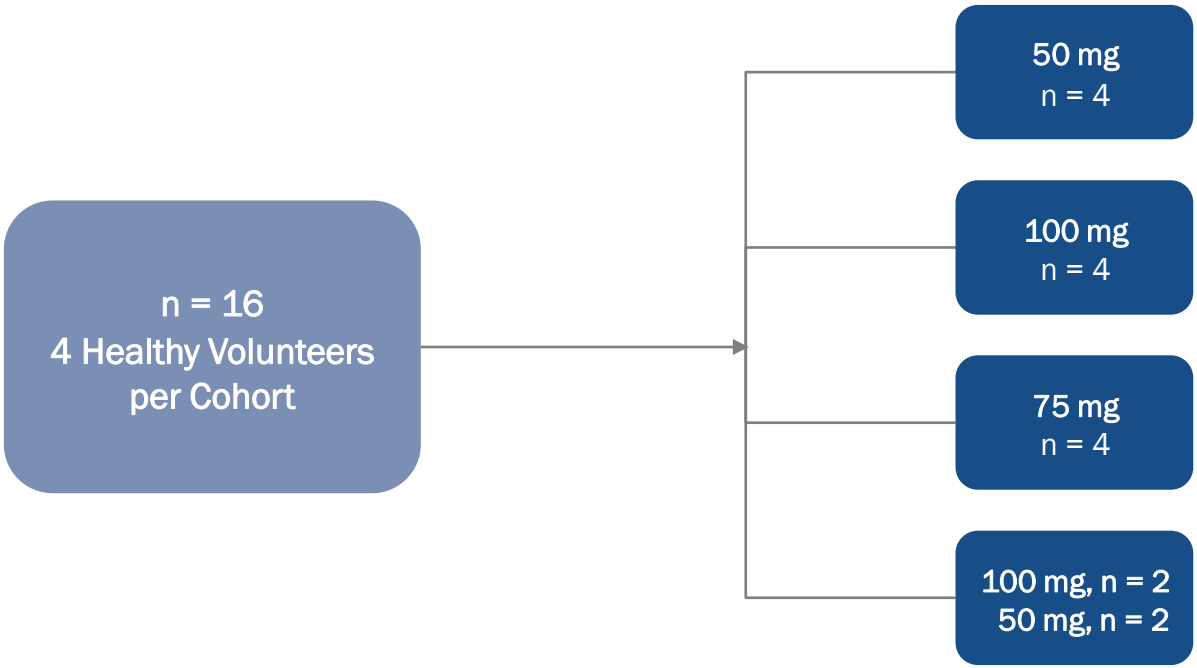


Dopamine RO a good predictor of PANSS improvement(1)

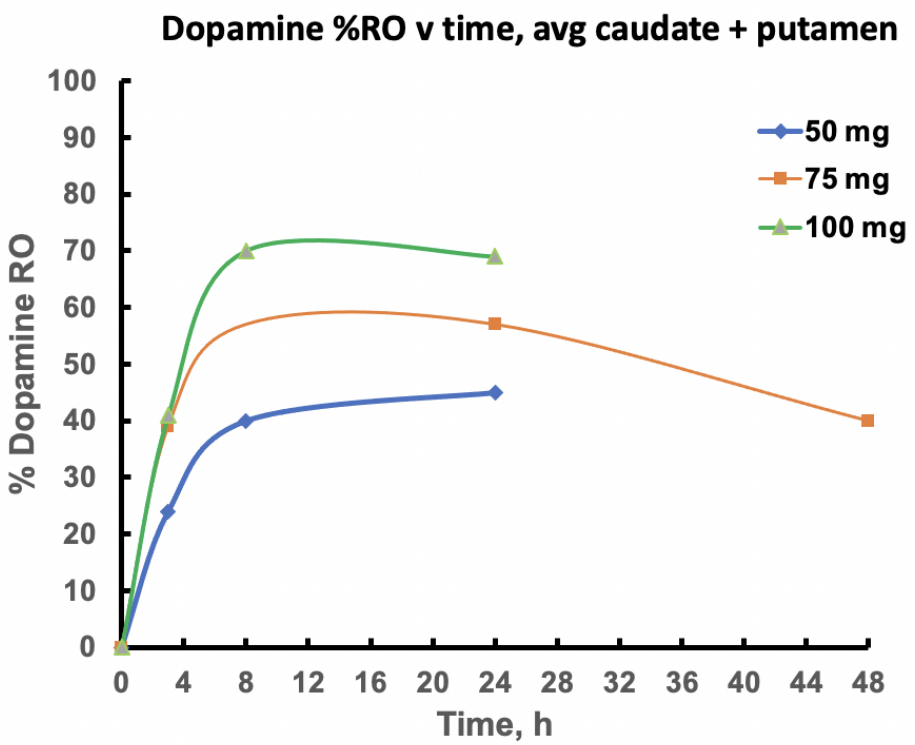
Notes: (1) Source: *The AAPS Journal*, **2011**, 13, 121-130

LB-102 PHASE 1b PET IMAGING STUDY (NCT04588129)

- **Dosing:** Adaptive design with 4 cohorts of 4 healthy volunteers each
  - Multiple PET scans per subject using ^{11}C raclopride as tracer
- **Study Objectives:** To confirm D_2/D_3 target engagement and inform Phase 2 dosing

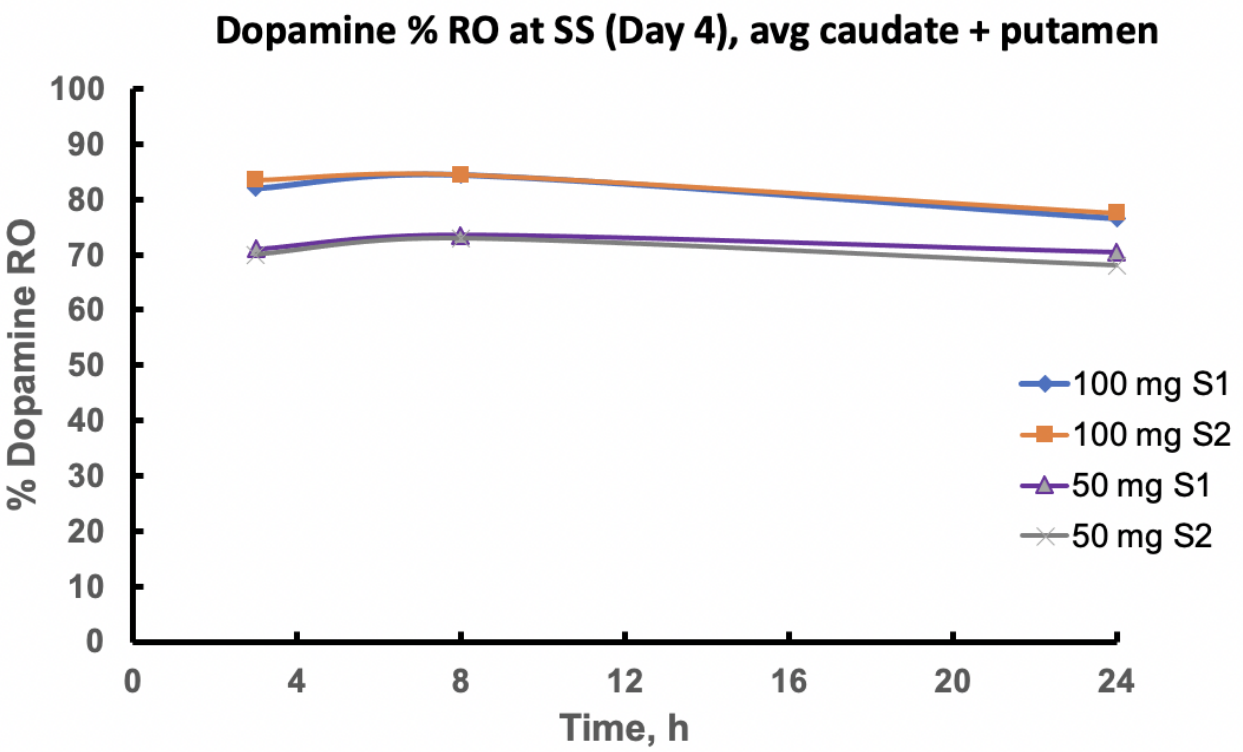


PHASE 1b - COHORTS 1 - 3, SINGLE DOSE



- Subjects in Cohorts 1 (100 mg) and 2 (50 mg) were scanned at 2.5, 7.5, and 23.5 hrs post-dose
- Subjects in Cohort 3 (75 mg) were scanned at 2.5, 23.5, and 47.5 hrs post-dose
- Desired dopamine RO between 60% and 75%
- Data suggests that LB-102 can be dosed once a day

PHASE 1b - COHORT 4, STEADY STATE, 100 MG (N=2); 50 MG (N=2)



- Subjects scanned 2.5, 7.5, and 23.5 hrs after 4 days QD dosing
  - Dopamine RO observed at 50 mg was in the desired range for an effective schizophrenia drug
  - 50 mg LB-102 afforded same dopamine RO as 400+ mg amisulpride per day

PHASE 1b - KEY TAKEAWAYS

- No reported SAEs or EPS
- Dopamine receptor occupancy in desired range at 50 mg to 100 mg dose
- Confirms hypothesis from Phase 1 study
- Planned dosing for Phase 2 study: 50 mg, 75 mg, and 100mg once per day
  - FDA guided LB-102 could be dosed up to 200 mg/d in SCZ patients
  - Therapeutic doses expected to be well within the margin of safety

LB-102 KEY DIFFERENTIATORS

- Superior efficacy than most recently launched antipsychotics and other compounds in development

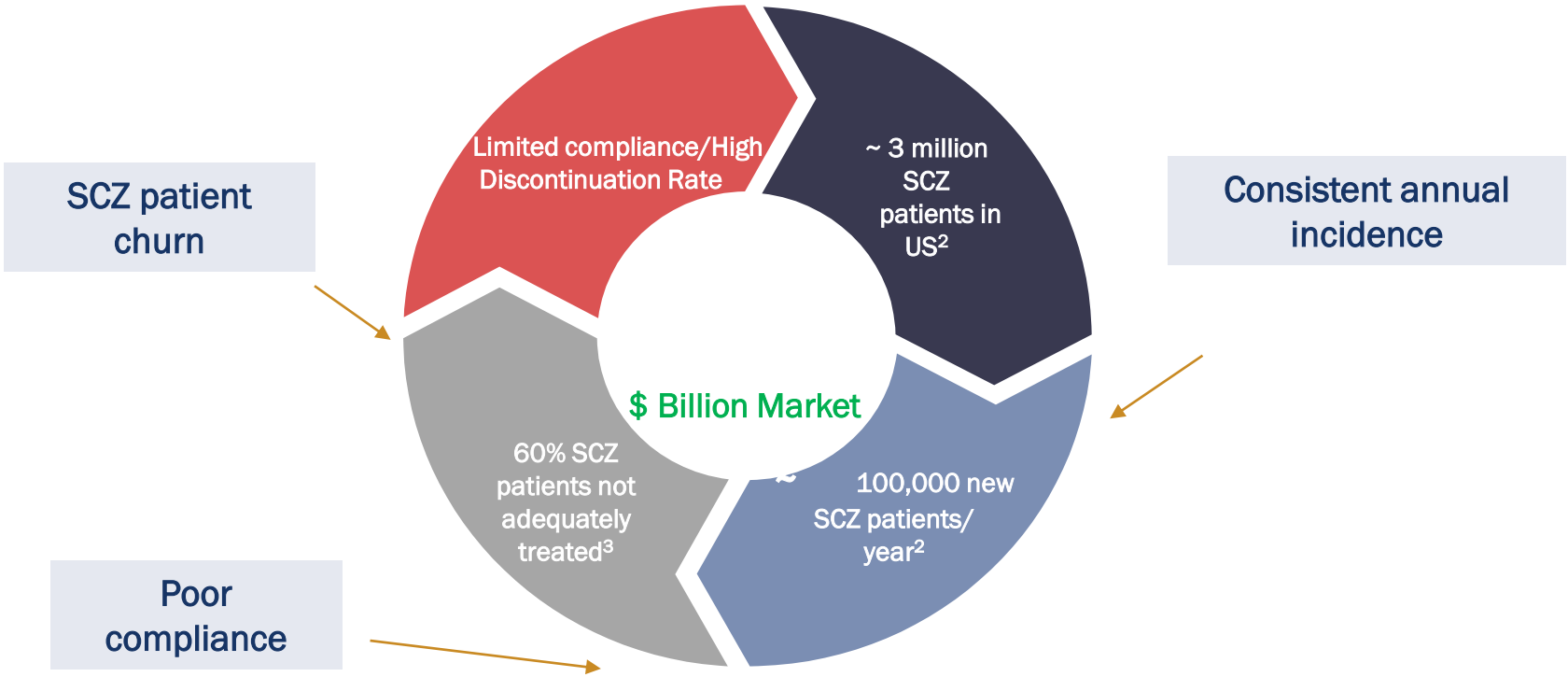
	Avg PANSS Δ from BL[1]
Caplyta	-14.1
Rexulti, 4 mg	-19.9
Vraylar, 3 mg	-22.4
Amisulpride	-28.9

- Minimal off-receptor binding (D_2, D_3, $5HT_7$) potentially leading to low incidence of AEs
- Potential use in patients with predominantly negative symptoms, bipolar depression, depression, and Alzheimer's psychosis
  - Amisulpride one of two drugs to show statistically significant improvement in negative symptoms (SANS Δ 12 points vs. placebo)[2]
  - Equivalent to Prozac in clinical study of depression[3]
  - ATLAS study showed amisulpride effective in treating psychosis in elderly[4]
- Weakly metabolized, low risk of drug/drug interactions
- LB-102's low expected therapeutic doses (50 mg LB-102 = same dopamine RO as 400 mg amisulpride) could be amenable to LAI formulation

Notes: (1) Data from FDA Medical Reviews except amisulpride data from *Neuropsychopharmacology*, **2002**, *27*, 1071 and *Current Medical Research and Opinion*, **2002**, *18*, 355; (2) Danion et al, *Am J Psychiatry*, **1999**; (3) Smeraldi, *Journal of Effective Disorders*, **1998**, *48*, 47-56; (4) Howard et al., *Lancet Psychiatry*, **2018**

LB-102 US MARKET OPPORTUNITY

- Amisulpride/LB-102 differentiated by robust efficacy for both positive and negative symptoms of the disease and a clean AE profile
  - Prescriptions in the Europe exceed 2.5 million/year[1] despite a lack of sales/marketing support for 15 years
- Branded antipsychotic drugs generate ~$11 billion in sales annually in US



LB-102 combines de-risked efficacy/safety of amisulpride with IP of a NCE

Notes: (1) Source: IMS data including all dosage forms; (2) Schizophrenia Facts and Statistics; (3) American Psychological Association Schizophrenia Treatment Guidelines February 2004

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THANK YOU