Supernus Pharmaceuticals

Corporate Overview

March 2024

Safe Harbor Statement

This presentation and other matters discussed today or answers that may be given to questions asked include forward-looking statements within the meaning of the federal securities laws. These statements, among other things, relate to Supernus' business strategy, goals and expectations concerning its product candidates, ability to integrate the acquired portfolio into its infrastructure, future operations, prospects, plans and objectives of management. The words "anticipate", "believe", "could", "estimate", "expect", "intend", "may", "plan", "predict", "project", "will", and similar terms and phrases are used to identify forward-looking statements in this presentation. Supernus' operations involve risks and uncertainties, many of which are outside its control, including the potential impact of COVID-19, and any one of which, or a combination of which, could materially affect its results of operations and whether the forward-looking statements ultimately prove to be correct. Supernus assumes no obligation to update any forward-looking statements except as required by applicable law.

Supernus has filed with the U.S. Securities and Exchange Commission (SEC) reports and other documents required by Section 13 or 15(d) of the Securities Exchange Act of 1934, as amended. Before you purchase any Supernus securities, you should read such reports and other documents to obtain more complete information about the company's operations and business and the risks and uncertainties that it faces in implementing its business plan. You may get these documents for free by visiting EDGAR on the SEC website at http://www.sec.gov.

Proven Execution in CNS & ADHD

30+ Years of CNS Experience Including Four Products in ADHD

Supernus® Pharmaceuticals

2005 - Present

- Qelbree® ONCE-A-DAY viloxazine extended-release capsules
- GOCOVRI® (amantadine) extended release capsules 68.5 mg | 137 mg
- Oxtellar XR® (oxcarbazepine) extended-release tablets
- APOKYN® apomorphine hydrochloride injection
- Trokendi XR® (topiramate) extended-release capsules
- XADAGO® (safinamide) tablets
- MYOBLOC® rimabotulinumtoxinB Injection [5,000 Units/mL]

Pipeline

- SPN-830
- SPN-820
- SPN-817
- SPN-443
- SPN-446
- SPN-448

Shire

1997 - 2005

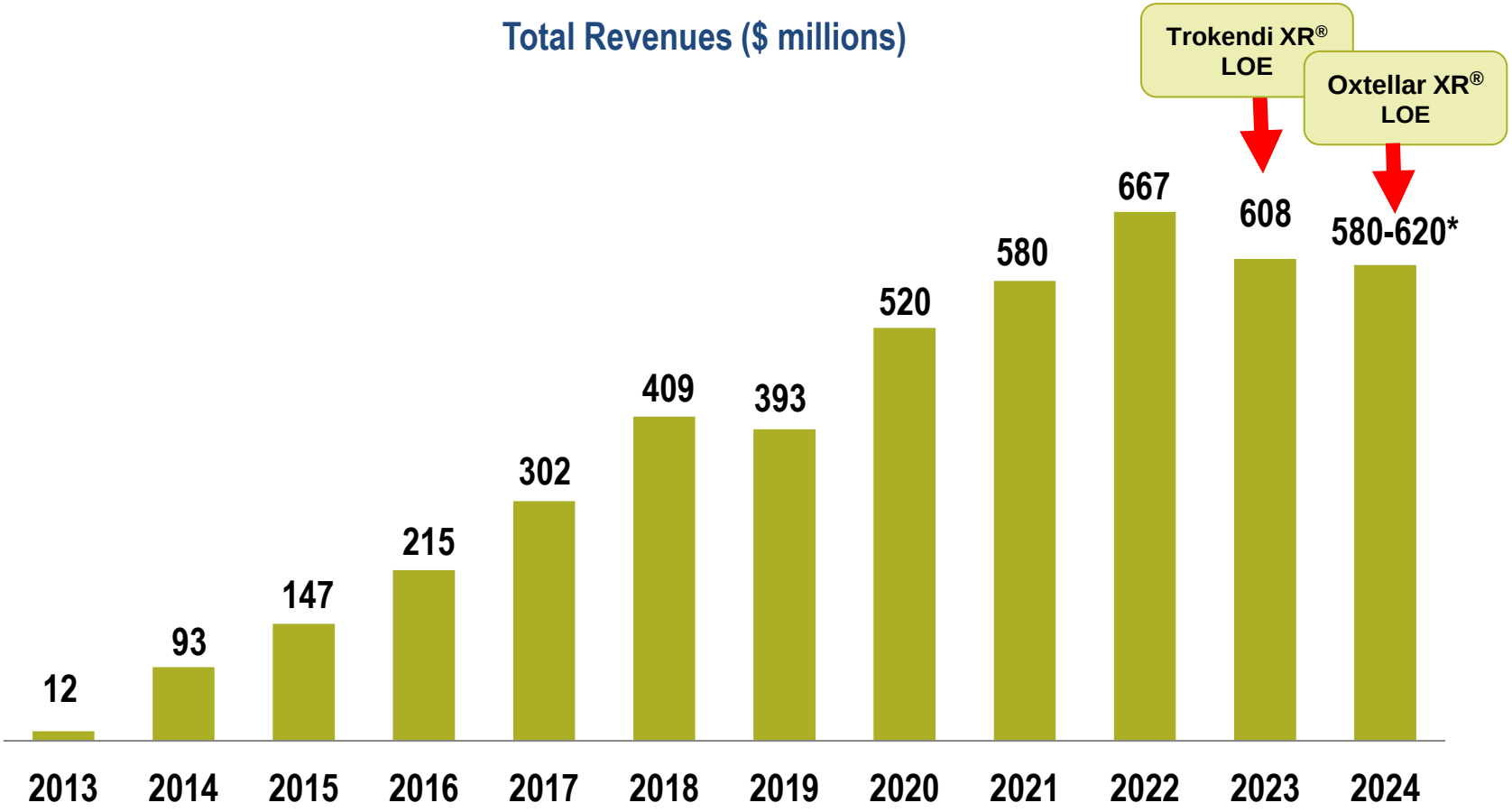
- ADDERALL XR® CII 5 mg, 10 mg, 15 mg, 20 mg, 25 mg, 30 mg CAPSULES (Mixed Salts of a Single-Entity Amphetamine Product) Dextroamphetamine Sulfate · Dextroamphetamine Saccharate · Amphetamine Aspartate Monohydrate · Amphetamine Sulfate
- intuniv® (guanfacine) Extended Release Tablets 1 • 2 • 3 • 4 mg
- Mydayis® CII (mixed salts of a single-entity amphetamine product) 12.5 / 25 / 37.5 / 50 mg extended-release capsules
- Carbatrol® carbamazepine EXTENDED-RELEASE capsules 100 mg · 200 mg · 300 mg

Prior to becoming independent in 2005, Supernus operated as Shire Laboratories, Inc., a division of Shire.
SPN-830, SPN-820, SPN-817, SPN-443, SPN-446, and SPN-448 are product candidates in various stages of development.
All trademarks are the property of their respective owners

Supernus® Pharmaceuticals

Proven Commercial Execution

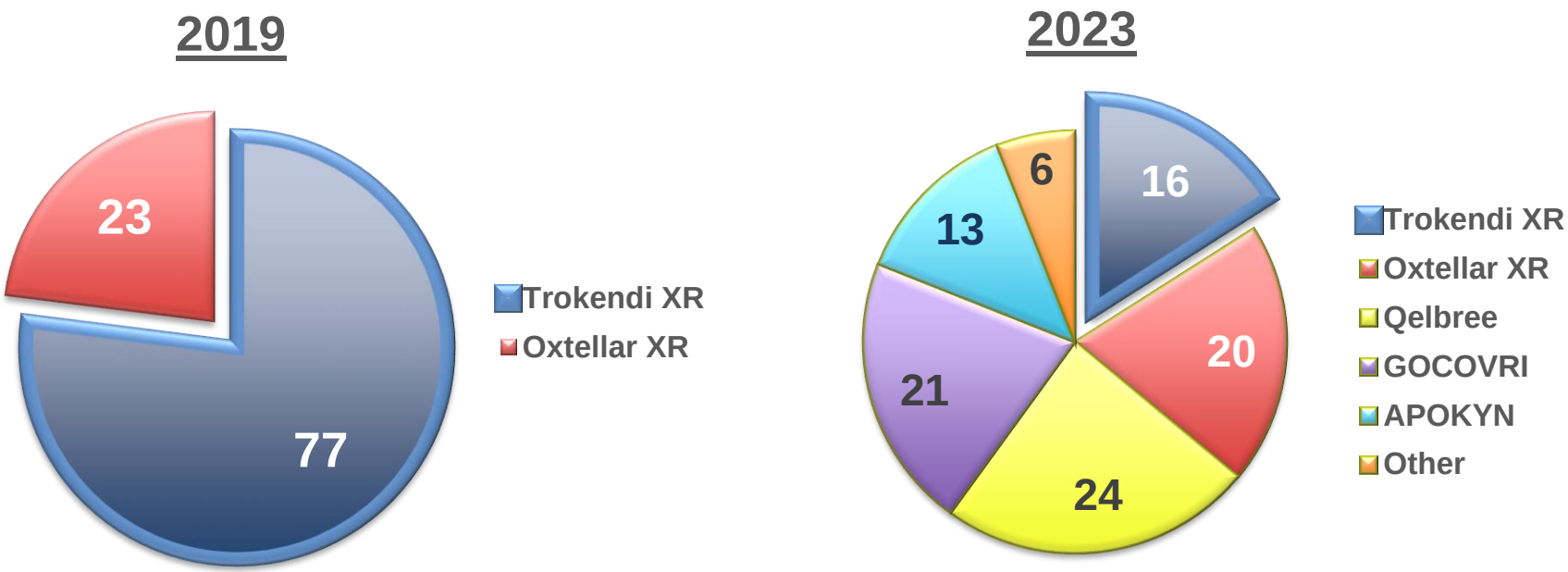
Total Portfolio Revenue Growth



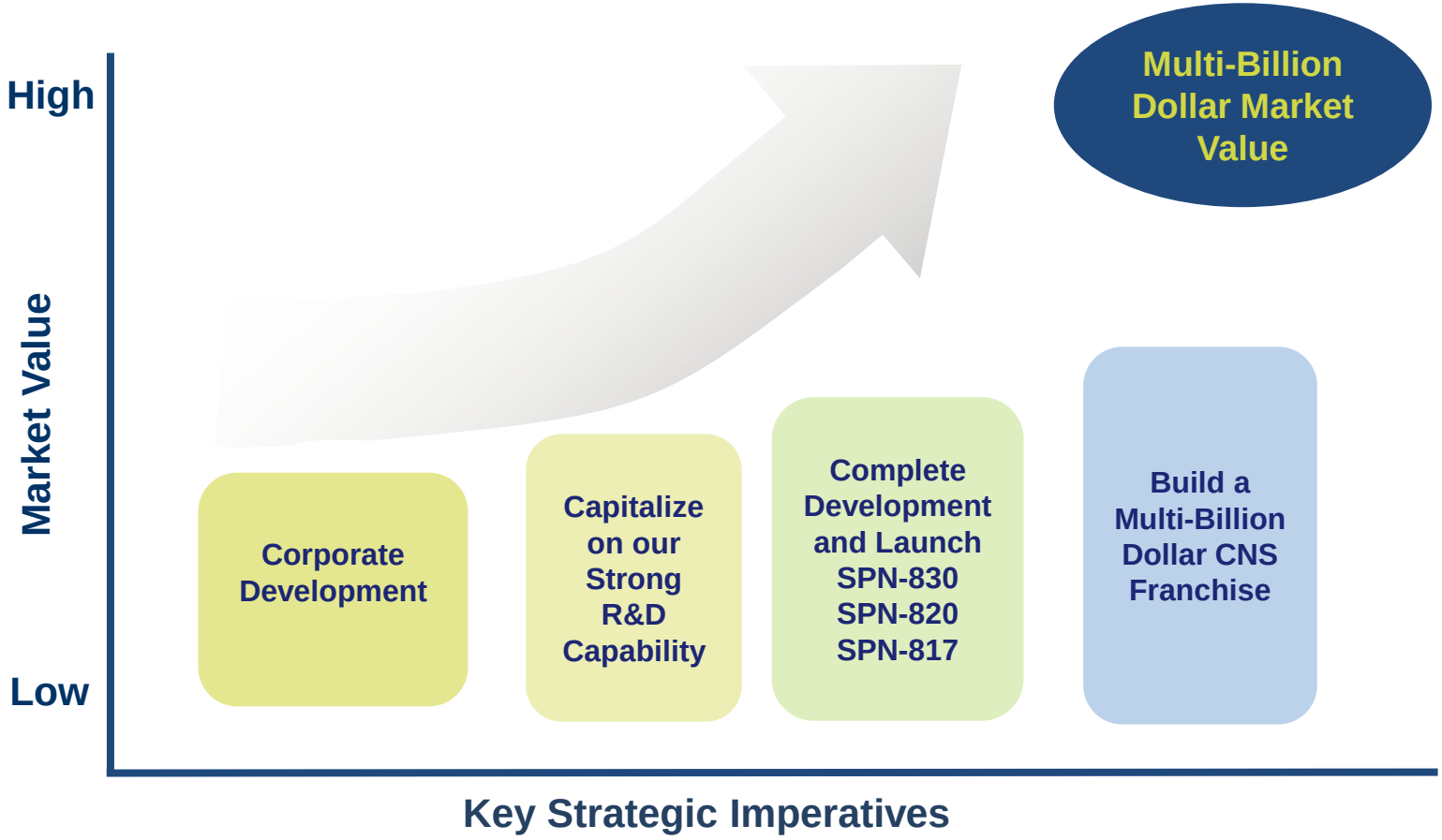
Year-end 2018 inventory build by distribution channel increased 2018 net sales by approx. $10 million and negatively impacted 2019 net sales.
*Guidance provided on February 27, 2024

Portfolio Diversification and Management of LOEs

% of Net Sales



Strategic Direction

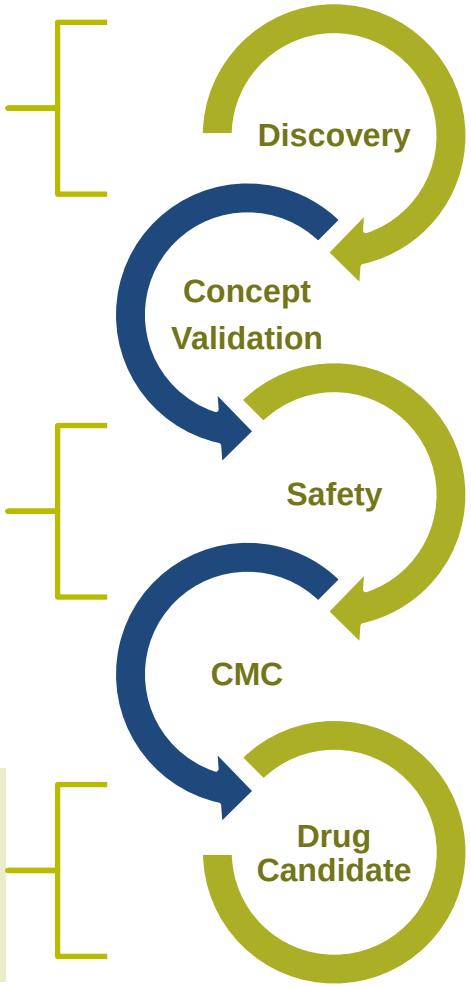


Significant Experience & Capabilities in Drug Development

Discovery Platform
Design and synthesis of new compounds based on structure, function and disease pathways

Toxicology

Validated drug candidates



In vitro, PK, preclinical proof of concept, and stability studies

In-house CMC/drug delivery expertise & GMP manufacturing

Supernus® Pharmaceuticals

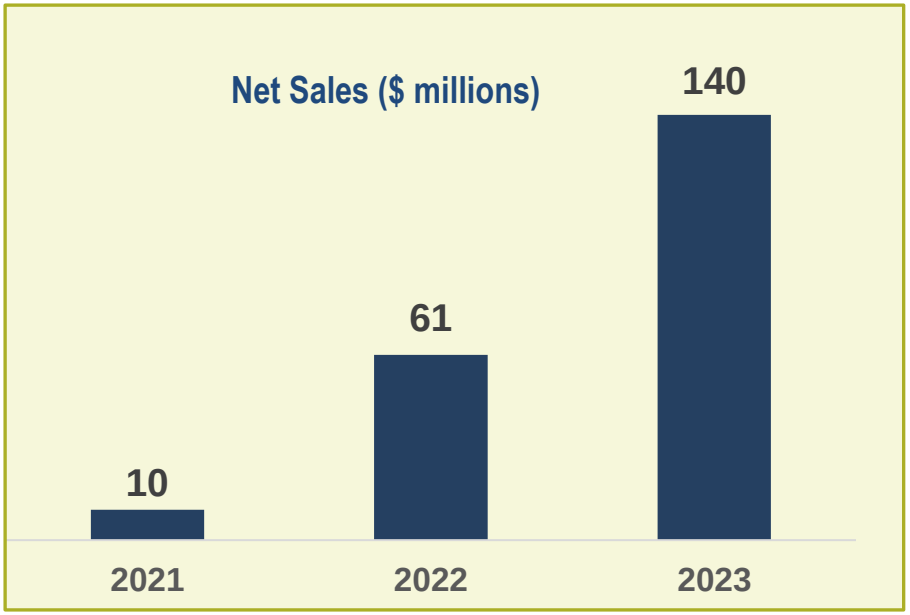
Robust CNS Pipeline to Drive Long-Term Growth

Program	Indications	Discovery	Preclinical	Phase 1	Phase 2	Phase 3	NDA	Market
SPN-830	PD							
SPN-820	Depression							
SPN-817	Epilepsy							
SPN-443	ADHD/CNS							
SPN-446	Narcolepsy							
SPN-448	CNS							

PD = Parkinson's disease

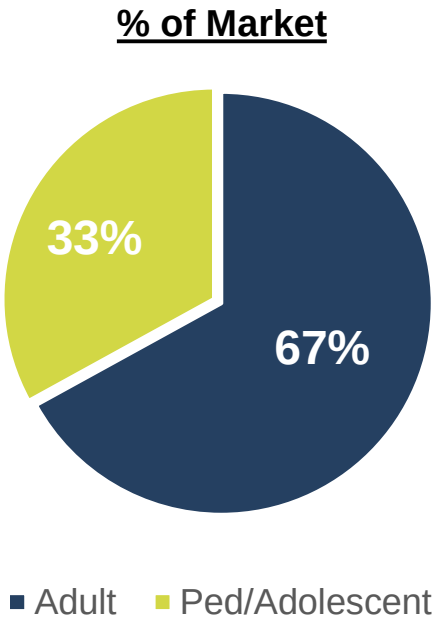
Novel Non-Stimulant ADHD Product

- Launched in May 2021 for patients 6 to 17 years of age and in May 2022 for adult patients
  - Sales force of approximately 245 sales representatives
- IP expirations from 2029-2033



ADHD Market By Patient Population

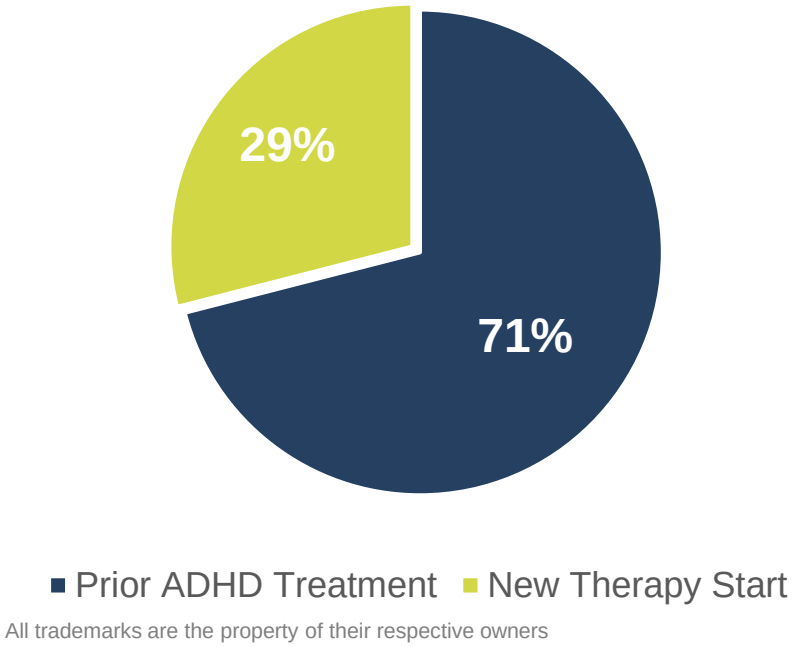
2023 Total U.S. ADHD Market - 93 Million Prescriptions



Source: IQVIA

Source of Usage

71% of Patients Were Prescribed Qelbree As Replacement to Existing Therapy or Add-on



Patients Who Switched to Qelbree Came From:

Stimulants 65%:
- Vyvanse®: 22%
- AMP ER/Adderall XR®: 15%
- MPH ER/Concerta®: 17%
- MPH IR: 6%
- AMP IR: 6%
- DEXMPH/Focalin®: 7%
- Other: 27%

Non-Stimulants 35%:
- Atomoxetine/Strattera®: 61%
- Guanfacine/Intuniv®: 35%
- Other: 4%

Branded ADHD products launched in last 5 years (as of September 2022).
Prior ADHD treatment was defined as patients who switched to Qelbree, or for whom Qelbree was an add-on to current therapy (N=55,116 prescriptions).
All trademarks are the property of their respective owners
Source: IQVIA NPA market dynamics data, 1/2022 to 12/2022.

Qelbree (viloxazine extended-release capsules) vs. Atomoxetine

Research Article, Published in CNS Drugs (July 2023)

Extended-Release Viloxazine Compared with Atomoxetine for Attention Deficit Hyperactivity Disorder

Authors: Maxwell Z Price, Richard L Price

- Independent retrospective chart review of 50 patients with ADHD in routine clinical practice
  - Supernus did not provide any support for this research
- Approximately ½ of patients were receiving psychostimulants with a suboptimal response
- Patients taking a psychostimulant were maintained on a stable dose
- Patients received up to 4 weeks of atomoxetine per required insurance prior authorization, were washed out for 5 days, and opted to switch to 4 weeks of viloxazine ER
- ADHD RS-5 and AISRS scales administered at:
  - Baseline
  - At the end of 4-week atomoxetine trial, or earlier if discontinued for AEs
  - At the end of subsequent 4-week Qelbree trial

CNS Drugs 2023 Jul 10. doi: 10.1007/s40263-023-01023-6

ADHD RS-5 = ADHD Rating Scale – 5 AISRS = Adult Investigator Symptom Rating Scale

Supernus® Pharmaceuticals

vs. Atomoxetine

Research Article, Published in CNS Drugs (July 2023)

Extended-Release Viloxazine Compared with Atomoxetine for Attention Deficit Hyperactivity Disorder

Authors: Maxwell Z Price, Richard L Price

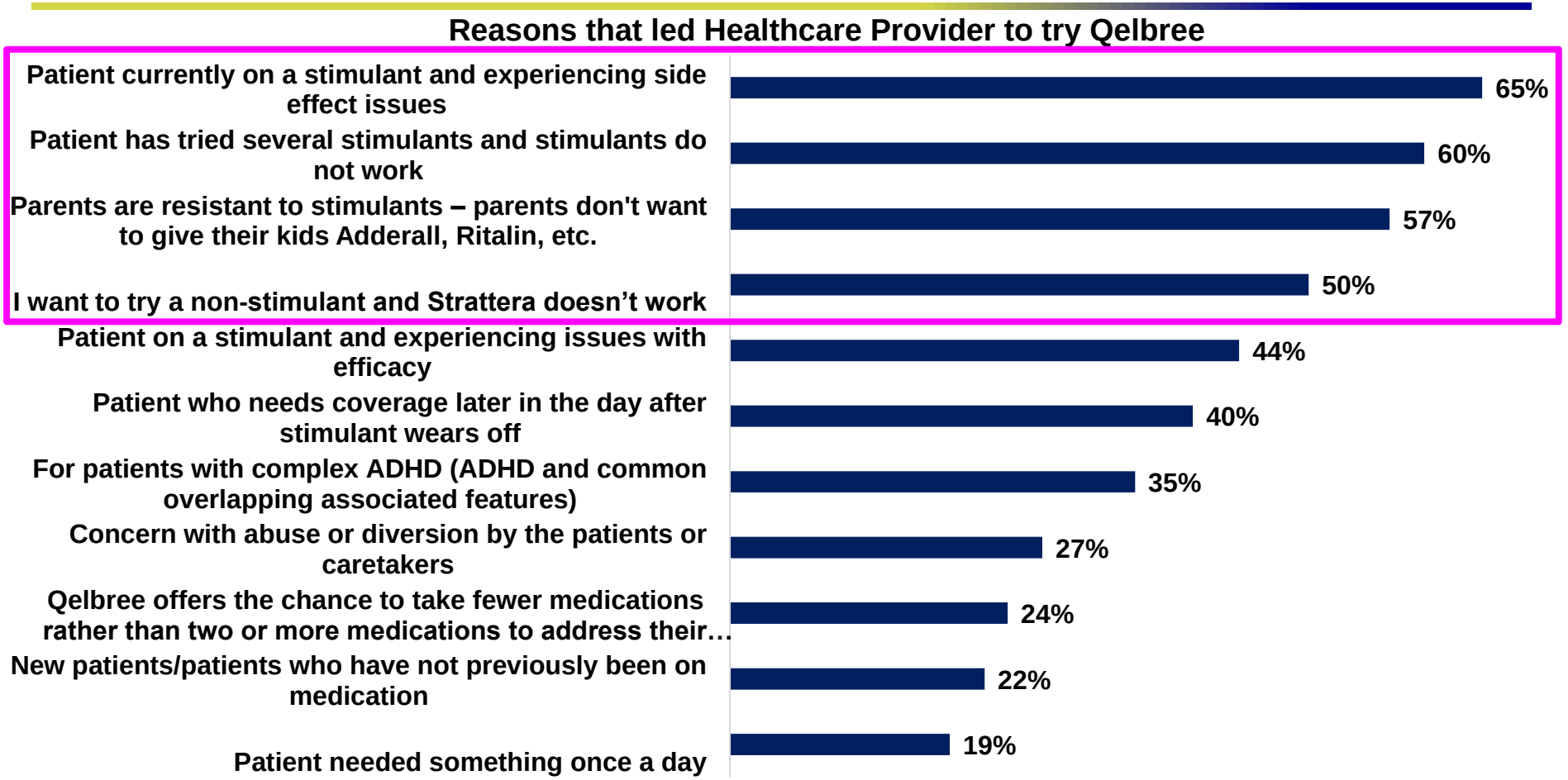
- **Significant improvements** ($p<0.00001$) were seen on Qelbree compared to atomoxetine on ADHD RS-5 and AISRS scales
- **96%** of patients preferred Qelbree over atomoxetine
- **85%** of patients receiving stimulants chose to taper adjunctive stimulant once stabilized on Qelbree
- **86%** reported positive response by 2nd week of Qelbree
- **4%** discontinued Qelbree vs 36% discontinued atomoxetine due to AEs
- Authors concluded *"Pediatric and adult ADHD patients who have experienced less than optimal response to atomoxetine demonstrate rapid improvement in inattention and in hyperactivity/impulsivity with greater tolerability on extended-release viloxazine."*

CNS Drugs 2023 Jul 10. doi: 10.1007/s40263-023-01023-6

ADHD RS-5 = ADHD Rating Scale – 5 AISRS = Adult Investigator Symptom Rating Scale

Top Reasons to Try Qelbree®

Patients Having Issues With Stimulants & Looking For an Effective Non-Stimulant



Source: Internal market research among Qelbree prescribers – n=104.
Q28. Thinking about the patients you have put on Qelbree, what medications were they on/what issues were they having that led you to try Qelbree?

Major Presence in Parkinson's Disease (PD)

1 Million U.S. PD Patients - Market Expected to Grow to $6.2B by 2026 [1]

1- Global Data Parkinson's Disease Global Drug Forecast and Market Analysis 2026.

Supernus® Pharmaceuticals

GOCOVRI®
(amantadine) extended release capsules
68.5 mg | 137 mg

A Key Growth Driver

- Strong performance in 2023
  - Net sales of $120 million, up 15% vs. last year
- Unique positioning in PD. Only product indicated to treat both dyskinesia and “off” episodes
- Indications:
  - For the treatment of dyskinesia in patients with PD receiving levodopa-based therapy, with or without concomitant dopaminergic medications
  - Adjunctive treatment to levodopa/carbidopa in patients with PD experiencing “off” episodes

Source: Company Records, Adamas Press Releases

Supernus® Pharmaceuticals

GOCOVRI®
(amantadine) extended release capsules
68.5 mg | 137 mg

Significantly Decreased Dyskinesia and OFF Time, Thereby Significantly Increasing Good ON Time

GOCOVRI achieved reductions in dyskinesia & OFF episodes without having to adjust levodopa dose

Placebo-adjusted, pooled results from pivotal trials*

Primary endpoint

↓27%
DECREASE IN DYSKINESIA

10.1-point reduction in UDysRS score

(-17.7 GOCOVRI vs. -7.6 placebo)[1][2]†

Secondary endpoints

↓36%
DECREASE IN OFF TIME

1-hour decrease

(-0.6 GOCOVRI vs. 0.4 placebo) [1][2]†

↑29%
INCREASE IN GOOD ON TIME

2.4-hour increase

(3.8 GOCOVRI vs.1.4 placebo) [1][2]†

(1) Elmer LW, CNS Drugs. 2018.

(2) Data on file. Adamas Pharma LLC, Emeryville, CA.

* Pooled results from 2 independent positive, pivotal, Phase 3, randomized, placebo-controlled trials (Study 1 and Study 2) in PD patients on levodopa. Study 1, a 24-week study, was conducted in 121 PD patients with dyskinesia (GOCOVRI [n = 63], placebo [n = 58]). Study 2, a 12-week study, was conducted in 75 PD patients with dyskinesia (GOCOVRI [n = 37], placebo [n = 38]).

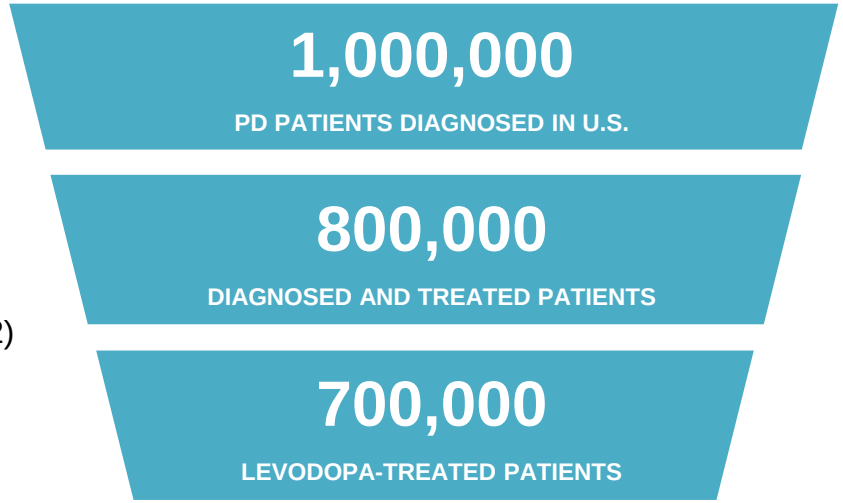
† In Study 1, GOCOVRI reduced the UDysRS total score by 15.9 points (vs 8.0 with placebo) (P = 0.0009), decreased OFF time by 0.6 hours (vs an increase of 0.3 hours with placebo) (P = 0.0171), and increased GOOD ON time by 3.6 hours (vs 0.8 hours with placebo) (P < 0.0001) from baseline. In Study 2, GOCOVRI reduced the UDysRS total score by 20.7 points (vs 6.3 with placebo) (P < 0.0001), decreased OFF time by 0.5 hours (vs an increase of 0.6 hours with placebo)

Supernus® Pharmaceuticals

GOCOVRI®
(amantadine) extended release capsules
68.5 mg | 137 mg

Significant Target Patient Population

Over 50% of people with PD experience OFF episodes, dyskinesia or both within 5 years, and up to 100% after 10 years [1][2]



GOCOVRI potential addressable U.S. patient population

400,000 to 500,000 patients[3]

(1) Kim H-J, et al., Mov Disord, 2020.

(2) Mizuno Y et al., Journal of Neural Transmission, 2018

(3) Estimated based on market research.

Supernus® Pharmaceuticals

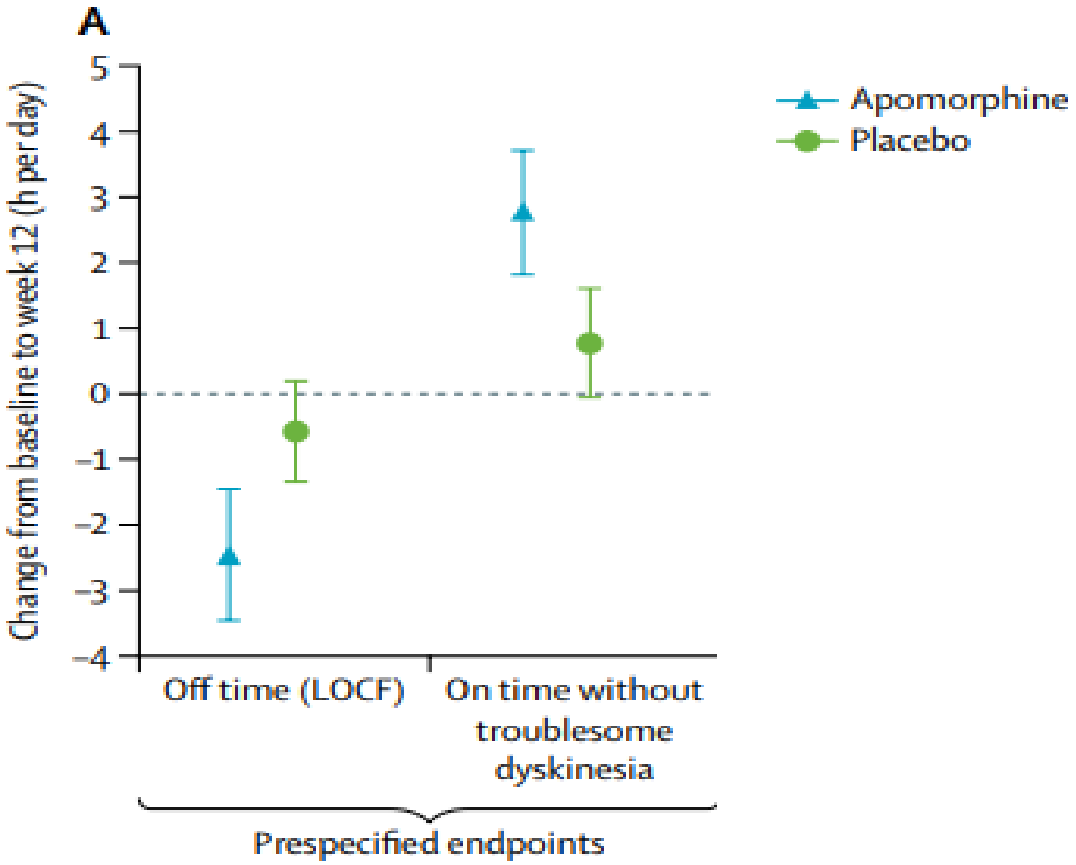
SPN-830
Novel Apomorphine Subcutaneous Injection Device

- Non-invasive dopaminergic stimulation therapy for continuous treatment of ON-OFF episodes in PD
- Currently available options
  - Gastro-intestinal surgically implanted levodopa/carbidopa infusion
  - Deep brain stimulation
- NDA resubmission accepted for review by FDA
  - PDUFA date April 5, 2024
- Projected peak sales in the range of $200-$300 million

Supernus® Pharmaceuticals

SPN-830
Novel Apomorphine Subcutaneous Injection Device

TOLEDO Phase 3 Study Results



Primary Endpoint

SPN-830 demonstrated a 2.47 hours per day reduction in OFF time compared to placebo (0.58); p= 0.0025

Regina Katzenschlager et al, The Lancet Neurology. 2018;Vol 17(9):749-759

SPN-820

Novel MOA for Treatment of Depression

- Increases mTORC1-mediated synaptic function through a first in class, unique intracellular mechanism.
- Average effect size of 0.6 with a single dose (2400 mg) over an initial 72-hour period using HAM-D6
- Rapid onset of effect, beginning within hours of first dose using HAM-D6
- Sustained effect of a single dose persists up to 72 hours in depression core symptoms
- Well-tolerated in clinical trials with no reports of dissociation or hallucinations
- Unlikely to be a controlled substance
- Phase 2b topline results 1H 2025

SPN-820 also formerly known as NV-5138

Supernus® Pharmaceuticals

SPN-820 Phase 1 Studies: Rapid Acting Antidepressant

Rapid and sustained effect

- Improvement of core symptoms of depression with a single dose of 2400 mg/day at 4 and12 hours post-dose, with sustained effect to 72 hours, the last timepoint assessed

Rapid absorption

- Rapid brain exposure and pathway activation confirmed by CSF drug levels
- Plasma and CSF exposures suggest 800 to 1600 mg/day dose range for efficacy signal

CSF levels in adults

- Consistent with the fully effective dose in animals

Rapid neuronal activation

- Statistically significant signals on EEG bands associated with increased arousal or alertness (i.e., positive mood states), consistent with rapid change in synaptic function

Supernus® Pharmaceuticals

SPN-820 Phase 1 Studies: Favorable Safety Profile

- Total of 205 subjects in Phase 1 studies
  - Single oral doses and two sequential oral doses of SPN-820 up to 3000 mg/day were safe and well tolerated
  - Maximal tolerated dose not achieved
  - Most common AEs (mild-moderate): nausea, dizziness and headache
  - No psychiatric symptoms or dissociative effects reported
  - No suicidal effects reported

Supernus® Pharmaceuticals

SPN-820: Proof of Concept in TRD Subjects

- Randomized, two-part, double-blind, placebo-controlled study of single ascending oral solution dose
- Primary endpoint: Changes from baseline to **24, 48, and 72 hours,** post-dose in the **MADRS** rating
- Additional efficacy endpoints: **HAM-D6**, Inventory of Depressive Symptomatology (30-item) and **CGI-S** ratings

Part A	Part B
Healthy Subjects	TRD Subjects
150-2400 mg	2400 mg/Placebo
N= 36 oral solution, N=12 placebo	N=16 oral solution, N=15 placebo
	Randomized 1:1

TRD = Treatment Resistant Depression

SPN-820

POC Study: Rapid Acting & Sustained Efficacy

- Efficacy with HAM-D6 shows early, large effect size, sustained to 72 hours after single dose
- MADRS did not show efficacy with single dose but showed small effect on acute symptoms

✓Early Response ✓Core Depression Symptoms ✓**More Severely Depressed at Baseline**

Scale	2h	4h	8h	12h	24h	36h	48h	72h
PRESPECIFIED ANALYSES (N=31)								
MADRS Total Score (prelim. primary @24h)					0.1		0.2	-0.1
HAM-D6	0.6	0.8	0.7	0.8	0.4	0.5	0.5	0.5
IDS-SR 30 Total Score					0.2		0.3	0.2
CGI-S Change from baseline					-0.1		0.1	0.2

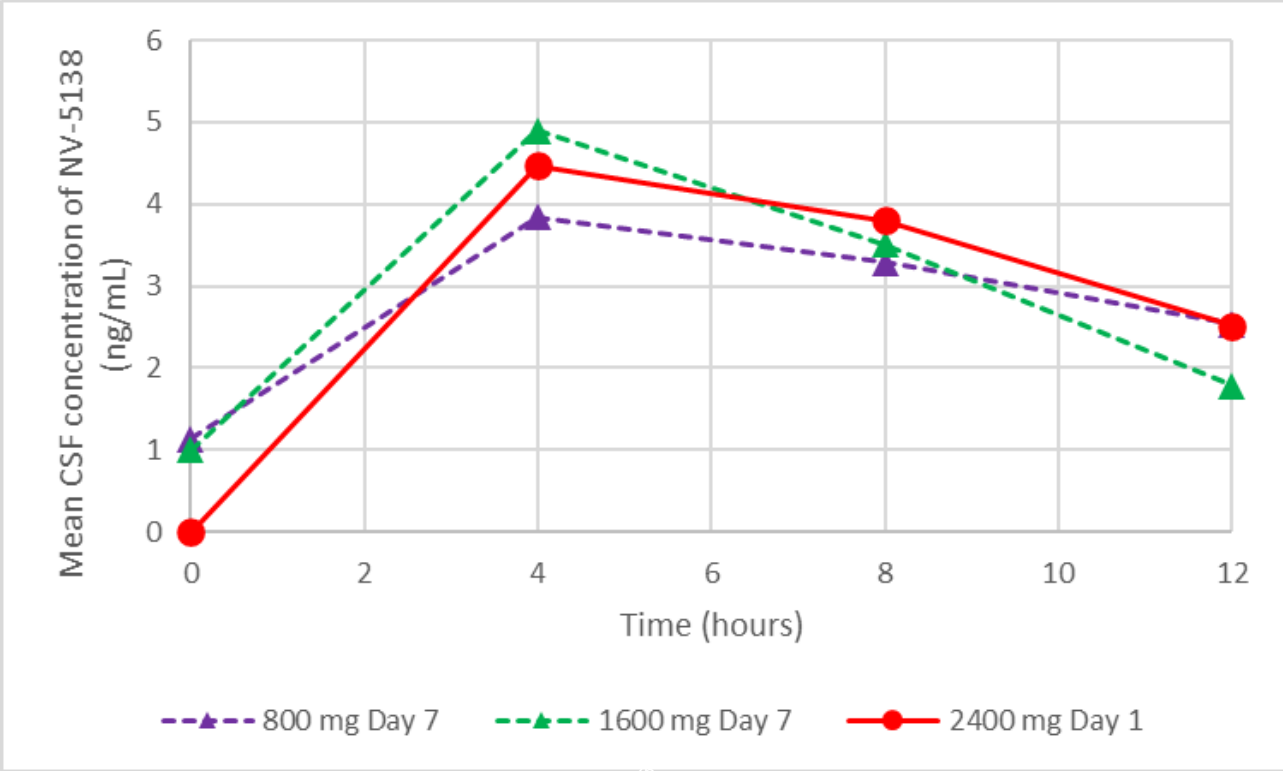
Effect sizes: ≥ 0.2 in yellow (early improvement); ≥ 0.4 in green (clinical response).

MADRS= Montgomery Asberg Depression Rating Scale; HAM-D6= Hamilton Depression Rating Scale, 6 items, IDS-SR=Inventory of Depressive Symptomatology (Self-Report); CGI-S= Clinical Global Impression - Severity

SPN-820

Phase 2 Dose Selection Based on PK

CSF concentration: Day 7 after multiple doses of 800 mg and 1600 mg once daily for 7 days (at steady state) versus single dose of 2400 mg on Day 1

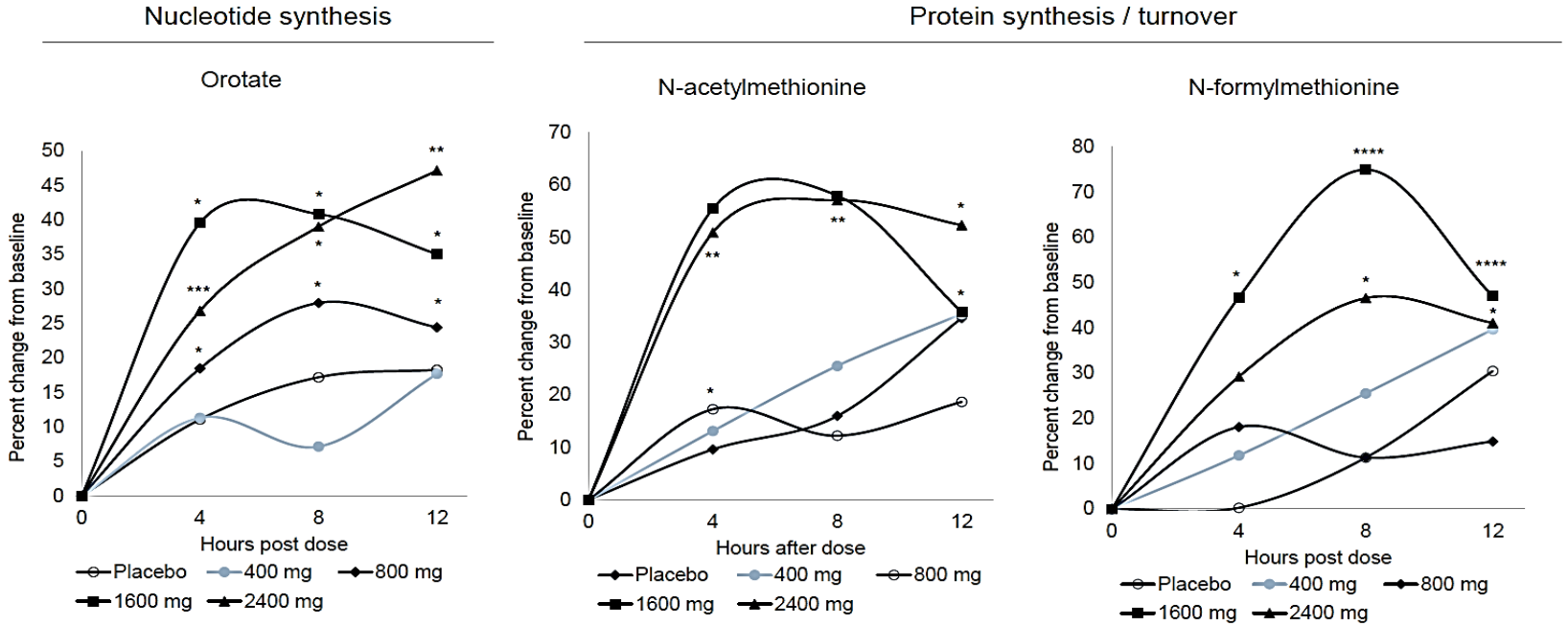


SPN-820 also formerly known as NV-5138

SPN-820

Phase 2 Dose Selection Based on Biomarkers

Biomarkers downstream of mTORC1 activation are increased in CSF at 800 and 1600 mg doses



*p,0.05; **p<0.01, ***p<0.005 for Day 1 levels vs Day 1 pre-dose (graphs include all subjects)

Confidential

SPN-820 also formerly known as NV-5138

SPN-820
Phase 2b Study in TRD

Study Design

- Multicenter, randomized, double-blind, placebo-controlled, parallel design of **adjunctive therapy**
- Flexible dose: Treatment starts at **1600 mg/day** and tapered down to **800 mg/day**
- Approximately 268 subjects to be randomized, up to 50 sites
- Duration:
  - Screening period: up to 6 weeks
  - Treatment: 5 weeks
- Topline data expected in 1H 2025

Objectives

- Primary efficacy: MADRS
- Key secondary: CGI-S
- HAM-D6
- Onset of effect
- Depression symptoms response and remission
- Individual disability
- Anxiety
- Rate of improvement
- Safety and tolerability

SPN-820
Phase 2a Study in MDD

- Optimize dosing and assess rapid onset
  - Pulsatile dosing
  - Efficacy in major depressive disorder (MDD)
  - Rapid onset
- Open–label study
  - 40 subjects with MDD
  - Rapid and sustained efficacy (2, 4, 8 and 72 hours after a single administration of 2400 mg SPN-820, dosed every **3 days**)
  - Evaluate rapid onset of efficacy with HAM-D6
  - Evaluate efficacy with MADRS

Supernus® Pharmaceuticals

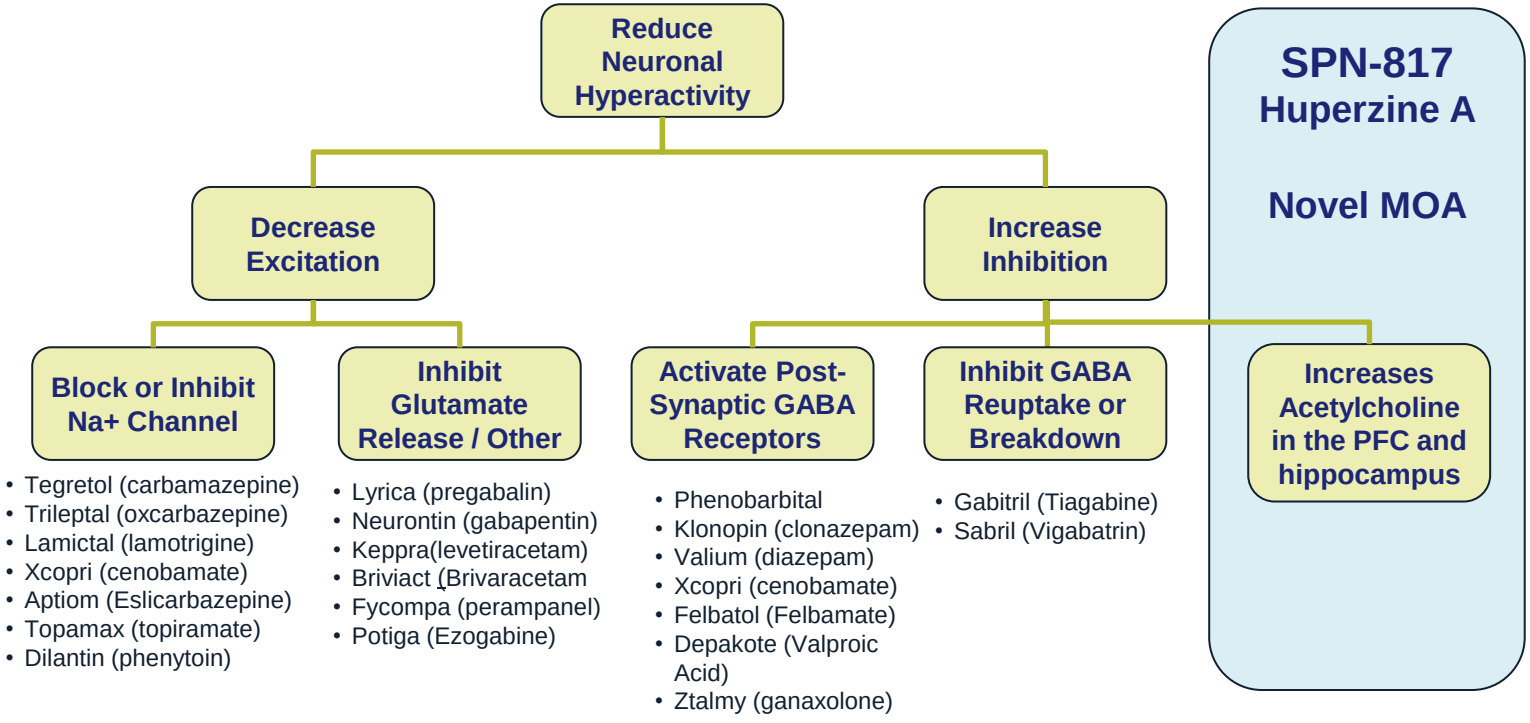
SPN-817

Novel First in Class Selective AChE Inhibitor for Focal Seizures

- Phase 2 long-term maintenance:
  - mean reduction in 28-day seizure rate from baseline (excluding titration) was 70% (n=3)
- Well-tolerated according to reported adverse events
- Broad and potent anti-seizure effect in different seizure and genetic models of epilepsy
- Unique AChE inhibitor with high selectivity, low activity on BuChE
- Potential for pro-cognitive, neuroprotective, and anti-inflammatory effects
- Entering Phase 2b in 2024

Supernus® Pharmaceuticals

A New Class of Therapy



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SPN-817 Preclinical Data: Refractory Seizures

(ED_{50} in mg/kg)	22mA	32mA	44mA
Phenytoin	9.4	>60	>60
Lamotrigine	4.4	>60	>60
Ethosuximide	86.9	167	>600
Valproic Acid	41.5	126	310
Levetiracetam (Keppra)	4.6	19.4	1,089
SPN-817	0.28	0.34	0.58-0.78

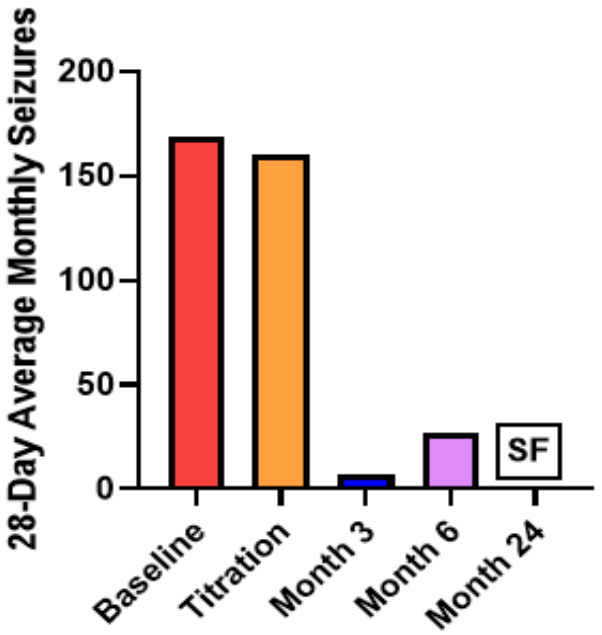
- The 6Hz animal seizure model screens compounds as potential therapies for drug-resistant partial seizures.
  - SPN-817 57x more potent than Keppra® at commonly used 32mA stimulation
  - SPN-817 was the only compound tested that produced significant seizure protection at highest seizure inducing state-44mA

Sources: NIH Anticonvulsant Screening Program Data
Data on file. All trademarks are owned by their respective owners.

Supernus® Pharmaceuticals

SPN-817: Significant Seizure Reduction in Small POC Study

- Patients had focal impaired-awareness seizures (FIAS) type epilepsy, treated with a maximum dose of 4 mg BID
- Mean reduction in 28-day seizure rate from baseline was:
  - **71.2%** until month14 (n=3)
  - **89.8%** until month 40 (n=2)
  - **98%** until month 51 (n=1)
- One subject has been seizure-free for >3.5 years and regained his driver's license and returned to work
- Most TEAEs were transient, mild or moderate in intensity:
  - Insomnia and nausea followed by nasopharyngitis, pyrexia, and dizziness.

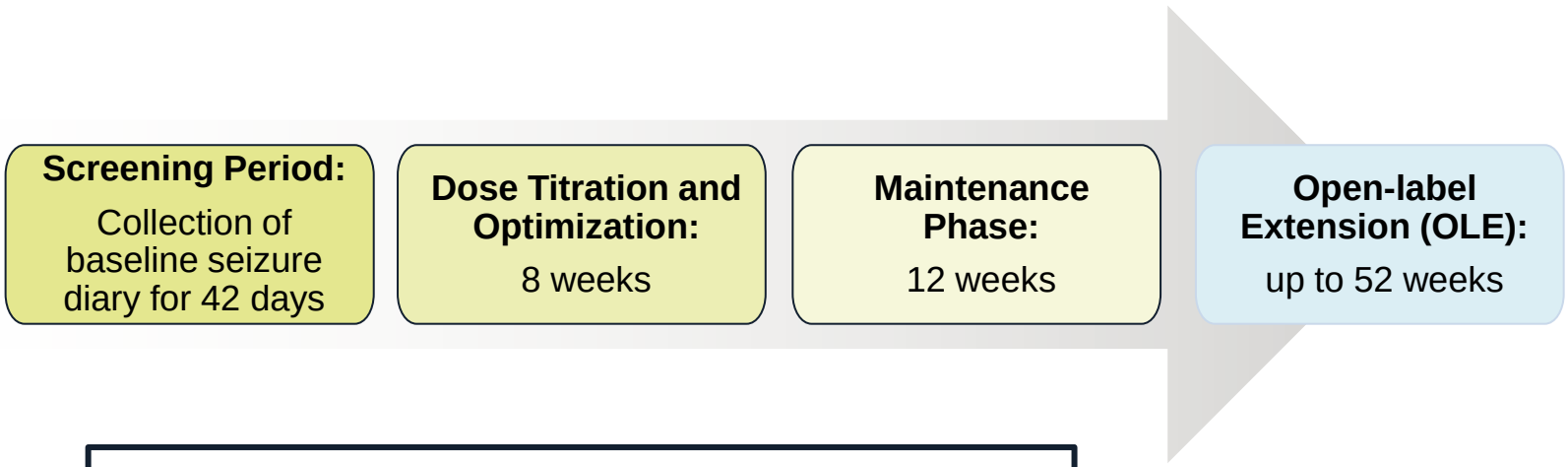


SF = seizure free, graph represents data from 1 subject

Supernus® Pharmaceuticals

SPN-817: Phase 2a Study Design

- Open-label study: up to 8 sites in Australia
- Approximately 35 adult subjects with treatment resistant focal seizures
- Enrolling with topline data expected in second half of 2024



Titration:
- All patients initiated on 0.25mg bid
- Dose escalation by increments of 0.25mg or 0.5mg every 3-8 days, depending on tolerability, up to 4.0mg bid

SPN-817: Phase 2a Endpoints

- Primary:
  - Safety and tolerability as an adjunctive therapy in adult patients with treatment resistant seizures
- Secondary:
  - Percent change from baseline in motor seizure frequency per 28 days
  - Improvement in seizure symptoms (CGI-I)
  - Change in seizure symptom severity (CGI-S)
  - Change in Quality of life in epilepsy (QOLIE-31-P)
  - Change in level of disability (seizure-related disability assessment scale scores, SERDAS)
  - Characterize the PK profile of huperzine A
- Exploratory: Change from baseline:
  - In select inflammatory biomarkers in plasma (interleukin-1 receptor antagonist [IL-1RA], IL-6, IL-10, and C-reactive protein)
  - In cognitive profile as assessed by EpiTrack® and Controlled Oral Word Association Test (COWAT)
  - In seizures + interictal spikes and sleeping patterns (EEG)

Supernus® Pharmaceuticals

SPN-817 Phase 2a Study: Interim Data

- 7 patients completed titration at doses ranging from 1.0 mg bid to 4.0 mg bid
  - Most common TEAEs were diarrhea, nausea, headache, insomnia, and affect lability
  - All TEAEs were mild/moderate in severity
- 6 patients completed titration with available seizure diary data
  - 63.5% mean reduction in seizures per 28 days during maintenance period (n=2)
- 2 patients achieved seizure freedom (100% reduction) during titration after 8 weeks and 9 weeks of treatment, respectively
- 1 patient completed the study and moved into OLE with 68.3% reduction in seizures over the entire treatment period

Supernus® Pharmaceuticals

Near-Term Milestones

Initiation of Phase 4 study with Qelbree in ADHD with comorbid mood disorders	End of 2023	√
Initiation of Phase 2a study with SPN-820 in MDD	End of 2023	√
Interim data from SPN-817 Phase 2a study	May 2024	
Topline data (all patients) from SPN-817 Phase 2a	Second Half 2024	
Potential launch of SPN-830 if approved by the FDA	Second Half 2024	
Topline data from SPN-820 Phase 2b in TRD	First Half 2025	

Full Year 2024 Financial Guidance[1]

	($ millions)
Total Revenues (Includes $125-135M on Trokendi XR and Oxtellar XR)	**$580 - $620**
Combined R&D and SG&A Expenses	**$430 - $460**
Operating Loss - GAAP	**($30) – $0**
Adjustments:	
Amortization of intangible assets	$80 - $81
Share-based compensation	$27 - $29
Contingent consideration	$1 - $2
Depreciation	$2 - $3
Operating Earnings - non-GAAP	**$80 - $110**

[1] Guidance as provided on February 27, 2024

Positioned For Strong Growth

Growth Potential of Existing Products

Qelbree® and GOCOVRI®

Innovative R&D Portfolio

SPN-830	**Novel Infusion Device for PD**
SPN-820	**First in Class Novel MOA for Depression**
SPN-817	**First in Class Novel MOA for Epilepsy**
SPN-443	**Novel ADHD Stimulant with CIV Scheduling**

Corporate Development

Supernus® Pharmaceuticals