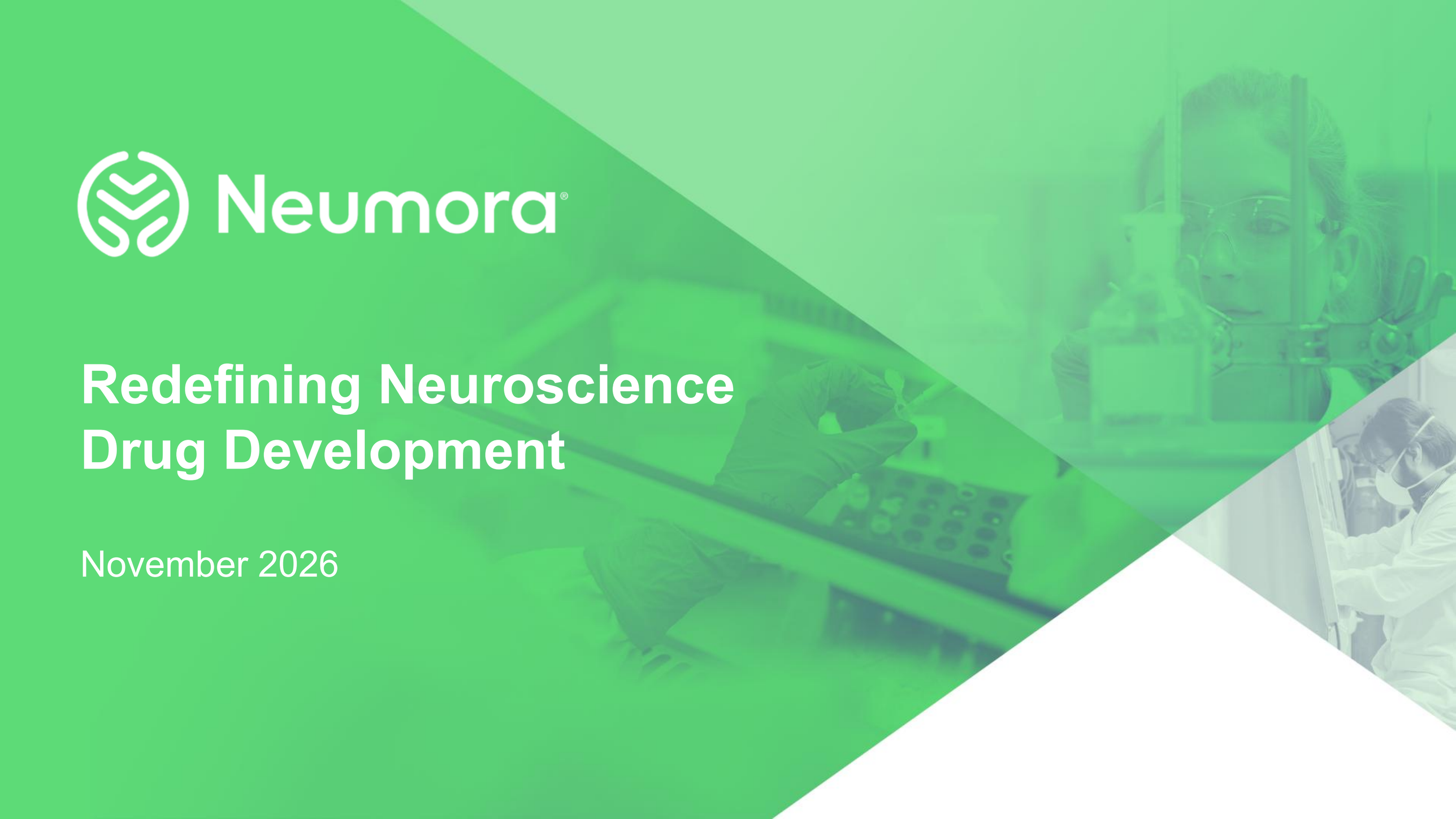
Neumora®

Redefining Neuroscience Drug Development

November 2026



Important Disclosures

This presentation contains forward-looking statements about Neumora Therapeutics, Inc. (the “Company,” “we,” “us,” or “our”) within the meaning of the federal securities laws, including statements related to: Neumora’s intention to redefine neuroscience drug development by bringing forward the next generation of novel therapies that offer improved treatment outcomes and quality of life for patients; the timing, progress and plans for its therapeutic development programs, including the timing of clinical trial initiation and data readouts, including for the NMRA-215, NMRA-511 and NMRA-898 studies; support for continued development, and upcoming milestones and catalysts; expectations and projections regarding future operating results and financial performance, including our ability to continue to operate our business and complete the development and commercialization of our product candidates, if approved; our ability obtain additional funding; and other statements identified by words such as “could,” “expects,” “intends,” “may,” “plans,” “potential,” “should,” “will,” “would,” or similar expressions and the negatives of those terms. Other than statements of historical facts, all statements contained in this presentation are forward-looking statements within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995. These statements are subject to risks and uncertainties that could cause the actual results to be materially different from the information expressed or implied by these forward-looking statements, including, among others: the risks related to the inherent uncertainty of clinical drug development and unpredictability and lengthy process for obtaining regulatory approvals; risks related to the timely initiation and enrollment in our clinical trials; risks related to our reliance on third parties, including CROs; risks related to serious or undesirable side effects of our therapeutic candidates; risks related to our ability to utilize and protect our intellectual property rights; and other matters that could affect sufficiency of capital resources to fund operations. For a detailed discussion of the risks and uncertainties that could cause actual results to differ from those expressed in these forward-looking statements, as well as risks relating to Neumora’s business in general, please refer to the risk factors identified in the Company’s filings with the Securities and Exchange Commission (SEC), including but not limited to its Quarterly Report on Form 10-Q for the quarter ended September 30, 2026 which was filed with the SEC on or about the date hereof. Forward-looking statements speak only as of the date hereof, and, except as required by law, Neumora undertakes no obligation to update or revise these forward-looking statements. Our results for the quarter ended September 30, 2026 are not necessarily indicative of our operating results for any future periods.

Neumora™

Our Mission

We are focused on bringing forward the next generation of novel therapies with brain-penetrant chemistry that offer improved treatment outcomes and quality of life for patients



Led by experienced company builders and leading neuroscience drug developers

Leadership



Paul L. Berns
Co-Founder, Executive Chair
& Chairman of Board of Directors



Joshua Pinto, Ph.D.
President & Chief Executive Officer



Bill Aurora, Pharm.D.
Chief Operating & Development Officer



Nick Brandon, Ph.D.
Chief Scientific Officer



Amy Sullivan
Chief Human Resources Officer



Doron Sagman, MD, FRCPC
Chief Medical Officer



Michael Milligan
Chief Financial Officer



Pablo Gersberg
Chief Information Officer



Helen Rubinstein
Chief Business Officer

Board of Directors

Paul L. Berns
Co-Founder, Executive Chair
& Chairman of Board of Directors

Kristina Burow
Managing Director, ARCH Venture Partners

Matthew K. Fust
Biotechnology Advisor

Alaa Halawa
Executive Director, Mubadala Capital

Maykin Ho, Ph.D.
Retired Partner, Goldman Sachs

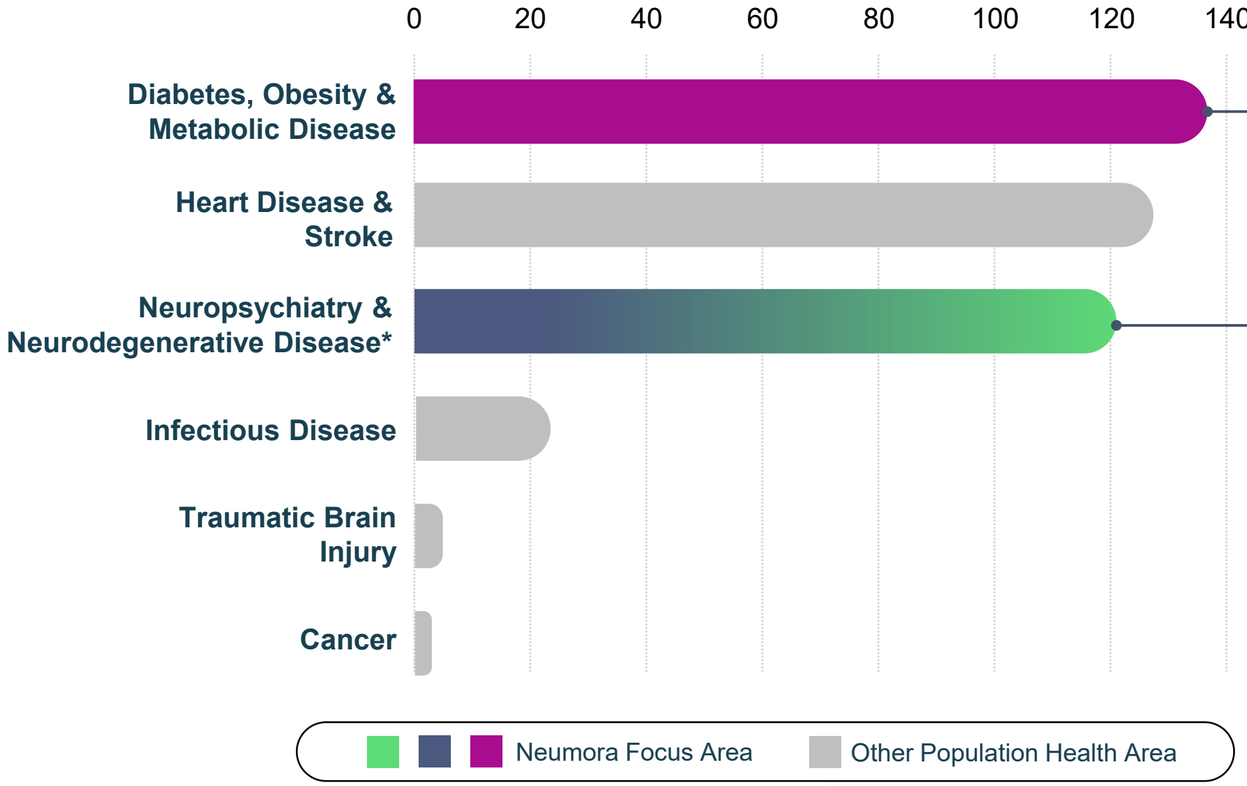
David Piacquad
Biotechnology Advisor

Joshua Pinto, Ph.D.
President & Chief Executive Officer

Goal to address unmet needs across large markets

Biggest Health Disorders Facing U.S.[1]

Patients Impacted (M)



Goal To Address Unmet Needs

Cardiometabolic Disease

- Expanded oral treatment options
- Improved tolerability profile
- Novel mechanisms with potential for CV risk reduction, higher quality weight loss and maintenance

Neurodegenerative Disease

- Novel mechanisms with favorable benefit/risk profiles
- Oral treatments that reduce caregiver burden
- Improved tolerability and safety, particularly in elderly and high-risk populations

Neuropsychiatric Disease

- Effective treatments with favorable tolerability profiles
- Novel mechanisms with the potential to treat multiple elements of disease

1. Source: National Institutes of Health (NIH), “Our Biggest Health Challenges,” last reviewed January 21, 2025; CDC/NCHS, NHANES 2021–2023; The Lancet Diabetes & Endocrinology Commission, 2025; NIMH, 2025.
*Includes: major depressive disorder, bipolar depression, schizophrenia, generalized anxiety disorder, post traumatic stress disorder, substance use disorder, Alzheimer's disease, Parkinson's disease, attention-deficit hyperactivity disorder

Advancing three franchises, each anchored by a potential best-in-class program



NLRP3 = Nucleotide-binding Domain, Leucine-rich–containing Family, Pyrin Domain–containing-3; V1aR = Vasopressin 1a Receptor; GCase = Glucocerebrosidase

NMRA-215: differentiated NLRP3 inhibitor for obesity and cardiometabolic diseases

NMRA-215 Target Profile

Rationale/Pharmacology
NLRP3-related inflammatory response via release of IL-1β, IL-18 and IL-6 cytokines is associated with obesity[1,2] and cardiovascular risk[3,4,5]

Indication
Obesity, Cardiometabolic Disease

Target Administration
Oral, once-daily

IP
Composition of matter patent extending to 2043+*

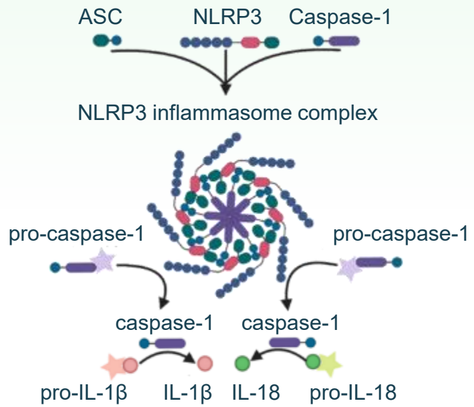
Epidemiology
~1.13 billion patients in the world with obesity by 2030[3]

Multiple factors drive NLRP3-mediated inflammation resulting in disease

DRIVERS

- Diet (e.g., lipids)
- Environment
- Genetics
- Aging

NLRP3 Activation



DISEASES

- Neurodegeneration (Parkinson's)
- Cardio-metabolic (obesity)
- Monogenic / autoimmune (CAPS)

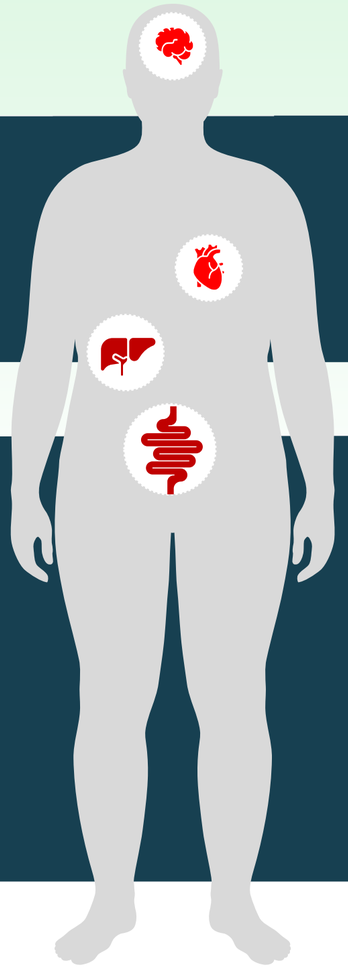
*Excluding any patent term adjustment or extension

1. O'Brian et al. *J Neuroinflammation.* 2020;17(1):104. 2. Wani K et al. *Int J Environ Res Public Health.* 2021;18(2):511. 3. World Obesity Federation. World Obesity Atlas 2024. London: World Obesity Federation, 2024. https://data.worldobesity.org/publications/?cat=22. 3. Ridker PM. From C-Reactive Protein to Interleukin-6 to Interleukin-1: Moving Upstream To Identify Novel Targets for Atheroprotection. Circ Res. 2016 Jan 8;118(1):145-56. doi: 10.1161/CIRCRESAHA.115.306656. PMID: 26837745; PMCID: PMC4793711. 4. Ridker PM, Moorthy MV, Cook NR, Rifai N, Lee IM, Buring JE. Inflammation, cholesterol, lipoprotein(a), and 30-year cardiovascular outcomes in women. N Engl J Med. 2024;391(22):2087-2097. doi:10.1056/NEJMoa2405182. 5. Robson M, Im SA, Senkus E, et al. Olaparib for metastatic breast cancer in patients with a germline BRCA mutation. N Engl J Med. 2017;377(6):523-533. doi:10.1056/NEJMoa1706450.

Figure: AdipoGen Life Sciences. https://adipogen.com/inflammasomes/rce

CNS penetrant NLRP3 inhibition provides broad benefit

System	Drug Impact	Outcome
CNS	Reduce neuroinflammation in the brain	Reduced appetite and drive body weight loss
Periphery	Protect organ and vascular system from inflammation-related damage	Reduce the risk of comorbidities. • Reduces heart disease: improved CV outcomes • Improves type II diabetes: reduced insulin resistance in mice



Potential treatment benefits driven by both CNS and peripheral inhibition of NLRP3

NMRA-215 has an optimized pharmacological profile including CNS exposure

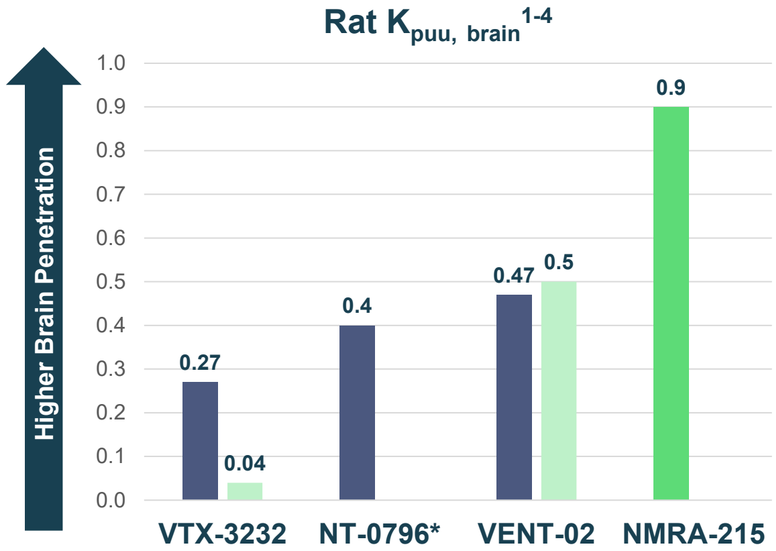
NMRA-215 is highly potent with low nM potency across a range of assays

NMRA-215 Assay Format	IC_{50}
THP-1 (IL-1β)	3 nM
Target engagement (Nanobret)	5 nM
iMicroglia (IL-1β)	8 nM
Human whole blood (IL-1β)	16 nM

NMRA-215 is highly selective for NLRP3

- NMRA-215 is highly selective for NLRP3 versus other inflammasomes (NLRP1, NLRC4, AIM2)
- >250-fold selective for NLRP3 versus a broad panel of targets (Eurofins SafetyScreen87)
- Clean profile in cardiac ion channel and kinase screening panels

NMRA-215 is extensively characterized and optimized for brain exposure



MDCK permeability:	**4.7**	**15**	**34**	**14.0**
P-gp efflux ratio:	**5.7**	**0.5**	**0.7**	**1.1**

= characterized by Neumora = sponsor reported

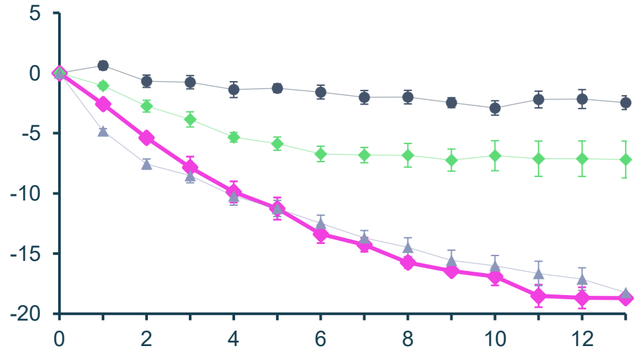
*NT0796 = mouse K_{puu}

1. Neumora data on file. 2. Thornton P, et al. *JPET*. 2024 Feb 15;388(3):813-826 . 3. Ventus Data Presented at 5th Annual Inflammasome Summit. November 28 – 30, 2023. Boston, MA. 4. Ventyx R&D Day Presentation. Published Jan 2023, rat $K_{puu,CSF}$.
MDCK permeability, P-gp efflux ratio and Kpuu brain data generated by Neumora. NT-0796 Kpuu brain could not be evaluated without humanized CES1 mice.

DIO data supports utility of NMRA-215 across multiple treatment paradigms

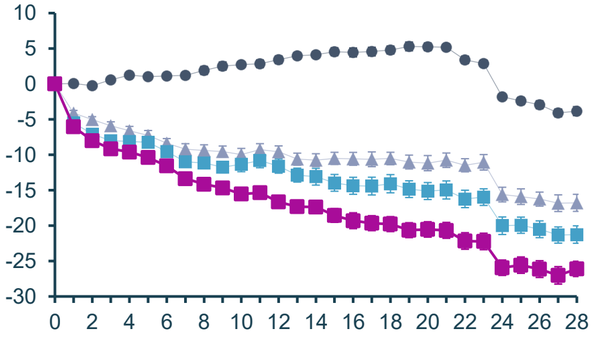
Monotherapy

- **Up to 19% weight loss** with incretin-like induction
- Reduced food intake equivalent to semaglutide



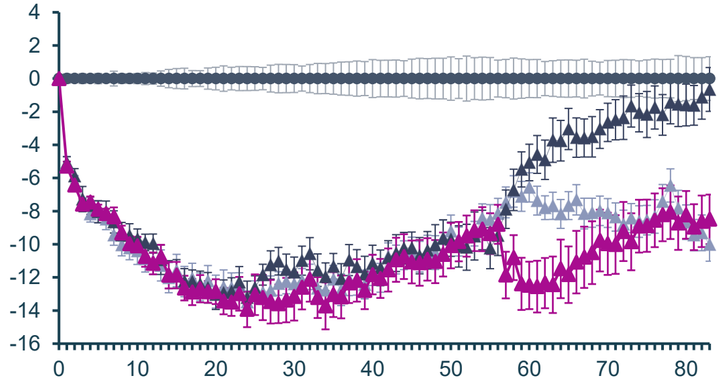
Combination Therapy

- **Up to 26% weight loss** when combined with therapeutically active dose of semaglutide
- Potential for incretin-sparing combination with better tolerability



Mechanism of Action Switch

- Sustained weight loss **following switch from semaglutide to NMRA-215**



Improvements across key biomarkers in all settings

Matched semaglutide weight loss, while preserving lean mass

Improved metabolic biomarkers relative to semaglutide

Improved liver health, cardiometabolic profile and insulin sensitivity

Vehicle
semaglutide
NMRA-215 Mid Dose
NMRA-215 Target Dose
Combination with NMRA-215 Mid Dose
Combination with NMRA-215 Target Dose
semaglutide → Vehicle
semaglutide → NMRA-215 Target Dose

Class-leading weight loss demonstrated with NMRA-215

		Neumora	ventyx BIOSCIENCES	Ventus THERAPEUTICS	BIOAGE	REZera.
		NMRA-215	**VTX3232**	**VENT-02**	**BGE-102**	NT-0796
NMRA-215 monotherapy demonstrates class-leading weight loss	**NLRP3i** (end of study)	**15%–19%**	2%	11%	6 %	*17%*
	semaglutide (end of study)	**17%–19%**	12%	21%^	5%	*21%*
NMRA-215 monotherapy matches semaglutide induction	**NLRP3i** (Day 7)	**9% / 14%** (Study 2) (Study 3)	3%	8%	6%	*7%*
	semaglutide (Day 7)	**9% / 14%** (Study 2) (Study 3)	9%	15%^	11%	*11%*
Combination demonstrates additive effects of NMRA-215	**NLRP3i + semaglutide** (Day 28)	**26%**	19%	29%^	21%	*24%#*

Studies in humanized transgenic obese mice are not directly comparable to other DIO studies

^Ventus semaglutide dose = 10 nmol/kg. #Rezera combination study semaglutide dose = 5 µg/kg. Other market participant data obtained through company, scientific and Wall Street research publications

Note: Data on this slide presented for illustrative purposes only. These molecules have not been studied in head-to-head clinical trials and there are differences in compounds, trial design and other factors, which must be considered.

Totality of NMRA-215 non-clinical data support advancing to clinical studies

Study		Study Outcome	Study Supportive of Further Development
DOGS	**GLP 28-Day** *Dog Toxicity Study*	✓	✓
	GLP 3-Month *Dog Toxicity Study*	✓	✓
RATS	**GLP 28-Day** *Rat Toxicity Study*	✓	✓
	GLP 3-Month *Rat Toxicity Study 1*	Unexpected adverse findings	For-cause audit revealed various discrepancies resulting in a number of critical audit observations
	GLP 3-Month *Rat Toxicity Study 2*	✓	✓

✓ = *study supportive of progressing to human development*

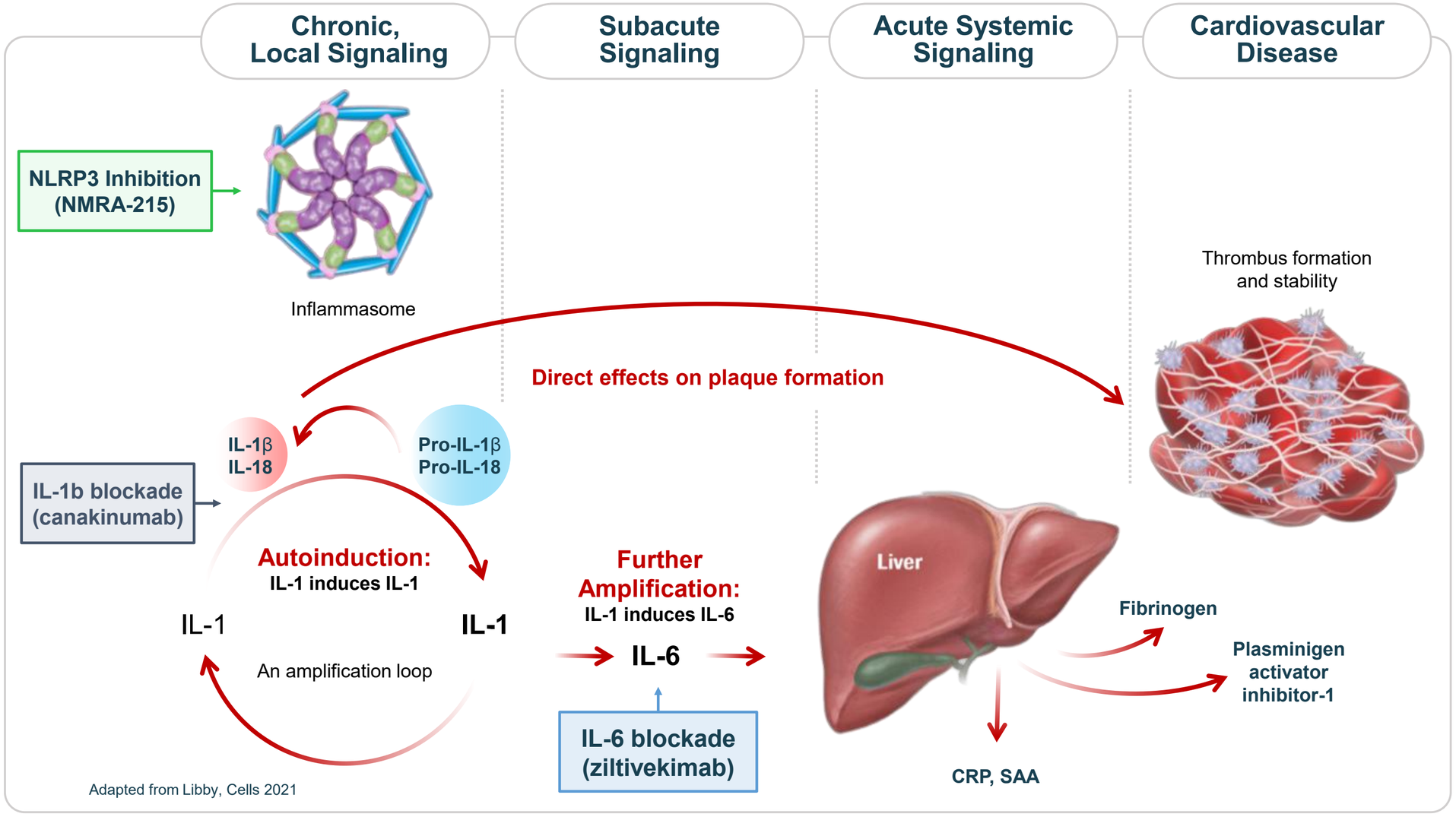
Chronic inflammation increases CV risk and contributes to plaque and thrombus formation

Ziltivekimab blocks IL-6 signaling, reducing the acute phase liver response (e.g. CRP production) and downstream CV risk factors, **but chronic IL-1 and IL-18 signaling remain**

In CANTOS, canakinumab drove blockade of **IL-1b signaling, resulting in decreased MACE risk,** in people with prior MI

NLRP3 inflammasome inhibition, **works upstream** to reduces chronic inflammation and CV risk

NMRA-215 has best-in-class potential due to its potency, selectivity, and CNS penetrance to enable development in obesity



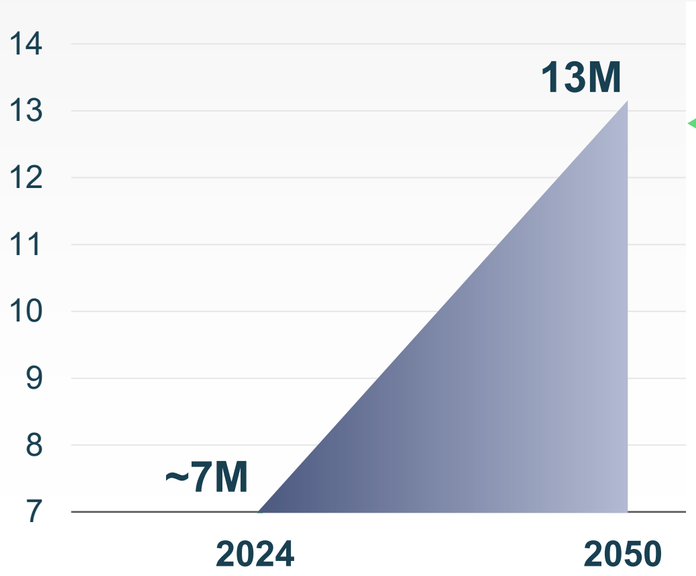
Ridker PM, Everett BM, Thuren T, et al. Antiinflammatory therapy with canakinumab for atherosclerotic disease. N Engl J Med. 2017;377(12):1119-1131. doi:10.1056/NEJMoa1707914

Alzheimer’s disease agitation represents large market opportunity with significant unmet need

Alzheimer’s disease agitation is a large and growing health burden

Millions currently living with AD; prevalence expected to increase as the population ages[1]

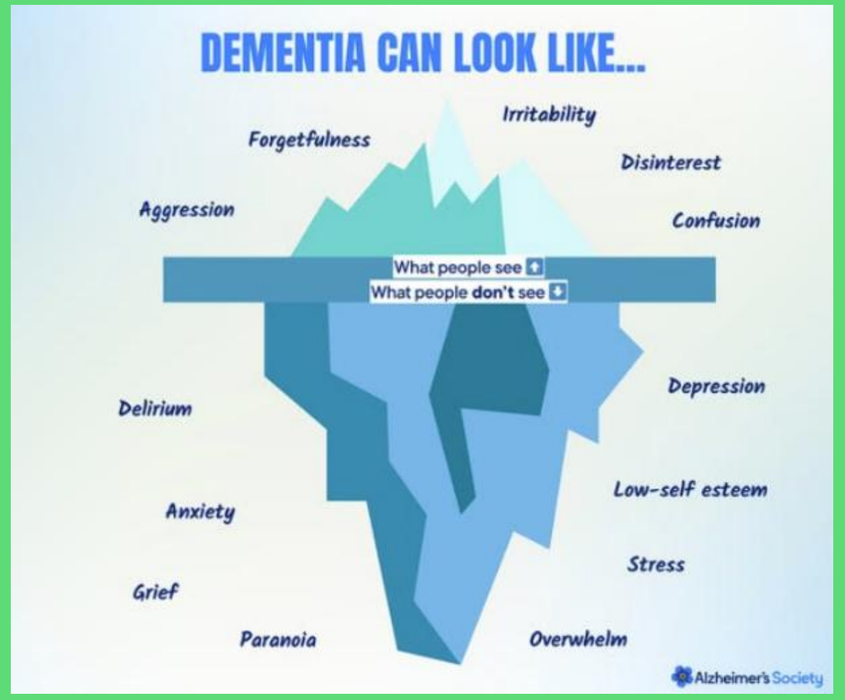
U.S. Adults with Alzheimer’s Disease (M)[1]



>70%

of people with AD experience agitation at some point in their disease[2]

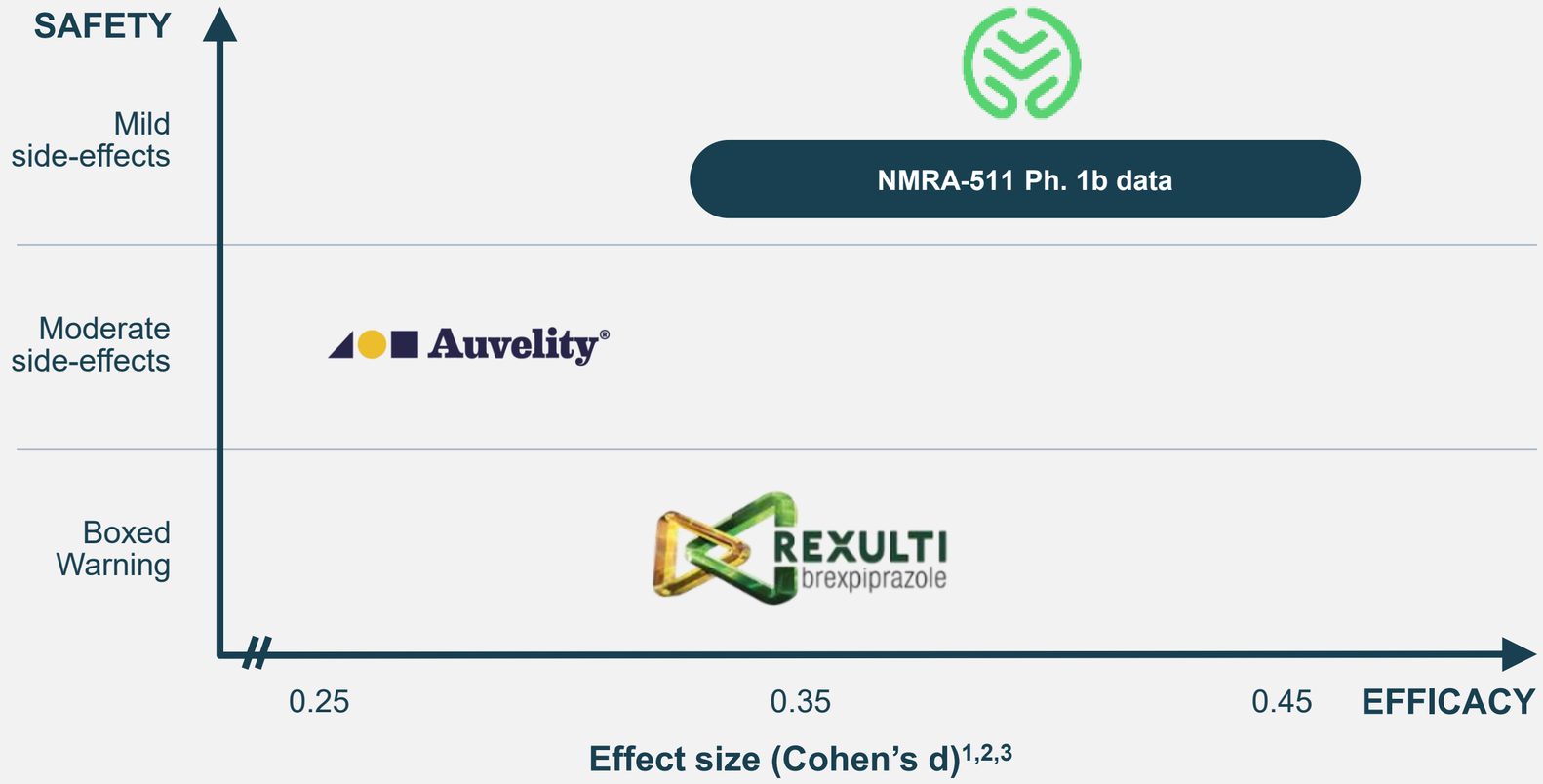
Anxiety is a key underlying driver of aggression and irritability in dementia[3]



1. Alzheimer's Association. 2025 Alzheimer's Disease Facts and Figures. Alzheimer's Dementia 2025;21(5). 2. Van der Mussele S, et al. Aging Ment Health 2015;19(3):247-257. 3. Image from Alzheimer’s Society

NMRA-511 has potential as a treatment for AD agitation

Simplified market segmentation and opportunities



NMRA-511

PHASE 1B KEY TAKEAWAYS

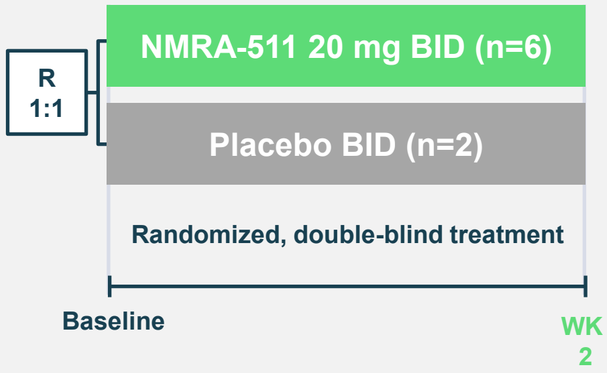
- Well tolerated, with potential for higher dosing
- CMAI effect size similar to Auvelity in total population
- Unsurpassed CMAI effect size in patients with elevated anxiety

For illustrative purposes only. NMRA-511 has not been studied in head-to-head trials against Auvelity or Rexulti, and there are differences in compounds, trial designs and other factors which must be considered.

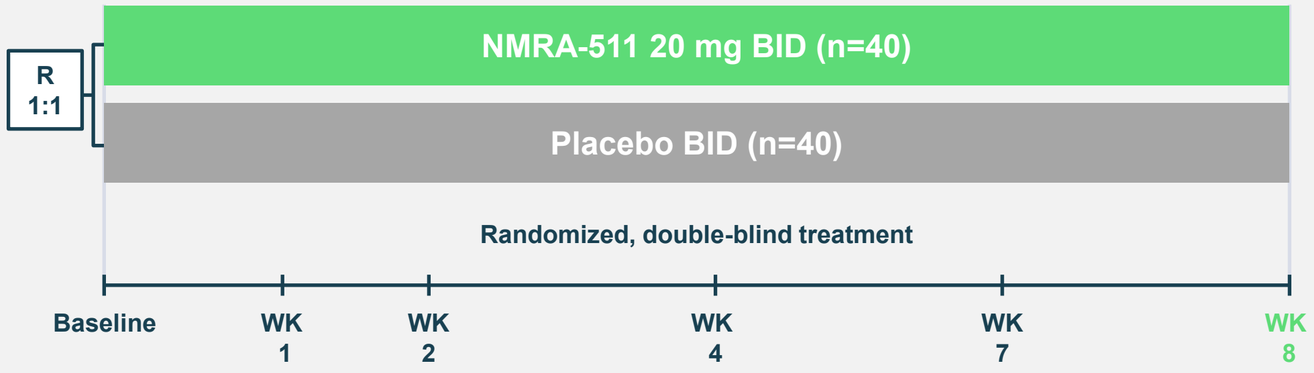
1. Calculated from data: Addressing Dementia Via Agitation-Centered Evaluation (ADVANCE). https://clinicaltrials.gov/study/NCT03226522?intr=AXS-05&page=1&rank=9&tab=results.
2. Lee D, Slomkowski M, Hefting N, et al. Brexpiprazole for the Treatment of Agitation in Alzheimer Dementia: A Randomized Clinical Trial. JAMA Neurol. 2023;80(12):1307–1316. doi:10.1001/jamaneurol.2023.3810. 3NMRA data on file. CMAI = Cohen-Mansfield Agitation Inventory.

Phase 1b designed as a signal-seeking study

Part A: 2-Week Evaluation Period Enrolling Healthy Elderly Participants



Part B: 8-Week Evaluation Period Enrolling People with Alzheimer's Disease Agitation (ADA)



NMRA-511 Phase 1b Study	
Part A Inclusion Criteria:	• Healthy elderly adult participants aged 65-80 years
Part B Inclusion Criteria:	• Adults aged 55-90 years with mild-severe dementia (MMSE score of 5-24) and clinically significant agitation (CMAI total score 45-100)
Part B Primary Endpoint:	• Δ from baseline to Week 8 in CMAI total score
Part B Other Endpoints Include*:	Δ from baseline to Week 8 in: • CGI-S • NPI total score
Prespecified Sub-Populations:	• Elevated anxiety (RAID)
Statistics:	• **Study not powered to demonstrate statistical significance** • Designed as a signal-seeking study; effect size will inform the potential future development of NMRA-511 in ADA

*Safety Assessments include adverse events, clinical laboratory, vital signs, physical examination, 12-lead elecrtocardiogram (ECG), Columbia-Suicide Severity Rating Scale (C-SSRS). Δ = Change; BID = twice daily; CMAI = Cohen-Mansfield Agitation Inventory; MMSE =Mini-Mental State Examinations; CGI = Clinical Global Impression of Severity; NPI = Neuropsychiatric Inventory.

NMRA-511 drove CMAI reductions comparable to approved agitation therapies, despite an unenriched population

Enrolled similar populations

	NMRA-511 Modified Analysis Set (MAS)*	NMRA-511 MAS, NPI-AA ≥4	NMRA-511 MAS, RAID ≥12	NMRA-511 MAS, NPI-AA ≥4, CMAI Factor 1 Positive	REXULTI brexpiprazole	Auvelity®
CMAI Total Score Change from Baseline	**-15.7**	**-17.8**	**-20.1**	**-18.1**	-17.6 to -22.6	-14.9

- NMRA-511 **reduced CMAI total scores** across all analysis populations, with larger effects in patients with greater baseline agitation
- **Reductions were comparable** to Rexulti and Auvelity pivotal studies
- Results were observed in Ph.1b study **without NPI-AA enrichment** included in Rexulti and Auvelity trials, and with **lower baseline NPI-AA scores** (5.1 vs. 7.2–7.7)

For illustrative purposes only. NMRA-511 has not been studied in head-to-head trials against Auvelity or Rexulti, and there are differences in compounds, trial designs and other factors which must be considered in making any comparisons.

Neumora data on file.; REXULTI (brexpiprazole) tablets, for oral use. Prescribing information. Otsuka America Pharmaceutical, Inc.; 2026.; AUVELITY (dextromethorphan hydrobromide and bupropion hydrochloride) extended-release tablets, for oral use. Prescribing information. Axsome Therapeutics, Inc.; 2026.

Rexulti and Auvelity studies were enriched with an NPI-AA domain cutoff ≥4 at baseline. NMRA-511 Phase 1b study included no enrichment. Baseline NPI-AA scores; NMRA-511: 5.1; Rexulti: 7.7 (Study 2); Auvelity: 7.2 (Advance-1)

*2 placebo patients excluded based on rater change driving outlier data (>3 standard deviations from the mean) and protocol-defined medication non-adherent patients. See Phase 1b demographics slide in appendix for more information on enrolled population.

Favorable tolerability and safety profile of NMRA-511

NMRA-511 was safe and generally well tolerated

TEAEs Incidence (≥5% in either treatment group)	Placebo n=40		NMRA-511 n=40	
Preferred Terms	**n**	(%)	**n**	(%)
Nasopharyngitis	3	(7.5%)	4	(10.0%)
Urinary tract infection	1	(2.5%)	4	(10.0%)
Anemia	1	(2.5%)	2	(5.0%)
Arthralgia	0		2	(5.0%)
Diarrhea	4	(10.0%)	2	(5.0%)
Dizziness	2	(5.0%)	2	(5.0%)
Headache	5	(12.5%)	2	(5.0%)
Hyponatremia	0		2	(5.0%)
Myalgia	1	(2.5%)	2	(5.0%)
Nausea	1	(2.5%)	2	(5.0%)
Vomiting	1	(2.5%)	2	(5.0%)
Abdominal pain	2	(5.0%)	1	(2.5%)

TEAEs were typically **mild to moderate** in severity

Low treatment discontinuations due to TEAEs (2.5%)

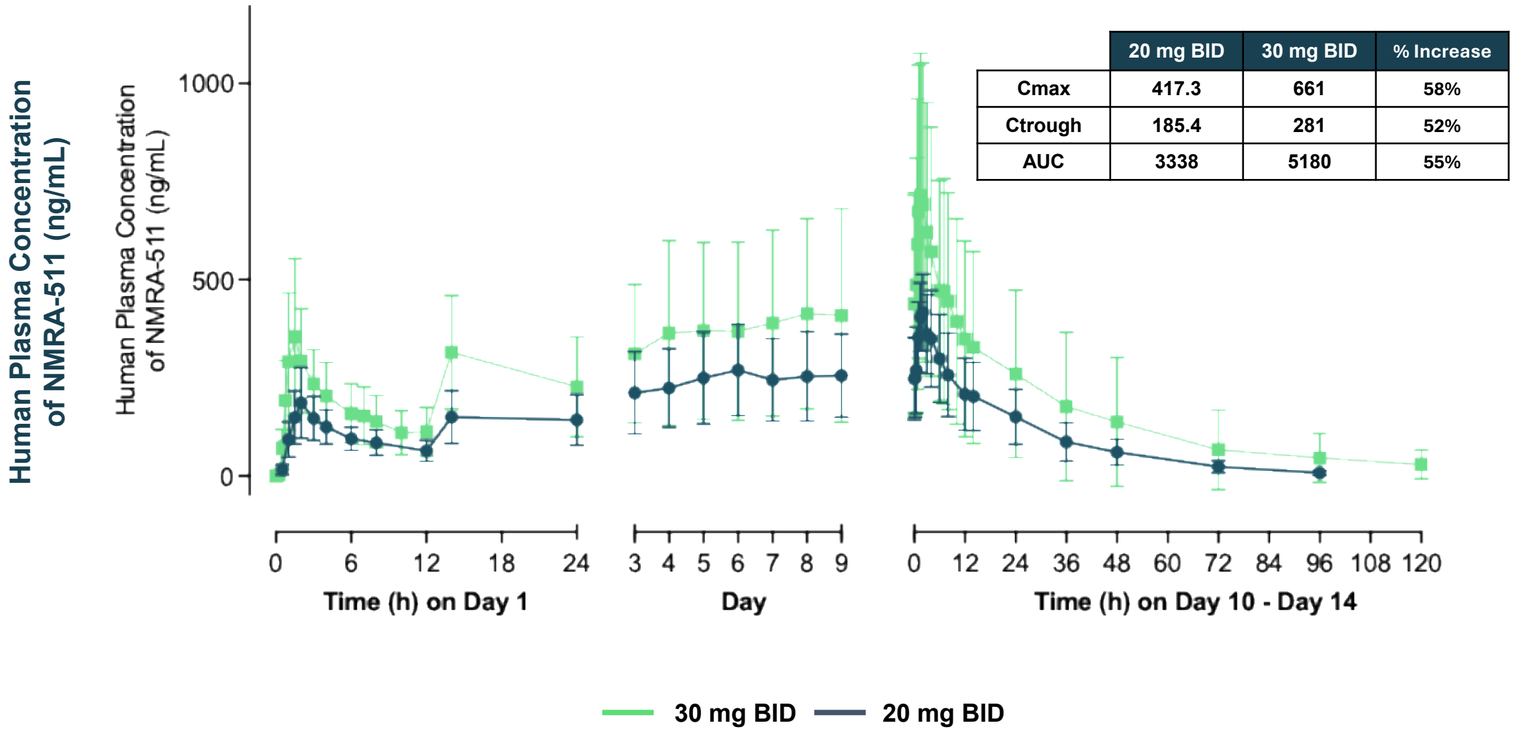
Opportunity to **evaluate higher doses** of NMRA-511 based on tolerability

One serious adverse event of asthenia (general weakness) reported; resolved by time of discharge from an overnight hospitalization and resolution was maintained at study follow up after treatment discontinuation

NMRA-511 30 mg BID dose demonstrated markedly greater exposure over the 20 mg BID dose that demonstrated a robust effect size in Ph. 1b

30 mg BID dose demonstrated dose-proportional increase in exposure compared to 20 mg BID dose

30 mg BID compared to 20 mg BID in healthy elderly participants



	20 mg BID	30 mg BID	% Increase
Cmax	417.3	661	58%
Ctrough	185.4	281	52%
AUC	3338	5180	55%

30 mg BID dose may build on the efficacy previously established in Phase 1b with the 20 mg BID dose

Based on data from MAD extension, 30 mg and 20 mg BID doses of NMRA-511 will be studied in Phase 2

NMRA-511 was safe and well-tolerated at 20 mg and 30 mg BID doses

BID = twice-daily

M4 PAM franchise: differentiated M4R PAMs for schizophrenia

M4 Franchise Target Profile

Pharmacology

Neumora has multiple series of chemically distinct, highly selective M4 muscarinic receptor PAMs designed for antipsychotic-like efficacy with the potential for improved tolerability profile; NMRA-898 is the lead molecule in the franchise

Indication

Schizophrenia

Target Administration

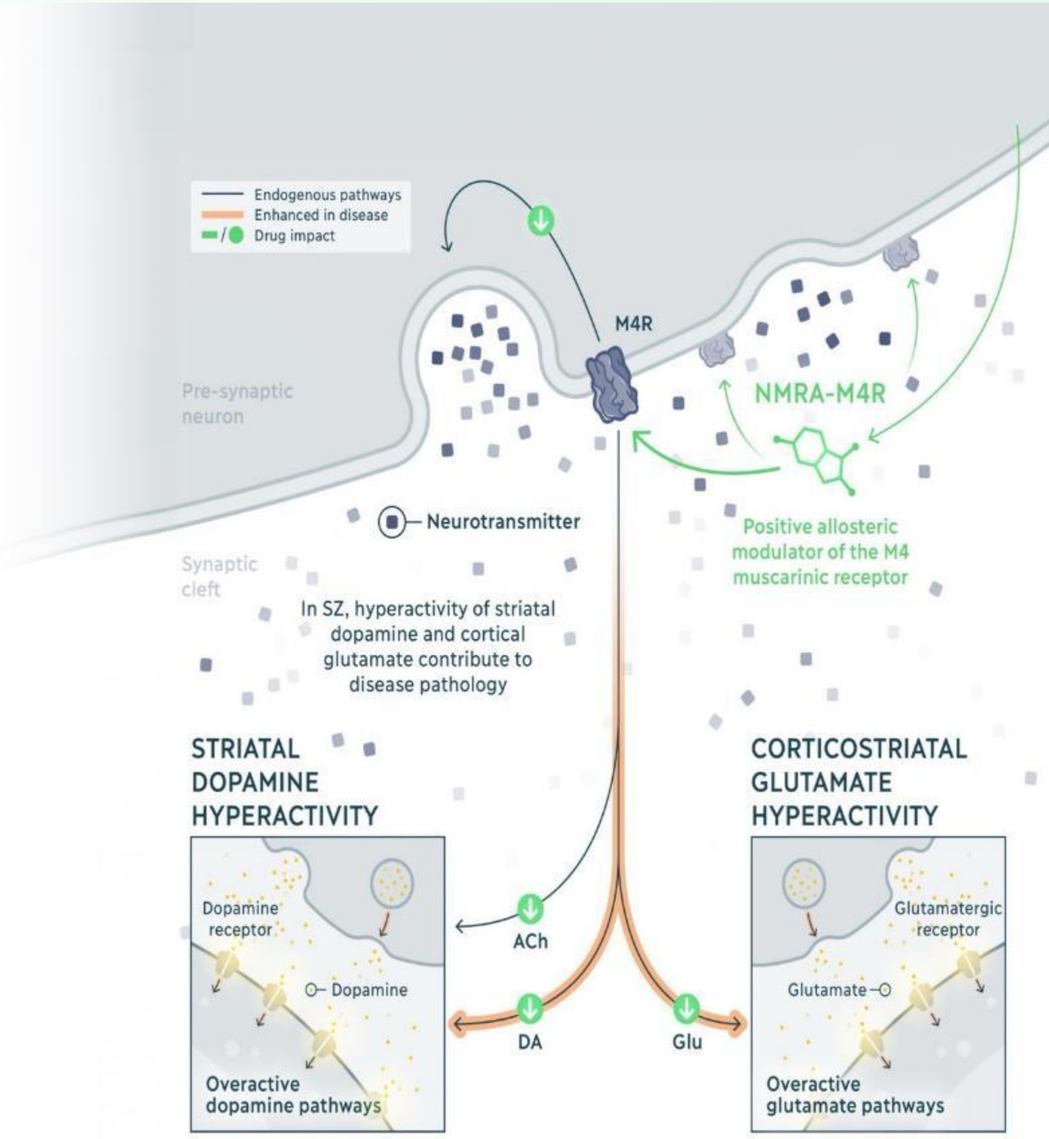
Oral, once-daily

IP

Composition of matter patent extending to 2044+*

Epidemiology

Estimated 3 million patients in the U.S. with schizophrenia[1]

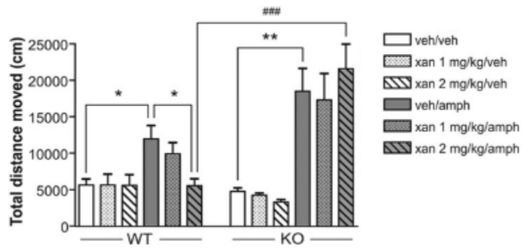


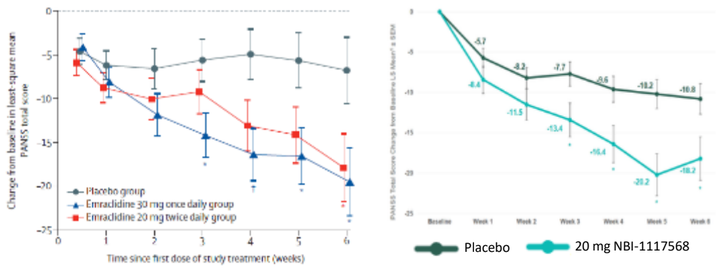
1. Wander, C. *Am J Manag Care*. 2020;26:S62-S68.
*Excluding any patent term adjustment or extension
PAM = positive allosteric modulator

An optimized muscarinic drug profile would include selectivity and potency in the CNS

Preclinical data and clinical data in acute schizophrenia supports M4 as a driver of antipsychotic activity

Activity of xanomeline (active component of Cobenfy™) is dependent on M4R in mice





Non-selective muscarinic agents are associated with a range of peripheral AEs

M4



Cardiovascular

Transient increased BP & heart rate

M1, M2, M3



GI Tract

Increased gastric secretion & gastric motility

M1, M2, M3



Cardiovascular

Direct effect on cardiac function – increased BP & heart rate

M1, M3



Glands

Increased salivation
Increased lacrimation
Increased sweating

PAMs offer the benefits of greater selectivity

- Targeting the allosteric site specifically allows for greater selectivity for M4 over other muscarinic sub-types than if targeting the orthosteric site due to binding site conservation
- To date the pharmacology of agonists targeting the orthosteric site are often thought to display ‘partial’ agonism which could contribute to variable clinical responses
- PAMs allow for more precise potentiation of M4, maintaining the spatial and temporal signaling dynamics of ACh

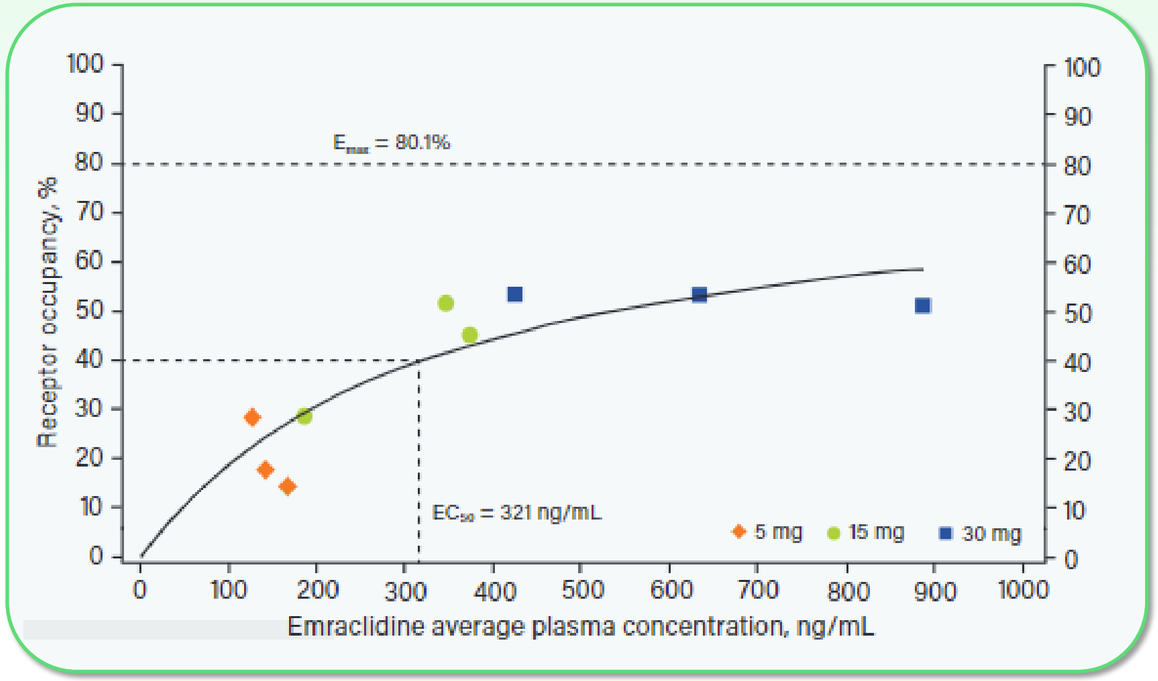
1. Digby GJ, et al. J Neurosci. 2012;32(25):8532-44. 2. Dencker D, et al. J Neurosci. 2011 April 20;31(16):5905-8. 3. Krystal JH, et al. Lancet. 2022 Dec 17;400(10369):2210-20. 4. Neurocrine Biosciences. Q1 Earnings Presentation. April 14, 2025. 5. Moran SP, et al. Trends Pharmacol Sci. 2019 Dec;40(12):1006-20. 6. Tobin AB. Nat Rev Drug Discov. 2024 Oct,23(10);743-58. 7. Paul SM, et al. Biol Psychiatry. 2024 Oct 15;96(8):627-37.

Emraclidine receptor occupancy disconnected from plasma exposures

Receptor Occupancy for Emraclidine in Humans Suggests the Compound has Limited Brain Exposure

- In a human PET study, peripheral concentration of emraclidine shows dose linear response
- However, CNS receptor occupancy unchanged when dose doubled from 15 to 30 mg
- Data suggests emraclidine may have limitations in engaging the M4 receptor in the brain

Low CNS exposure could limit efficacy



CNS = central nervous system; PET = positron emission tomography

Duvvuri S, et al. *Evaluation of M4 Muscarinic Receptor Occupancy by Emraclidine Using [^{11}C]MK-6884 PET in Healthy Volunteers*. Poster M206. Presented at the 62nd Annual Meeting of the American College of Neuropsychopharmacology, Tampa, FL: December 3-6, 2023.

NMRA-898 has potential best-in-class potency and optimized brain penetration

NMRA-898 is potentially more potent than emraclidine across multiple assays

NMRA–898 is selective for M4 over other muscarinic receptor subtypes

NMRA-898 is optimized for high CNS exposure

NMRA-898 is optimized for once daily dosing

NMRA-898 is well tolerated at exposures projected to achieve meaningful M4 potentiation

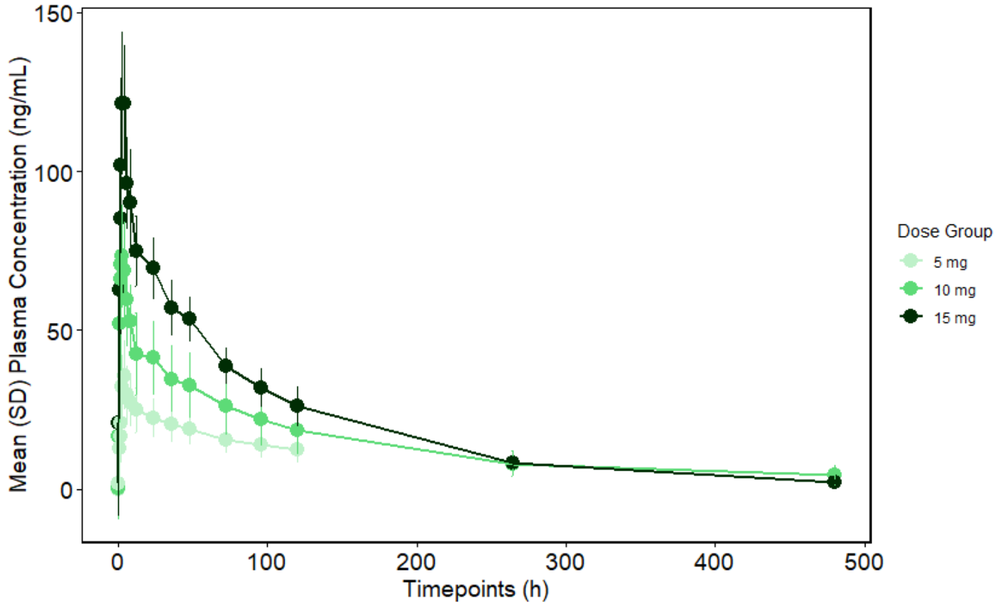
	NMRA-898[1]	Emraclidine
M4 EC_{50} *(human; cAMP)*[1]	13 nM	26 nM
M4 EC_{50} *(human; Ca^{2+})*[1]	8 nM	180 nM
Selectivity at other muscarinic receptor subtypes *(EC_{50})*[1]	M1, M2, M3, M5 > 10 µM	M1, M3, M5 > 10 µM, M2 5.7 µM
Brain exposure *MDCK permeability (target >10)* *P-gp efflux ratio (target <2)*[1,2]	High 36.7 0.93	Moderate 9.5 3, 6.02[1,2]
Human half-life^[3]	80 – 100 hr	9 – 12 hr
Estimated Free Brain C_{max}^ *(Fold cAMP EC_{50})*	2 x *Low PK variability*	N/A *High PK variability*

Note: Data on this slide is presented for illustrative purposes only. These molecules have not been studied in head-to-head clinical trials. ^NMRA-898 data based on ongoing Phase 1 (SAD/MAD) study.
cAMP = cyclic adenosine monophosphate; CNS = central nervous system; PAM = positive allosteric modulator
1. Data generated by The Warren Center for Neuroscience Drug Discovery at Vanderbilt University on behalf of Neumora across NMRA-861, NMRA-898 and emraclidine. 2. Butler CR, et al. *J Med Chem.* 2024 Jul 11;67(13):10831-47. 3. Krystal JH, et al. *Lancet.* 2022 Dec 17;400(10369):2210-20.

Promising Phase 1 clinical results single ascending dose study

Exposures support program advancement

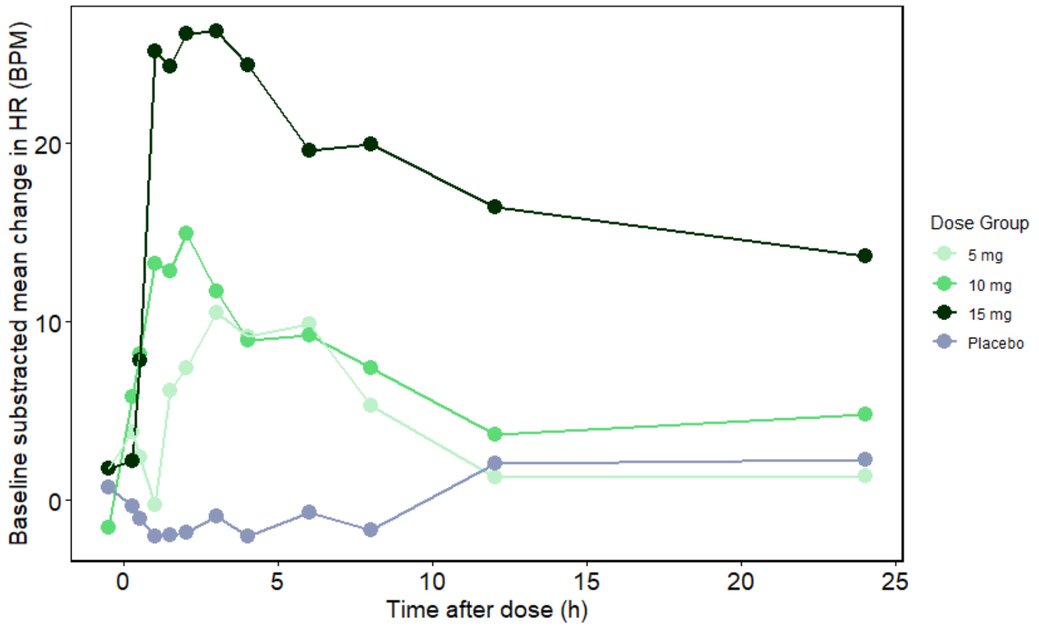
Phase 1 SAD PK Profile
(healthy adults)



Exposures were dose proportional with low variability and predicted free exposures in the brain above in vitro M4 EC50 levels

On-target changes in heart rate measures

Phase 1 SAD Heart Rate Changes
(healthy adults)



Exposure-dependent increases in heart rate, of similar magnitude to those demonstrated by Cobenfy (KarXT), providing pharmacodynamic evidence of target engagement

NMRA-898 data based on ongoing Phase 1 (SAD/MAD) study.

MAD study evaluating NMRA-898 in healthy adults and people with stable schizophrenia

Study Objectives

- Evaluate tolerable doses in people with stable schizophrenia
- Establish CNS penetration – based on CSF exposure

MAD – Part 2 CSP

	Dose	Participants	Randomization
Cohort 1	Dose to be determined	Healthy adults	6:2 active:placebo
Cohort 2	Dose to be determined	Healthy adults	
Cohort 3	Dose to be determined	Healthy adults OR with stable schizophrenia	
Cohort 4	Dose to be determined	Healthy adults OR with stable schizophrenia	
Cohort 5	Dose to be determined	Adults with stable schizophrenia	

Healthy adults Adults with stable schizophrenia



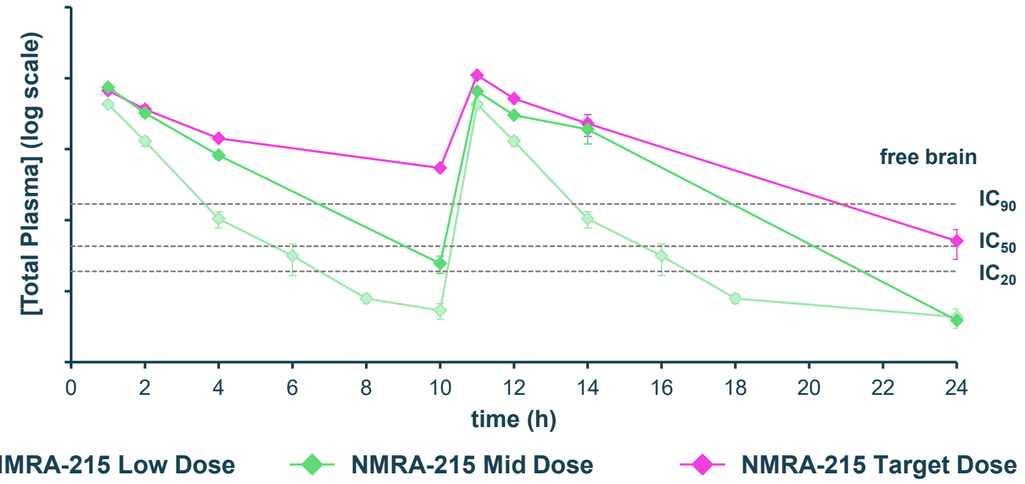
Appendix

Doses selected for DIO mouse studies to determine target coverage necessary for weight loss

NMRA-215 dose selection

Goal: Sustained IC_{90} target coverage for 24 hours

Dose (BID)	IC
Target Dose	90
Mid-Dose	50
Low Dose	20



Target dose drives IC_{90} in CNS and periphery over 24 hours based on human whole blood assay

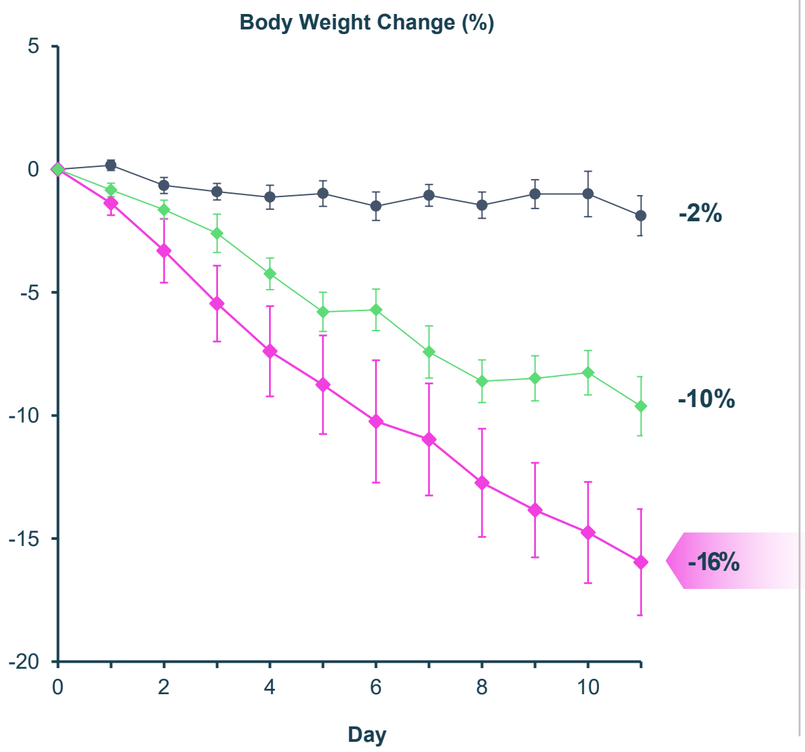
Semaglutide dose selection

Goal: Select two doses that allow for evaluation of different treatment paradigms

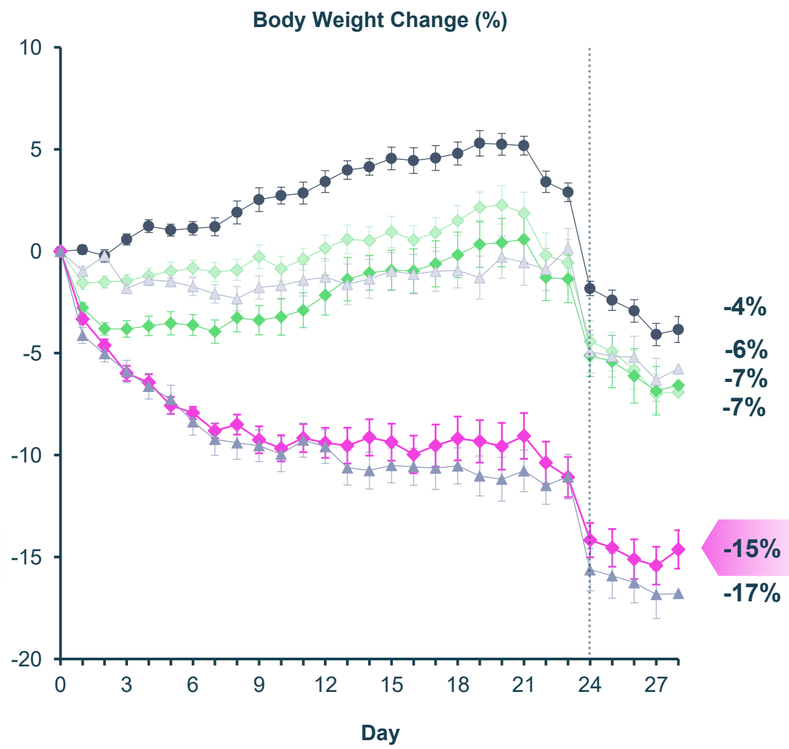
- Ability to evaluate combination and dose sparing effects of NMRA-215
  - Therapeutic dose: **3 nmol/kg**
  - Sub-therapeutic dose (incretin-sparing): **1 nmol/kg**
- Similar dosing paradigm used by other sponsors allows for comparison across studies

Monotherapy: Up to 19% weight loss with NMRA-215 with incretin-like induction

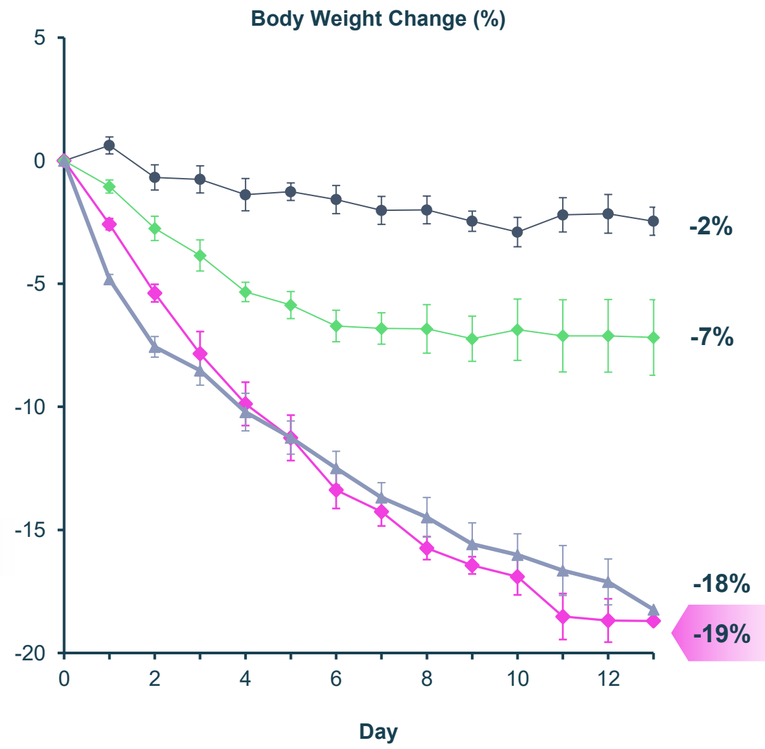
STUDY 1 Pilot Study



STUDY 2 Full DIO Study



STUDY 3 Induction Confirming Study*

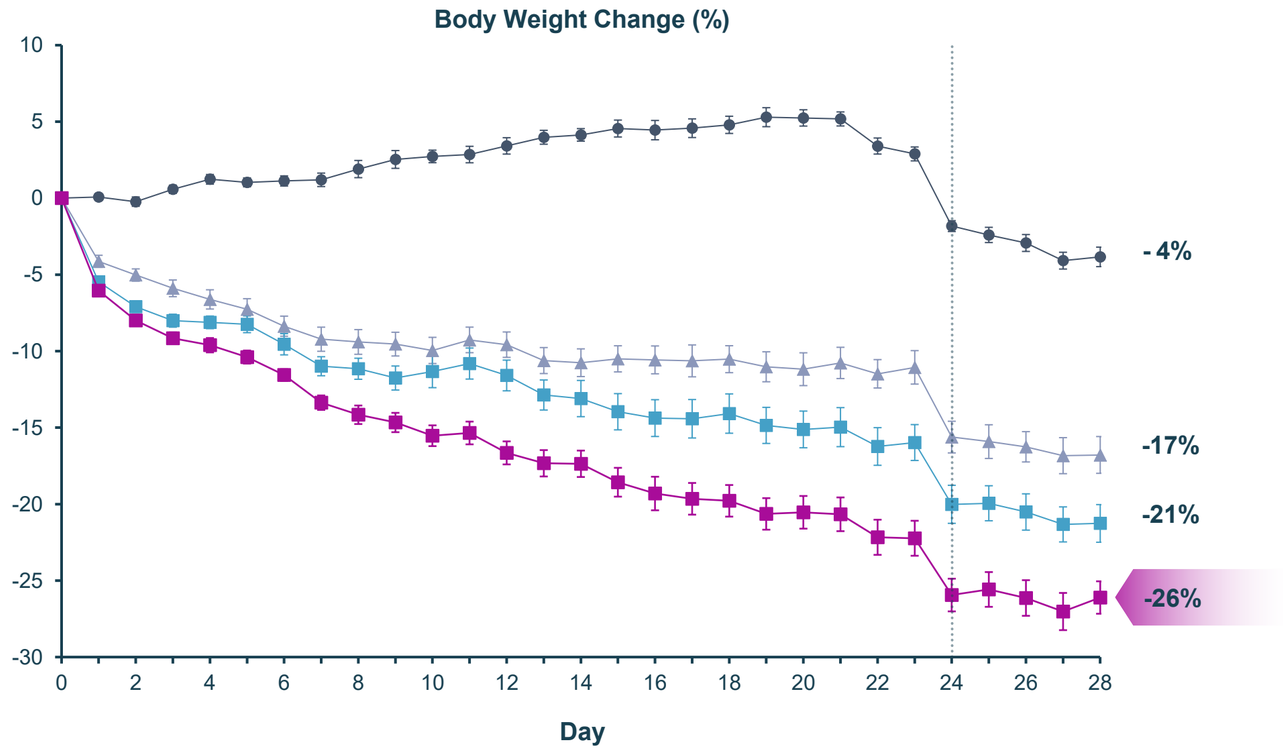


Vehicle | NMRA-215 Low Dose | NMRA-215 Mid Dose | NMRA-215 Target Dose | semaglutide 1 nmol/kg | semaglutide 3 nmol/kg

NMRA-215 administered subcutaneously in Studies 1 and 3 and administered orally in Study 2. Semaglutide administered subcutaneously in all studies. In Study 2 beginning on Day 22, mice underwent daily endpoint collections, including behavioral testing, MRI, and fasting on day 24 to support blood collection Days 25-27. *Study designed to run up to 28 days. Following achievement of study objective confirming incretin-like induction at Day 13, study was stopped due to injection site irritation, which will not be present in the clinical setting, as NMRA-215 is being developed as an oral therapy.

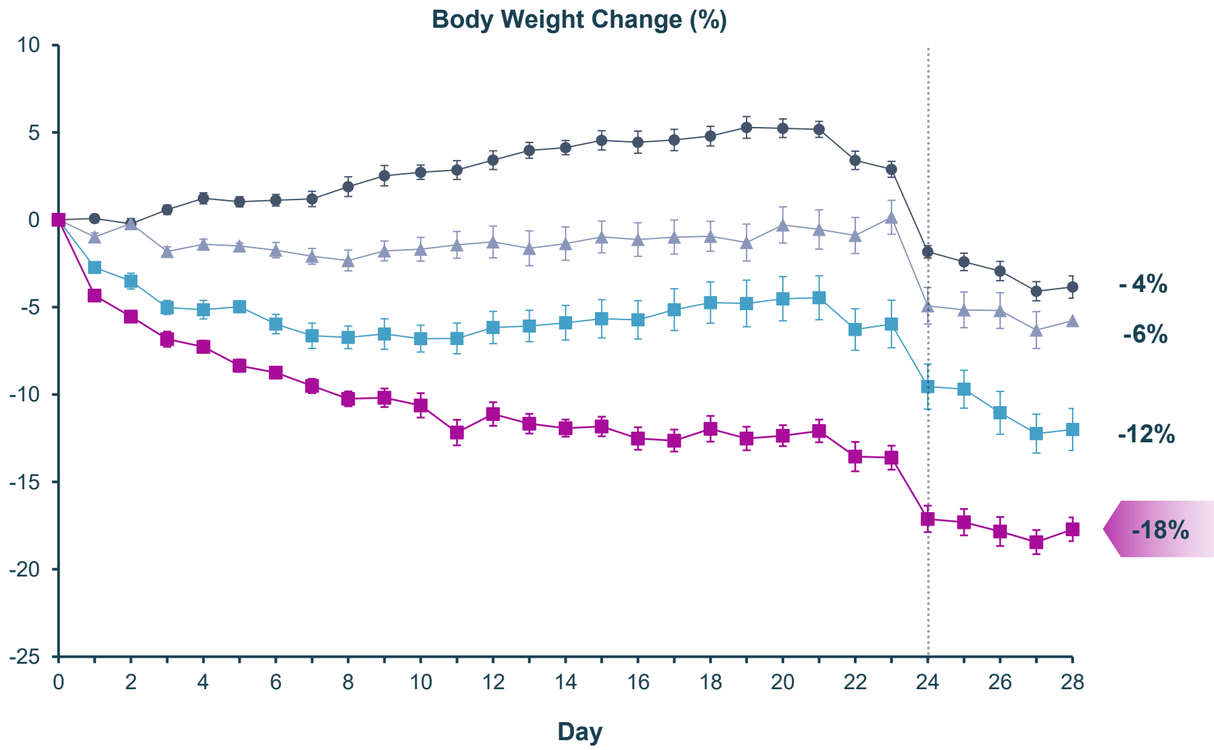
Combination therapy: Up to 26% weight loss with NMRA-215 + semaglutide

NMRA-215 + Combined with 3 nmol/kg semaglutide



Additive weight loss with therapeutically active incretin dose

NMRA-215 + Combined with 1 nmol/kg semaglutide

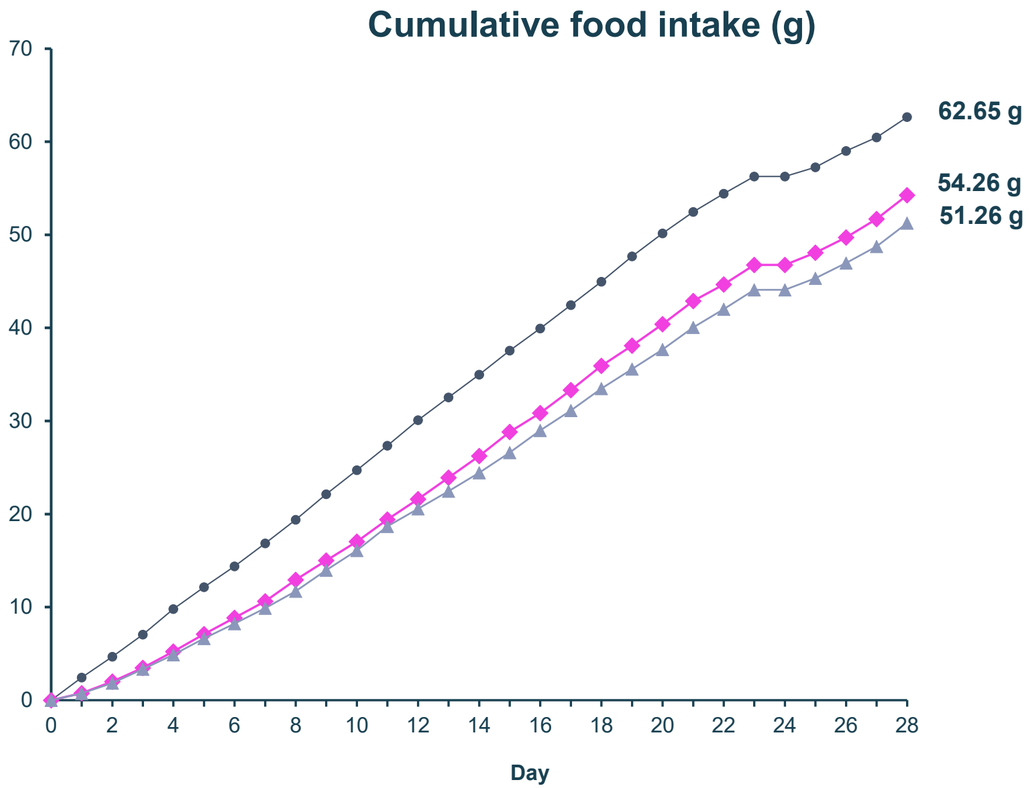


Potential for incretin-sparing combination with better tolerability

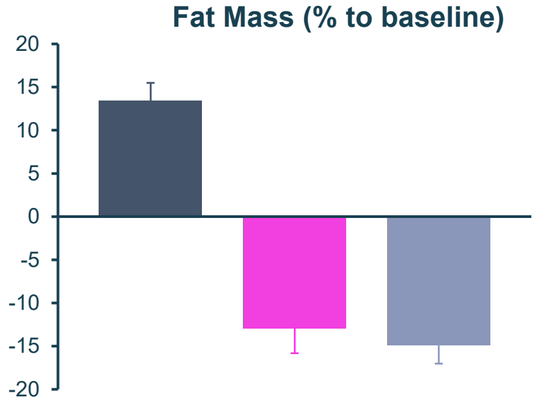
Vehicle | semaglutide | Combination with NMRA-215 Mid Dose | Combination with NMRA-215 Target Dose

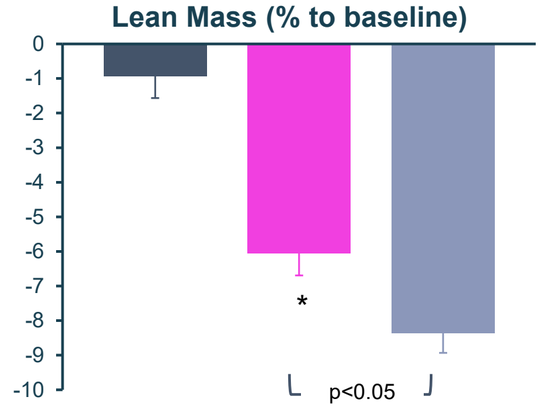
NMRA-215 matches semaglutide weight loss with higher-quality outcomes

Reduced food intake equivalent to semaglutide



Matches semaglutide weight loss, while preserving lean mass



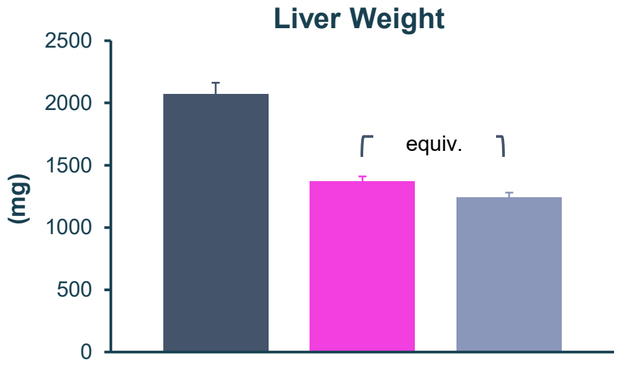


Vehicle | NMRA-215 Target Dose | semaglutide 3 nmol/kg

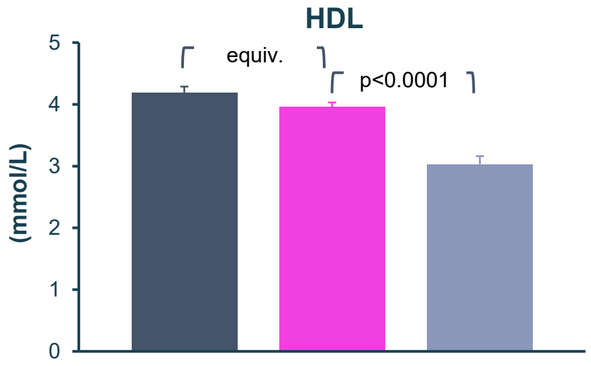
Neumora data on file. *Unpaired t-test, semaglutide 3 nmol/kg compared with NMRA-215 Target Dose

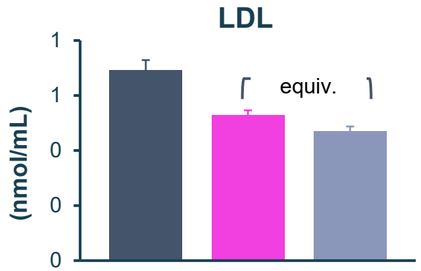
NMRA-215 drove positive results across key biomarkers

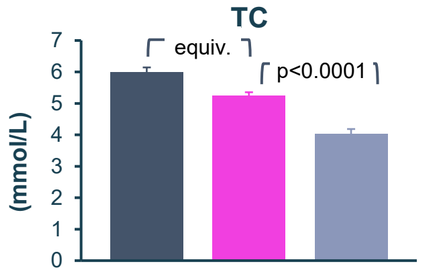
Improved liver health similar to semaglutide



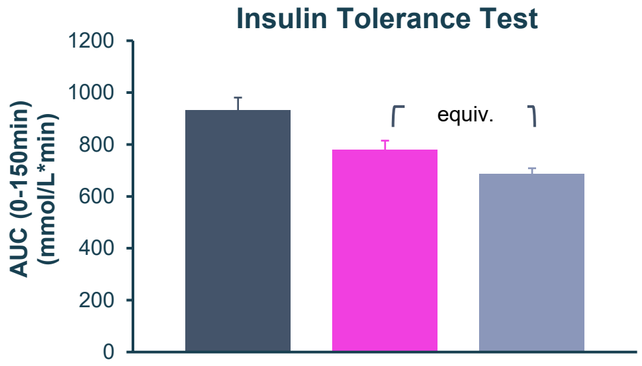
Improved cardiovascular/lipid profile relative to semaglutide







Improved insulin sensitivity

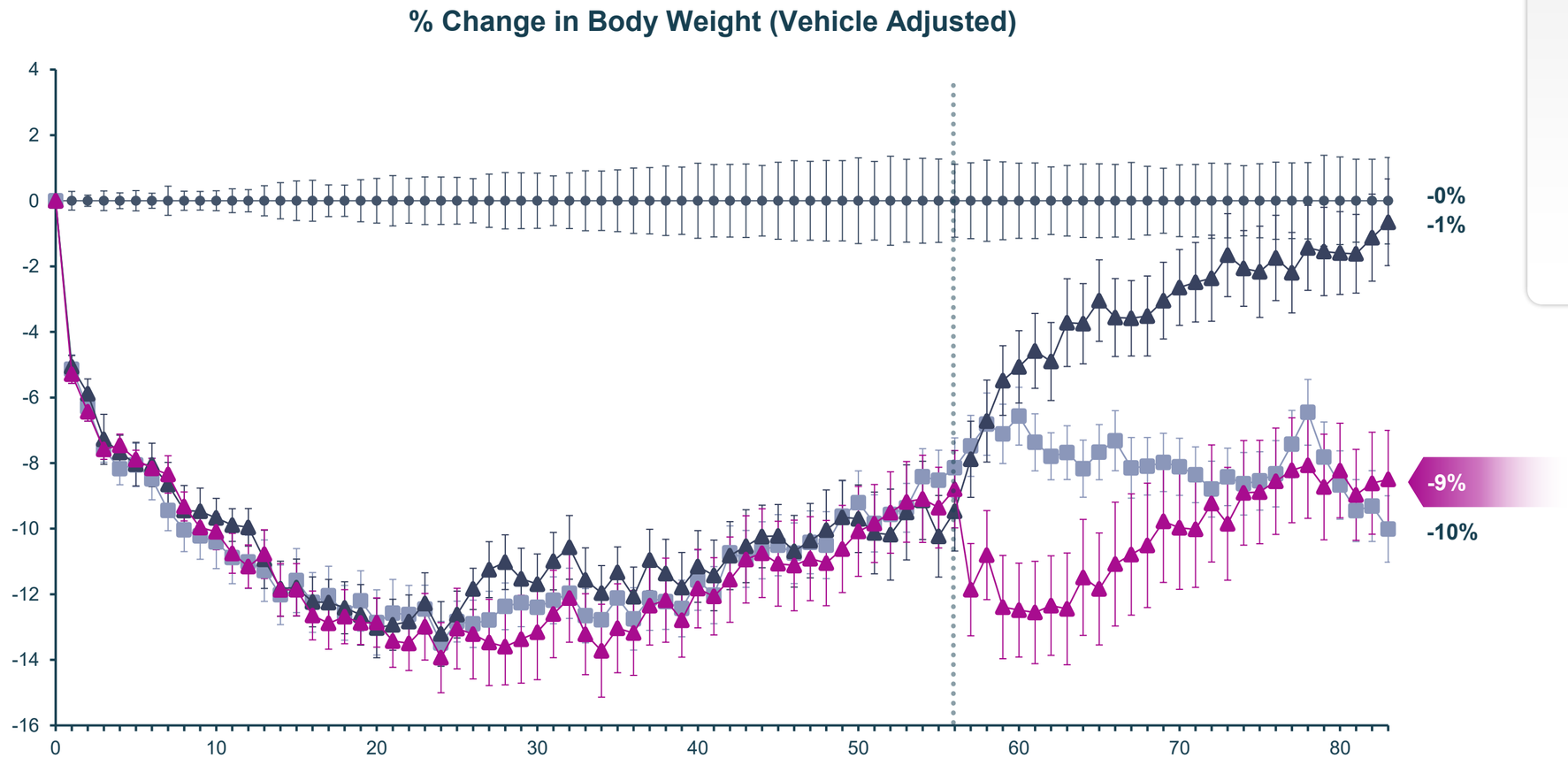


Vehicle | NMRA-215 Target Dose | semaglutide 3 nmol/kg

Equiv. = equivalent. Neumora Data on File.

Sustained weight loss following switching from semaglutide to NMRA-215

12-Week DIO Data | **Full MoA Switch**

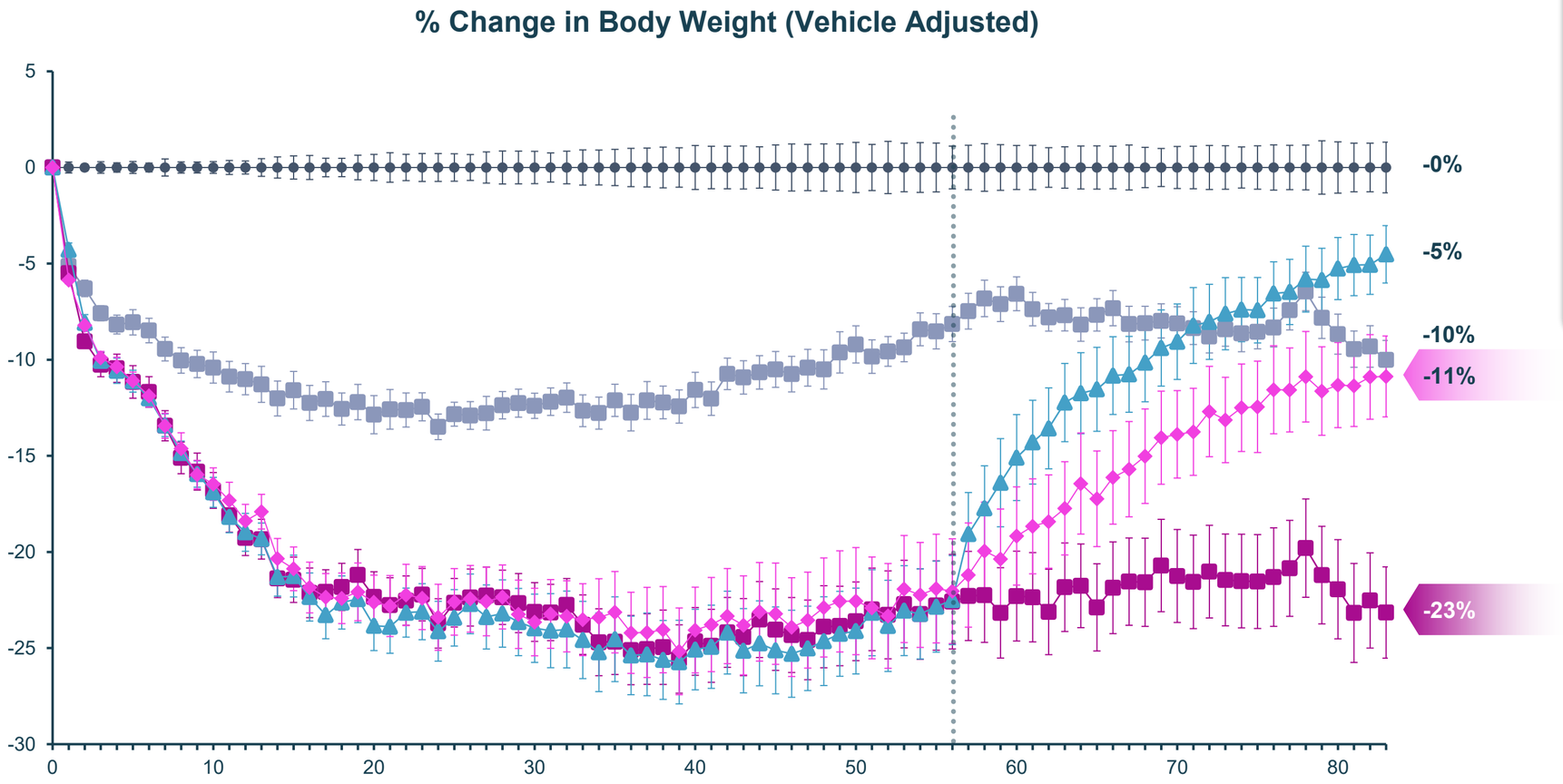


Key Takeaway

NMRA-215 demonstrated sustained, semaglutide-like weight loss at 12 weeks following a switch from semaglutide monotherapy to NMRA-215 monotherapy at week 8

NMRA-215 offers maintenance of weight loss

12-Week DIO Data | **Combination → NLRP3 maintenance**



Key Takeaway

Following switch from semaglutide and NMRA-215 combination to NMRA-215 monotherapy at week 8, DIO mice maintained weight loss similar to mice who received semaglutide monotherapy for the entire duration

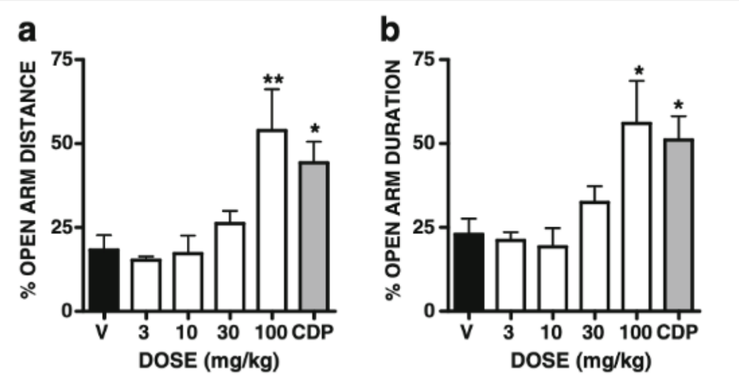
Vehicle | semaglutide | Combination with NMRA-215 Target Dose | Combination → Vehicle Maintenance | Combination → NMRA-215 Maintenance

Vasopressin/V1a receptor (V1aR) mediates anxiety-related behaviors

Robust preclinical data supports V1aR inhibition for treating anxiety in rodents

- V1a knock-out[1] or reduction by siRNA[2] drives reduced anxiety behaviors
- V1aR antagonists reduce anxiety and aggressive behaviors across models[3]
- Lines bred for aggression or anxiety show dysregulated AVP release and HPA axis functioning[4, 5, 6, 7]

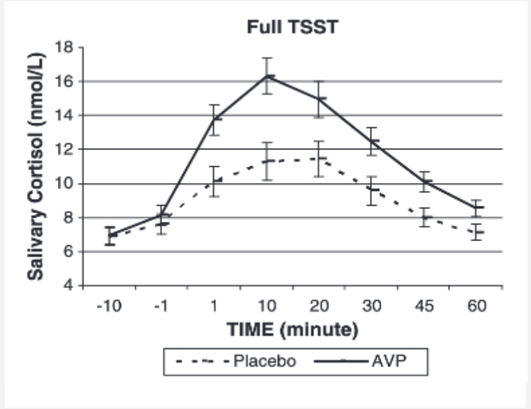
V1a receptor antagonist (JNJ-17308616) reduces anxiety behavior in rat

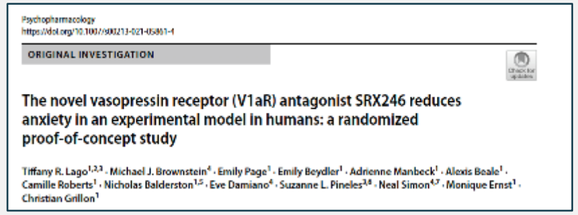


V1a antagonists and vasopressin modulate anxiety and stress related behaviors in humans

- Vasopressin administration exacerbates stress/anxiety behaviors in HVs[1, 2, 3]
- V1a receptor antagonist reduced experimentally-induced anxiety in humans and attenuated aggression in Huntington's disease

AVP increases cortisol response to social stressors (TSST)[1]




Psychopharmacology
https://doi.org/10.1007/s00213-021-05861-1
ORIGINAL INVESTIGATION
The novel vasopressin receptor (V1aR) antagonist SRX246 reduces anxiety in an experimental model in humans: a randomized proof-of-concept study
Tiffany R. Lago[1,2,3] · Michael J. Brownstein[4] · Emily Page[1] · Emily Beydler[1] · Adrienne Manbeck[1] · Alexis Beale[1] · Camille Roberts[1] · Nicholas Balderston[1,5] · Eve Damiano[4] · Suzanne L. Pineles[3,6] · Neal Simon[4,7] · Monique Ernst[1] · Christian Grillon[1]

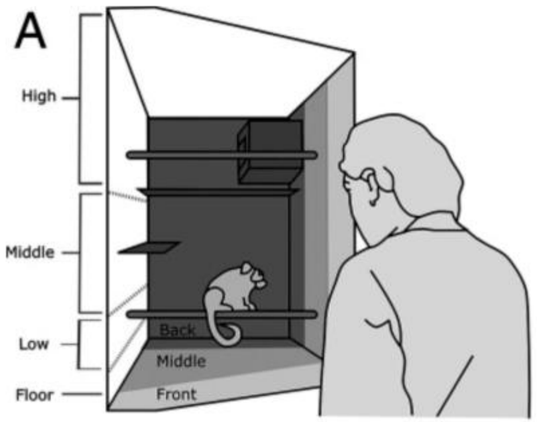

Journal of Personalized Medicine
MDPI
Article
The Vasopressin 1a Receptor Antagonist SRX246 Reduces Aggressive Behavior in Huntington's Disease
Hilda T. Maibach [1,†], Michael J. Brownstein [2,†], Steven M. Hersch [2,3], Karen E. Anderson [4], Debra E. Itzkowitz [1], Eve M. Damiano [1] and Neal G. Simon [1,5,*]

[1]Bielsky et al., 2004, NPP; [2]Barrett et al., 2013, *Horm. Behav.;* [3] Bleickardt et a., 2009, Psychopharmacology; [4]Veenema and Neumann, 2007, Brain behavior, evolution; [5]Zelena et al., 2009 J. Endo; [6]Mlynarik et al., 2007; [7]Fodor et al., 2014, Psychoneuroendocrin.

[1]Shalev et al., 2011, Hormones and Behavior; [2]Thompson et al., 2006, PNAS; [3]Kawada et al., 2019, Sci. Reports;

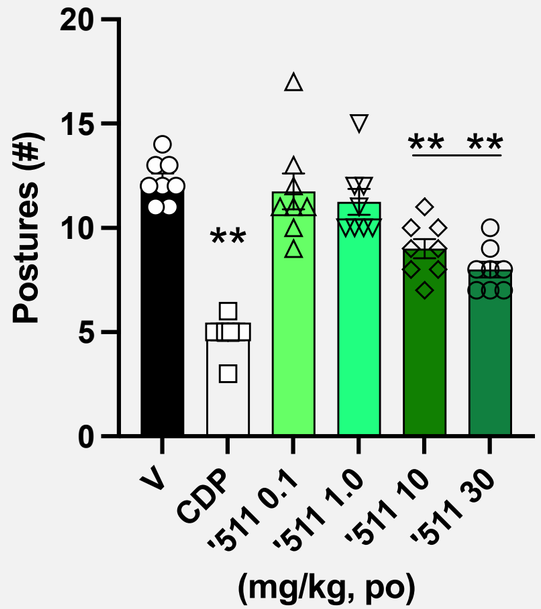
NMRA-511 reduced anxiety-related behaviors in a preclinical human threat test

Human threat test induces anxiety in marmosets[1]

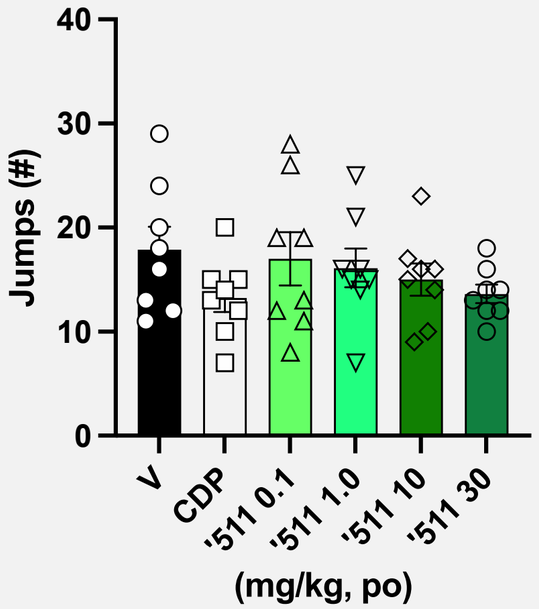


- Based on marmoset's behavioral response to situations of stress/uncertainty
- Set of characteristic postures are elicited
- Clinically effective anxiolytic drugs reduce the number of postures
- Locomotor activity is measured to control for sedative/stimulant effects of drugs

NMRA-511 reduces behavioral response to threat[2]



NMRA-511 does not reduce locomotor activity[2]



Orally administered NMRA-511 (10 and 30 mg/kg) and chlordiazepoxide (CDP, 2 mg/kg, SC) significantly reduced anxiety-related behaviors in marmosets (n=8) as measured by a decrease in the number of threat-elicited postures observed in the HTT without affecting locomotor activity or causing sedation. Testing occurred 90 mins after treatment to coincide with NMRA-511 maximal concentrations. *p<0.05 versus vehicle. Data plotted are mean± SE.

[1]Stawicka *et al*. PNAS 2020 Sep 21;117(40): 25116-25127 [2]Wallace et al., 2022. American College of Neuropsychopharmacology Annual Meeting Poster.

Demographics and baseline characteristics

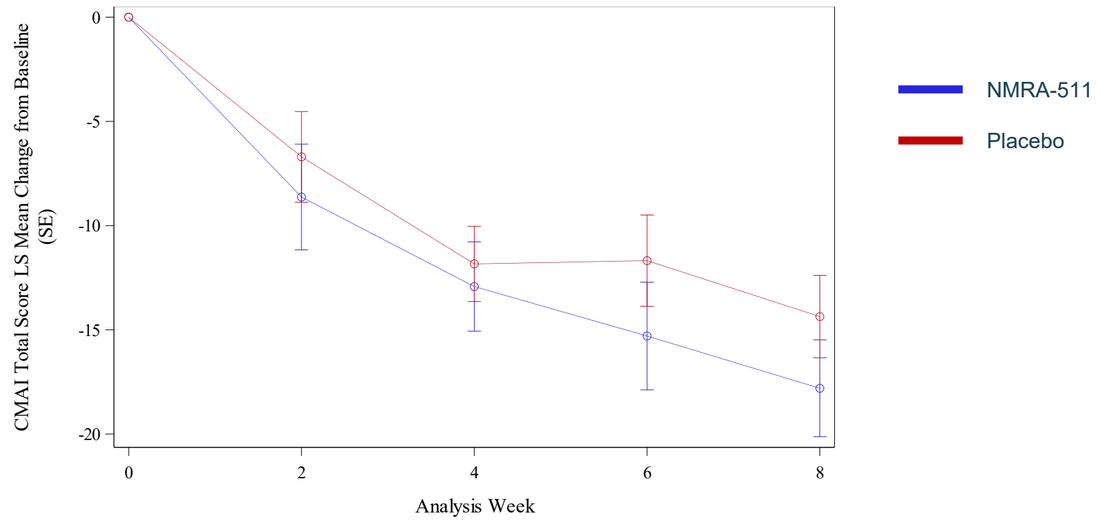
	Total Population		Pre-specified elevated anxiety population[3]	
	NMRA-511 n=40	Placebo n=40	NMRA-511 n=16	Placebo n=21
Mean age	71.8	72.7	66.8	71.6
Sex, n (%) Male Female	 18 (45.0%) 22 (55.0%)	 15 (37.5%) 25 (62.5%)	 7 (43.8%) 9 (56.3%)	 9 (42.9%) 12 (57.1%)
Race, n (%) White Black Asian Other	 27 (67.5%) 10 (25.0%) 2 (5.0%) 1 (2.5%)	 30 (75.0%) 9 (22.5%) 0 1 (2.5%)	 11 (68.8%) 3 (18.8%) 1 (6.3%) 1 (6.3%)	 14 (66.7%) 6 (28.6%) 0 1 (4.8%)
CMAI Total Score Mean (SD)	68.2 (14.7)	68 (14.3)	69.3 (15.6)	67.7 (14.9)
CGI-S (Agitation) Mean (SD)	4.3 (0.7)	4.2 (0.6)	4.4 (0.8)	4.3 (0.6)
NPI-AA Mean (SD)	5.1 (2.5)	5.9 (2.6)	4.8 (2.7)	5.8 (2.8)
MMSE Mean (SD)	19.0 (3.2)	19.5 (2.8)	19.2 (2.9)	19.4 (2.9)
Baseline anxiety as measured by RAID score (SD)	11.8 (6.4)	14.3 (8.6)	18.3 (4.2)	18.7 (6.5)
Protocol-Defined Medication Non-Adherence[1]	7 (17.5%)	0	N/A	
Modified Analysis Set (n)[2]	33	38		

[1]70% medication compliance required per protocol
[2]2 placebo patients excluded based on rater change driving outlier data (>3 standard deviations from the mean) and protocol-defined medication non-adherent patients
[3]Defined as Rating Anxiety In Dementia (RAID) score ≥12

Data were consistent in the NPI-AA ≥4 population (matching other sponsors enrollment) showing an unsurpassed clinical effect size

CMAI Total Score

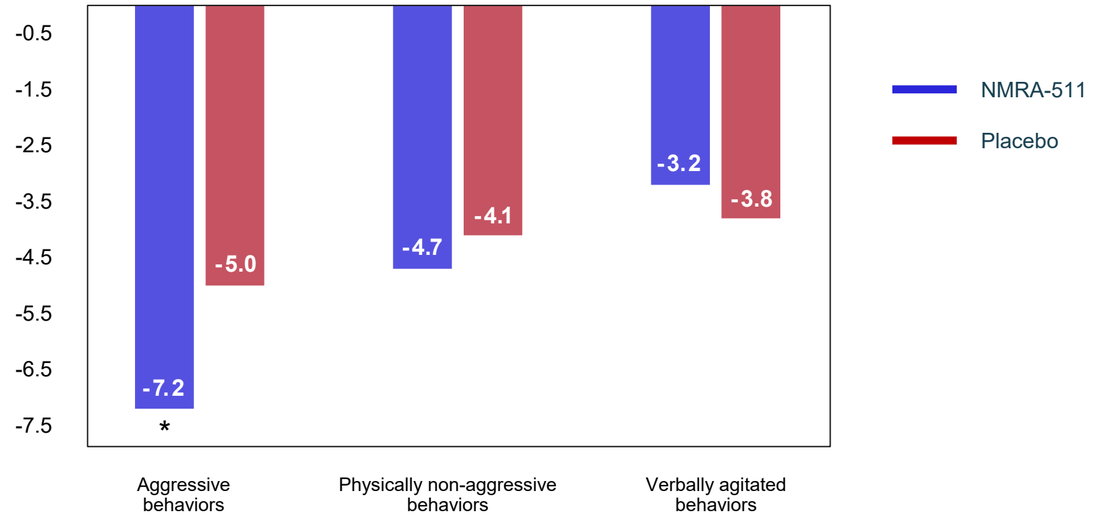
Change from Baseline
(modified analysis set, NPI-AA ≥4)



	Week 6	Week 8
LSMD (SE)	-3.6 (3.4)	-3.4 (3.1)
Effect size (Cohen's d)	0.32	0.34

CMAI Factor Scores

Mean Change at Week 8
(modified analysis set, NPI-AA ≥4)



	Aggressive behaviors	Physically non-aggressive behaviors	Verbally agitated behaviors
Effect size (Cohen's d)	0.51	0.25	N/A

Data presented prespecified NPI-AA ≥4 population
NMRA-511 n=23, placebo n=30
Nominal p-value: *p<0.1

Neumora™

