



Enabling the Nervous System to Repair Itself

Corporate Presentation

January 2025

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NervGen Highlights

Multiple preclinical studies using NVG-291-R reported improvement in **axonal repair, plasticity, and motor, sensory and cognitive function**

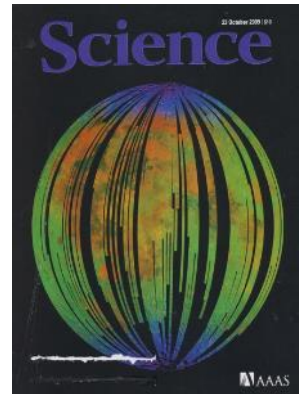
Q1 2025 – NVG-300 preclinical data readout in models of **ischemic stroke, ALS and SCI**

Q2 2025 – Phase 1b/2a proof-of-concept readout in people living with chronic SCI

History of NervGen Technology



Jerry Silver, PhD



Dr. Silver and Harvard collaborators co-discovered that CSPGs bind to protein tyrosine phosphatase sigma (**PTP σ**), a receptor present in the brain and spinal cord, involved in CSPG-dependent inhibition of neuroplasticity



Dr. Silver's team designed a peptide (NVG-291-R) derived from PTP σ shown to relieve CSPG-mediated inhibition of nervous system repair; **NVG-291** is the humanized version of NVG-291-R



NervGen licensed NVG-291 **global rights for development and commercialization** in all indications from Case Western Reserve University with intellectual property protection until 2037

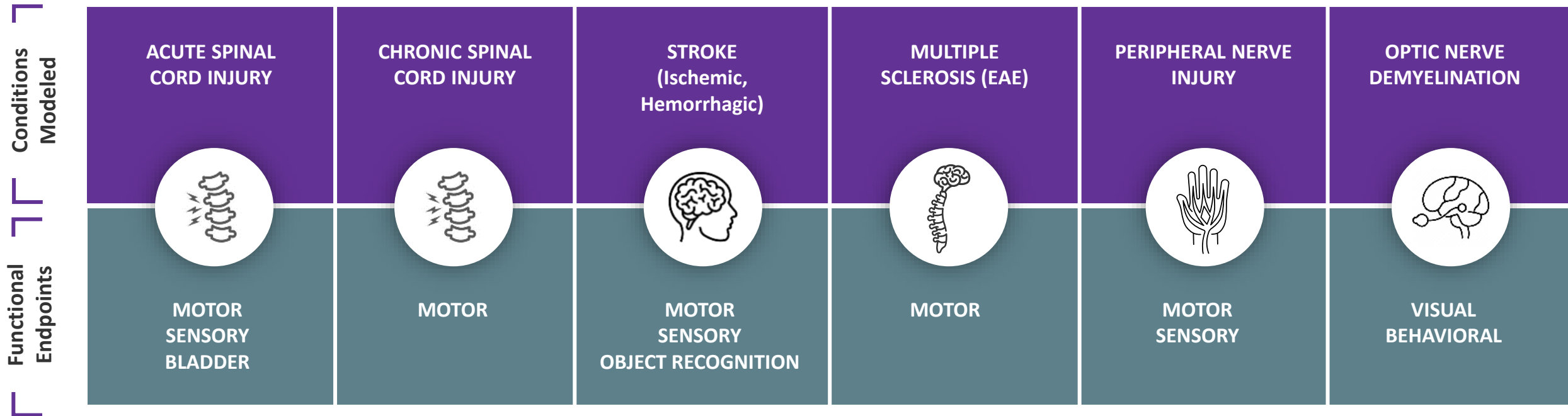
Phase 1b/2a Trial



NervGen initiated a **Phase 1b/2a** placebo-controlled proof-of-concept trial (NCT05965700) to evaluate the efficacy of NVG-291

NVG-291-R Improves CNS/PNS Repair in Preclinical Efficacy Models

Enhanced Plasticity, Repair (Axonal, Myelination), and Recovery of Function



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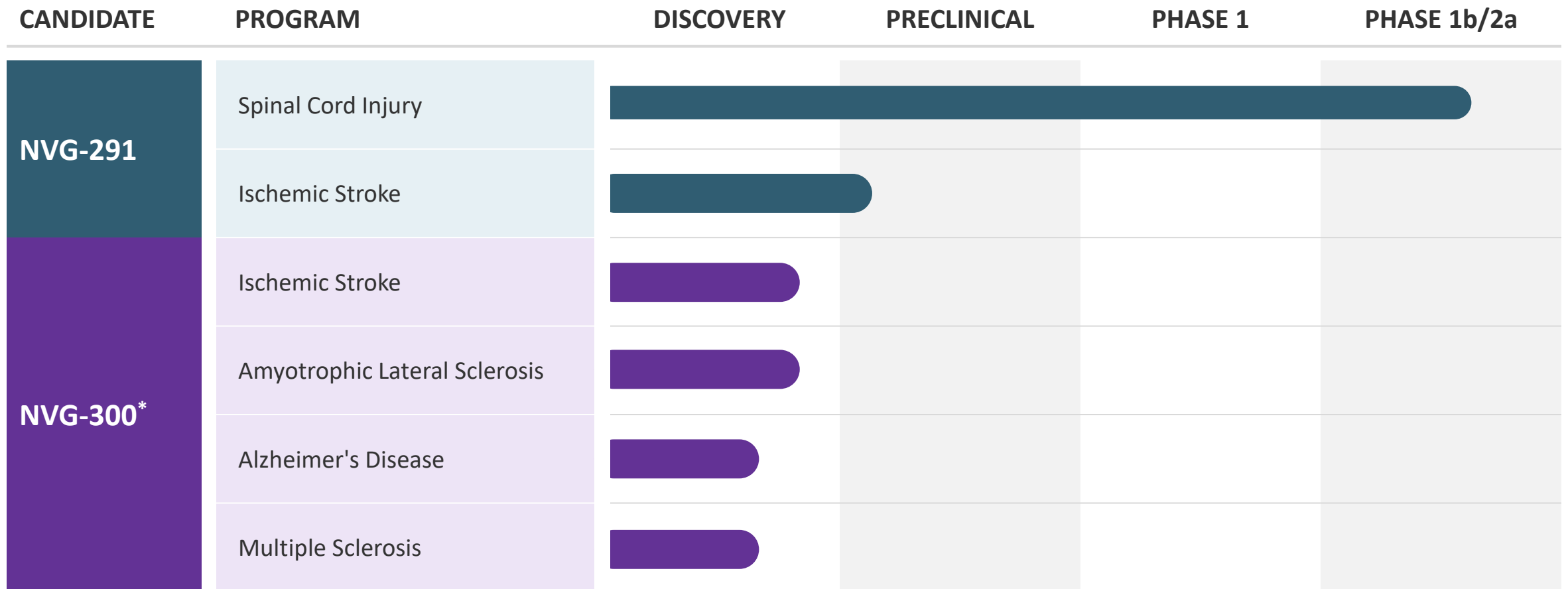
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Product Pipeline

Multiple development opportunities



Markets and Opportunity in Nervous System Injury & Disease

Significant medical costs and morbidity

	 Spinal Cord Injury	 Ischemic Stroke	 ALS	 Multiple Sclerosis	 Alzheimer's Disease
Incidence*	18,000	~690,000	~7,000	10,000	500,000
Prevalence*	291,000	9.4M	~25K-30K	~1M	6.7M
Lifetime Cost*	\$1M-\$4M+	\$140,000+	\$1.4M	\$4M+	\$400,000
System Cost*	\$50B+	\$57B	\$250M-\$1.0B	\$85B	\$320B-\$345B
Current Treatment*	Decompressive surgery and rehabilitation	TPA must be given within hours of stroke; rehabilitation	Disease modifying agents (e.g. riluzole, edaravone) to slow progression – none stop progression	Immunomodulatory/ immunosuppressive therapies to reduce relapses and/or slow progression	Symptomatic therapies (e.g. cholinesterase inhibitors) to temporarily improve cognition; anti-beta mAbs to slow progression
Unmet Needs*	Effective treatments to enhance recovery	Effective treatments to enhance recovery	Treatment that improve function	Treatments to remyelinate axons and improve function	Treatments to effect enduring improvements

* US only

 Depicts current market opportunity of lead indication

SCI Demographics & Characteristics

- Average age: ~43
- Male (78%), female (22%)
- Cause: vehicle (38%); fall (33%); violence (15%); sports (8%)
- Annual hospitalization (30%): UTI, pneumonia, decubitus ulcers
- Duration of hospitalization and rehabilitation: 2 to 3 months
- Chance of depression: 25%
- Significant urinary and sexual dysfunction

TREATMENT

Surgery
(decompression)

Rehabilitation
(regain function)

No FDA approved drugs to enable sustained functional recovery

SCI Facts and Figures

Incidence and Prevalence

~18,000

Spinal cord injuries every year in the US¹

~300,000

People living in the US who have suffered a spinal cord injury in 2019¹

up to
500,000

Worldwide, the estimated **annual incidence** of spinal cord injury²

Economic Impact

Individuals with SCI face a difficult and expensive journey through the healthcare system; that journey begins with **2-3 months in rehabilitation** and costs **\$200,000 or more per patient**³

Individuals with SCI face an expected **lifetime cost of care between \$1M and \$4M**, depending on severity and age at injury⁴

In addition to the enormous economic costs, individuals with SCI face a **shorter expected lifespan, higher unemployment, higher chance of bankruptcy**⁵

(1) NSCSC: SCI Facts and Figures at a Glance; 2019 SCI Data Sheet Accessed May 11, 2023. (2) World Health Organization, Key Facts on Spinal Cord Injury, 2013; <https://www.who.int/news-room/fact-sheets/detail/spinal-cord-injury>. (3) DeVivo MJ, et. Al. Costs of Care Following Spinal Cord Injury, Top. Spinal Cord Inj. Rehab. 2011;16(4):1-9. (4) Cao Y, Chen Y, DeVivo MJ, Lifetime Direct Costs After Spinal Cord Injury, Top. Spinal Cord Inj. Rehab. 2011;16(4):10-16 (5) Merritt CH, Taylor MA, Yelton CJ, Ray SK Economic impact of traumatic spinal cord injuries in the US, Neuroimmunol. Neuroinflammation 2019;6:9

NVG-291-R Promotes Recovery in Acute SCI

Overview

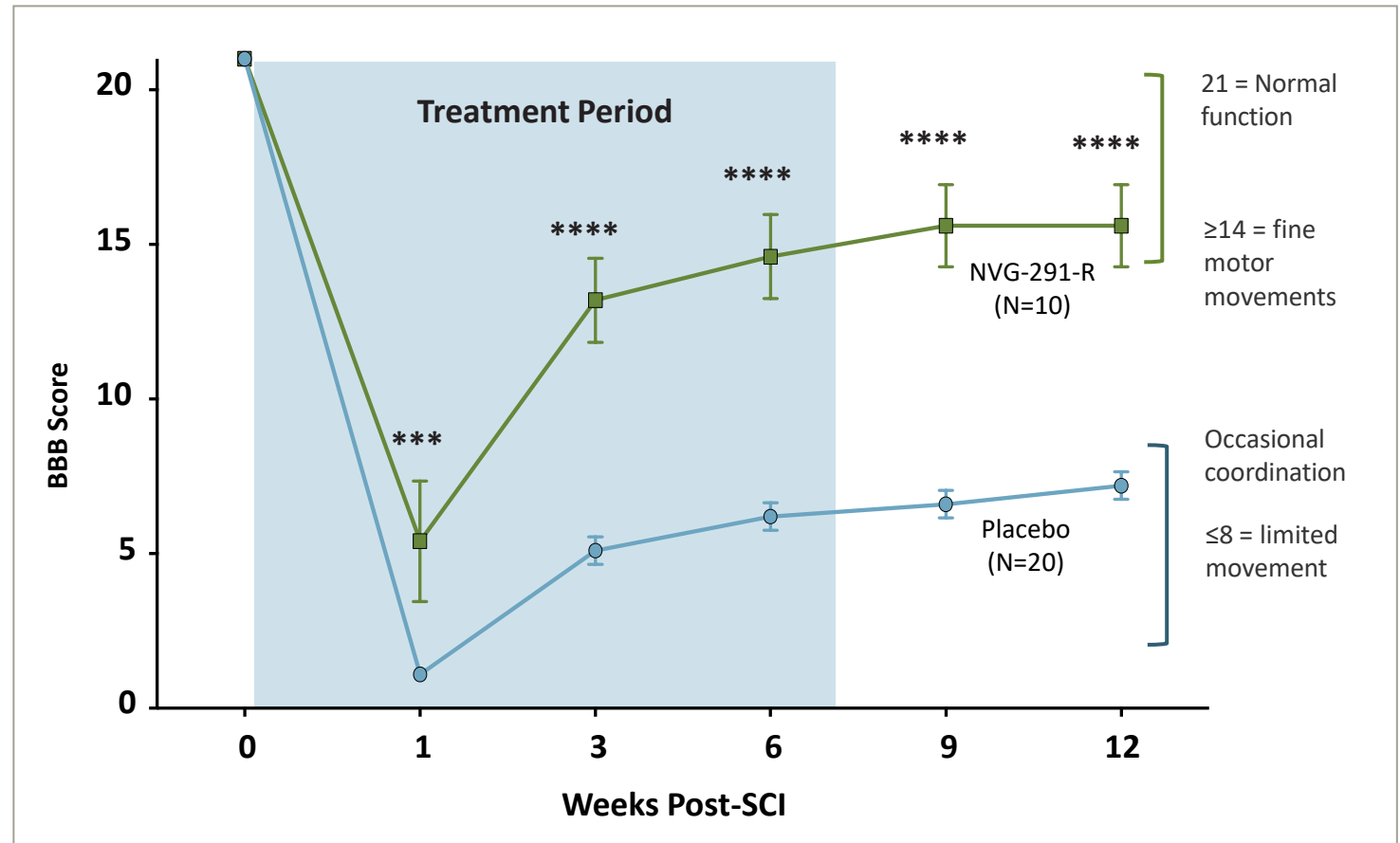
T8 compression injury

- Treatment start: 1 day post-injury
- Dose: 500 µg/day x 7 weeks

Results

- Significant recovery of locomotor and bladder function
- Functional improvements persist after treatment
- Enhanced neuroplasticity (i.e. axonal sprouting) near and far from injury

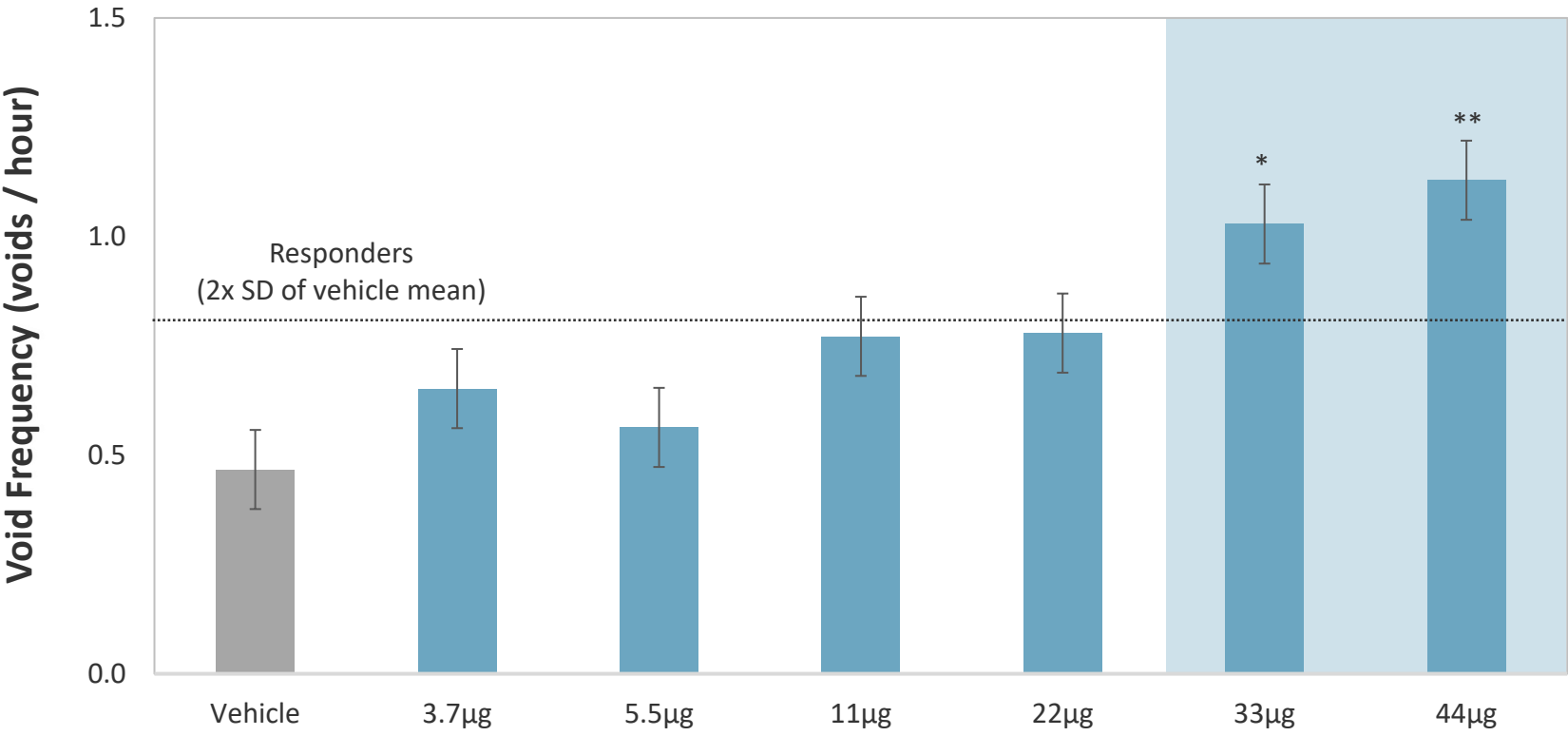
Hindlimb Function



*** P<0.001, **** P<0.0001

Improved Bladder Function After NVG-291-R in Preclinical Models

Bladder Dose Response¹



100%

of animals in the two highest dose groups had improved bladder control function

¹Animals tested at week 12 post-SCI; graphs show group averages

*p <0.05, ** p <0.01, n=5 per dosing group

Bladder function is a key quality of life measure in the paralyzed population

NVG-291-R Improves Function in Severe Spinal Cord Injury Model

Representative of Placebo Group
(Back Legs and Tail Dragging)



Click here to
play video

Representative of NVG-291-R Group
(Back Legs and Tail Active)



Remarkable and robust repair across multiple models

NVG-291-R Enables Significant Motor Recovery in Severe SCI Model

Representative of Placebo Group



Hind legs are immobile in placebo-treated animals



[Click here to play video](#)

Representative of NVG-291 Group



Significant motor recovery with NVG-291-R: consistent coordination, toe clearance, tail held high consistently

Chronic SCI Preclinical Study

Overview

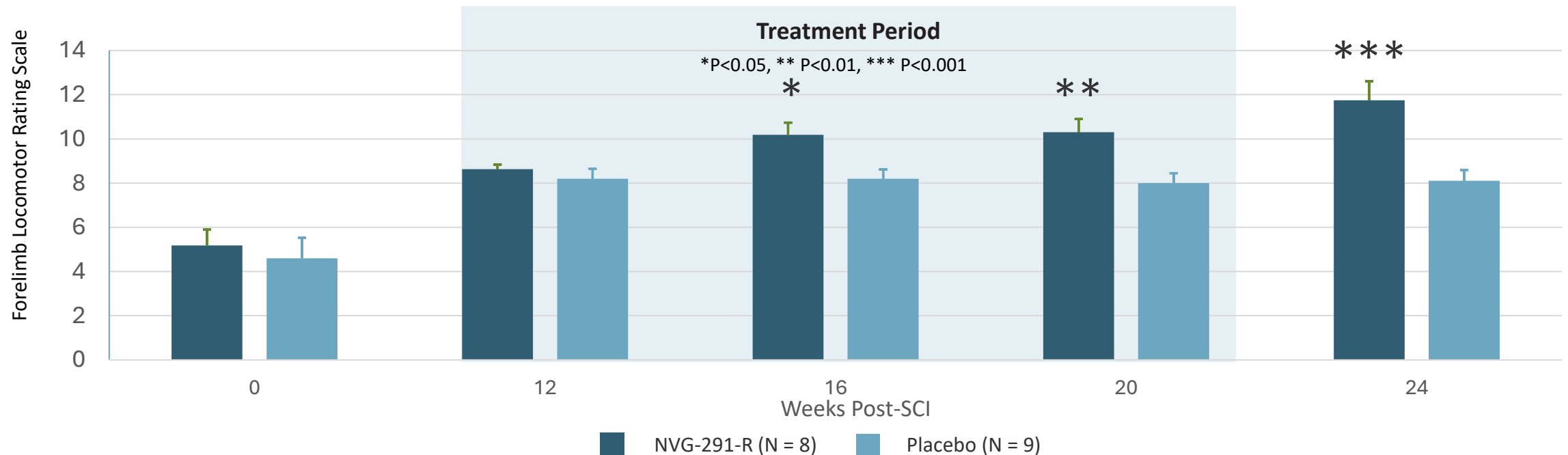
C2 lateral hemisection model of SCI

- Treatment start: 12 weeks post-injury
- Dose: 500 µg/day x 8.5 weeks

Results

NVG-291-R promoted recovery in chronic SCI

- Significant recovery of forelimb locomotor function
- Functional improvements persist after treatment



NVG-291 Phase 1 Clinical Trial in Healthy Volunteers

Study Design

Single Dose

- 37 subjects
- 6 dose levels
- Assessed through Day 8

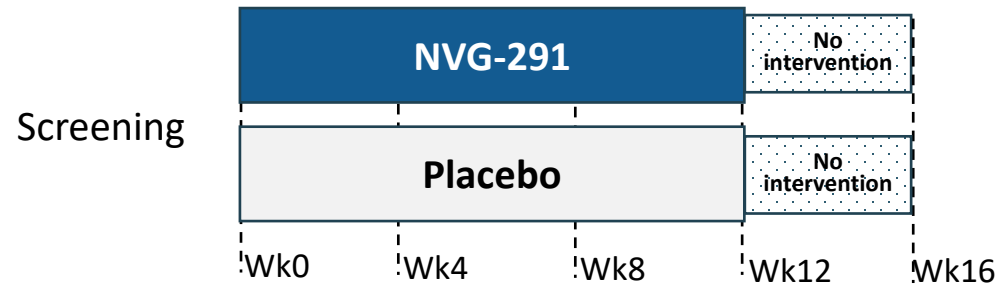
Multiple Dose

- 33 subjects
- 4 dose levels
- Subjects dosed subcutaneously once/day for 14 days
- Assessed through Day 21

Safety Results

- Well tolerated across all doses
 - Maximum tolerated dose (MTD) not reached
- No treatment discontinuations
- No serious/severe adverse events (AE) in NVG-291 group
- Most common AE was Grade 1/2 injection site reactions (ISR)
- No clinically significant effects related to NVG-291 treatment across all study parameters

Phase 1b/2a Trial of NVG-291-201 in SCI



Over 16 weeks

- Daily SQ injections (12 weeks)
- Electrophysiological assessments
- Clinical assessments
- Exercise/training: ~5 days per week

Single-center study – Shirley Ryan AbilityLab (Chicago, IL, USA)

- Uniform assessments and training regimen – reduces variability of results
- Electrophysiological measurements easily standardized – same assessors, equipment, technique

Two cohorts (~N=20 each)

- Randomized 1:1 to NVG-291 (fixed dose) or placebo
- Weeks 1-12: blinded treatment

Phase 1b/2a Study Inclusion & Exclusion Criteria

Key Inclusion Criteria

Age 18-75

Traumatic SCI

Neurological level of injury C7 or higher

Motor incomplete with minimal/maximal level of motor function in upper and lower extremities

*Intact motor evoked potential (MEP)*¹ in two *qualifying* muscle groups:

(1) At least 1 tibialis anterior (TA)

(2) At least 1 first dorsal interosseus (FDI)

Key Exclusion Criteria

Non-traumatic SCI

SCI from gunshot or penetrating/stab injury

Two or more (non-contiguous) spinal cord lesions

Ventilator dependence

Cohorts of motor incomplete cervical SCI

1. Chronic: 1-10 years post-injury
2. Subacute: 20-90 days post-injury

¹Intact MEP = amplitude of at least 50 μ V is observed in at least 5 out of 10 trials

Phase 1b/2a Trial Primary Objective and Co-Primary Endpoints

Primary Objective

To evaluate the effect of NVG-291 compared to placebo on relative percentage change in corticospinal connectivity to *qualifying* muscle groups

Co-Primary Endpoints

Relative percentage change from baseline to Week 12 in the normalized MEP amplitudes (corticospinal contribution) in the *qualifying* **FDI** and **TA** muscle groups

Ten Muscle Groups Assessed	
Upper extremity	Lower extremity
Biceps brachii	Quadriceps
Triceps brachii	Hamstrings
First dorsal interosseous (FDI)^Q	Tibialis anterior (TA)^Q
Flexor carpi radialis	Soleus
Extensor carpi radialis	Abductor hallucis

^Q *Qualifying* muscle group

Assuming a treatment effect on and variability of MEPs similar to that observed with electrical stimulation studies¹, with **8 subjects per arm** this study will have **≥80% power** to detect a difference ($\alpha = 0.025$, Student t-test 2-sided)

Phase 1b/2a Trial Secondary Endpoints (Clinical)

01

Change from baseline to Week 12 in **10mWT** time

02

Change from baseline to Week 12 in **9-HPT** time

03

Change from baseline to Week 12 in **pinch** dynamometry force

04

Change from baseline to Week 12 in **GRASSP** version 2 scores

05

Change from baseline to Week 12 in lower extremity **motor scores**

06

Change from baseline to Week 12 in upper extremity **motor scores**

Other secondary objectives:

Changes in other electrophysiological parameters

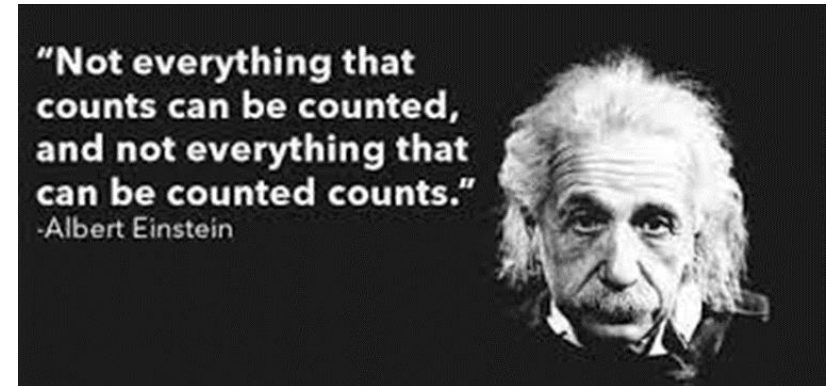
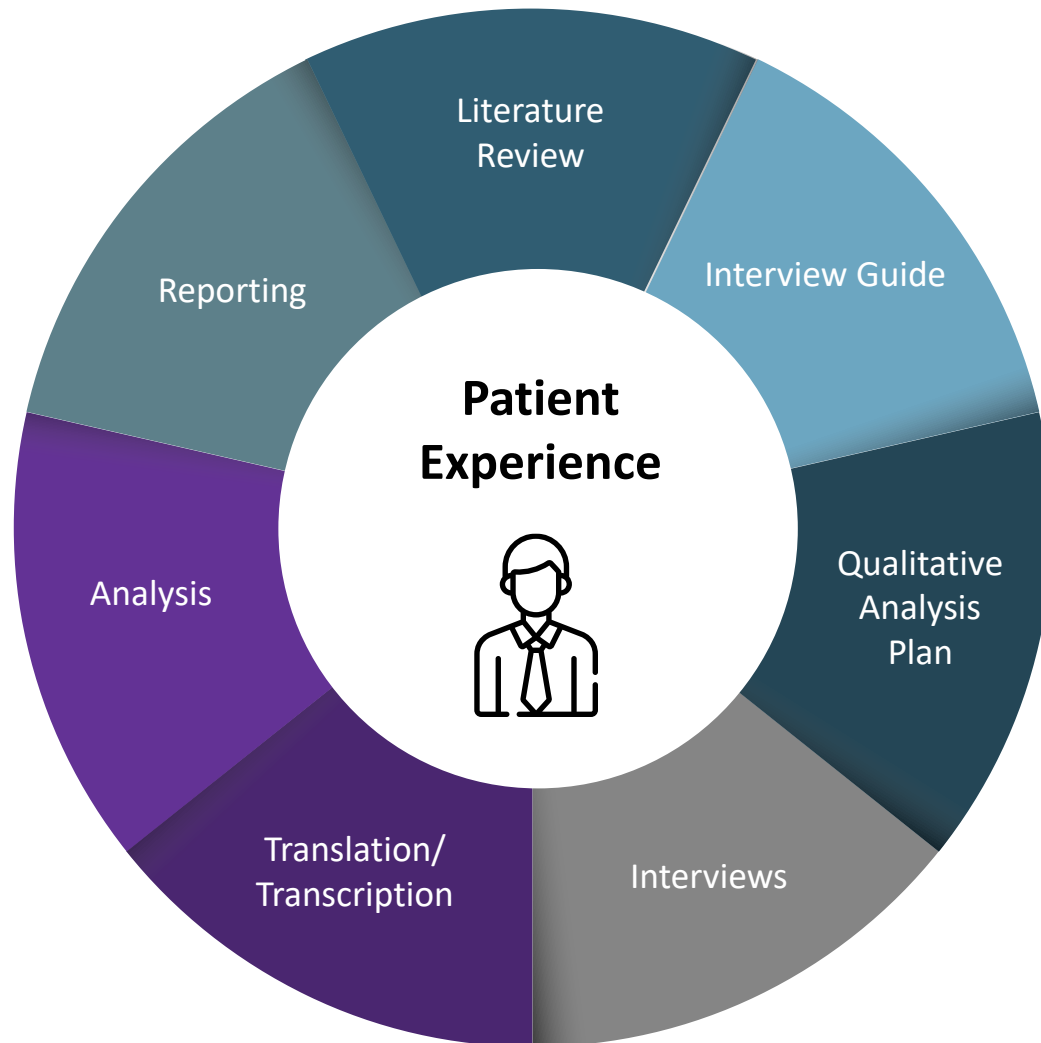
- Change in MEP amplitudes (corticospinal) of non-qualifying muscle groups
- Change in reticulospinal MEP amplitudes
- Change in MEP latencies
- Change in maximal voluntary contractions

Safety/tolerability of NVG-291; pharmacokinetics of NVG-291

Exploratory objectives:

Changes in spasticity (modified Ashworth, pendulum test), SCAR, ISNCSCI sensory scores, autonomic function (ISAFSCI), mobility/ADLs (SCIM III), quality of life (SCI-QOL), advanced MRI imaging, blood biomarkers

Additional Patient-Reported Data: Qualitative Review of Subject Experience



Incorporating qualitative semi-structured subject interviews

Exploring subjects' experiences of potential beneficial treatment

Aligns with FDA Patient-Focused Drug Development Guidance

NVG-300, A Proprietary Molecule Diversifying Pipeline and Opportunity for Partnering

01

A new proprietary molecule discovered at NervGen in 2022

02

Demonstrated favorable pharmaceutical properties (solubility, metabolic stability)

- Severe injury model characterized by heightened spinal cord damage and impaired spontaneous recovery

03

Eligible for the BLA development path

04

Composition of matter IP protection expected to extend beyond 2040

Next steps

Formulation development

Initiating evaluation in preclinical models of ischemic stroke and ALS, confirmatory SCI study

Experienced Leadership Team



MIKE KELLY, MBA, CHIEF EXECUTIVE OFFICER

Over 30 years of pharmaceutical experience. Formerly President of US Ops for Adapt Pharma, Inc., which developed and commercialized NARCAN Nasal Spray in the US and Canada and was sold to Emergent BioSolutions for US\$735 million.



CHUCK OLSON, DSC, SR. VP, TECHNICAL OPERATIONS

Over 40 years of experience in process development, manufacturing and CMC associated quality and regulatory activities for many clinical and commercial products.



BILL ADAMS, CPA, CA, CHIEF FINANCIAL OFFICER

Over 25 years of strategic financial management experience including mergers and acquisitions, operations and capital markets in Canada and the US.



LIZ EBERHARDT, BSC, SR. VP, PROJECT MANAGEMENT

Over 25 years of biotech experience in product leadership and program management and has taken multiple compounds through all stages of development including preclinical and commercialization.



DAN MIKOL, MD, PHD, CHIEF MEDICAL OFFICER

Over 25 years of experience in neurology clinical research. Former Head of clinical development at Amgen in neuroscience and nephrology and was instrumental in the approval of Aimovig, and development lead for Tysabri at Biogen.



MATVEY LUKASHEV, PHD, VP, RESEARCH & PRECLINICAL DEVELOPMENT

Over 30 years of experience in academia, industry and biotech settings focused on translational research and drug discovery.



Board of Directors



Glenn Ives

Chairman
Former Partner, Deloitte LLP



Harold Punnett, DMD

Co-Founder



Mike Kelly

President & CEO, NervGen



Adam Rogers, MD

Former CEO & Co-Founder, Hemera



Brian Bayley

Director, Earlston Investments



Neil Klompas

President & CEO, Augurex



John Ruffolo

Founder & Managing Partner, Maverix



Randall Kaye, MD

CMO, Longboard Pharmaceuticals



Krista McKerracher

Former Global Franchise Head, Novartis



Craig Thompson

CEO, Cerevance

Upcoming Milestones

Q1 2025

Initiate dosing in subacute cohort in Phase 1b/2a proof-of-concept in people living with SCI

NVG-300 preclinical data readout in models of ischemic stroke and ALS

Q2 2025

Phase 1b/2a proof-of-concept readout in people living with chronic SCI

Share and Capital Structure

Exchange/Market: Ticker

TSX: NGEN.V OTCQB: NGENF

Recent Share Price (Jan 6, 2025)

CA\$3.09 / US\$2.14

Shares Outstanding

70.4 million

Fully Diluted

92.8 million (~12.4 million options & retention securities, ~10.0 million warrants*)

Insider Ownership

21.1%

Cash & Cash Equivalents (Sep 30, 2024)

CA\$21.0 million / US\$14.9 million

*Warrant exercise prices between US\$1.75 to CA\$3.00



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