NX210c DRUG CANDIDATE PEPTIDE PROMOTES FUNCTIONAL RECOVERY AND REPAIR IN A RAT CERVICAL CLIP-COMPRESSION MODEL OF SPINAL CORD INJURY

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INTRODUCTION

More than half of spinal cord injuries (SCI) occur at the cervical level, leaving patients with partial to total loss of autonomy. Regaining arm/hand and bladder functions are the most important priorities for cervical SCI (cSCI) patients, yet with no satisfying therapeutic solutions. NX210c peptide is derived from the subcommissural organ-spondin, a glycoprotein involved in axonal guidance during embryogenesis. The aim of this study was to evaluate the efficacy of NX210c to promote functional recovery and repair in a clinically-relevant model of cSCI.

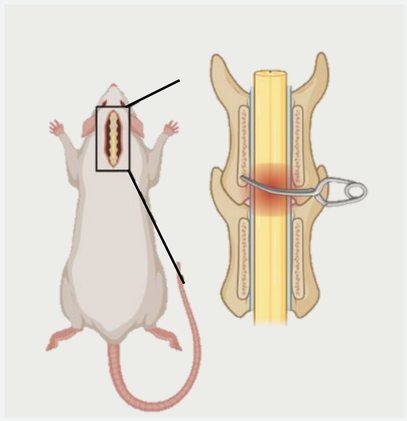
METHODS

NX210c or vehicle from 4h or 8h post-injury, and then once a day, IP 8 mg/kg
N=16-17 for SCI groups + N=12 for sham group – 2 cohorts

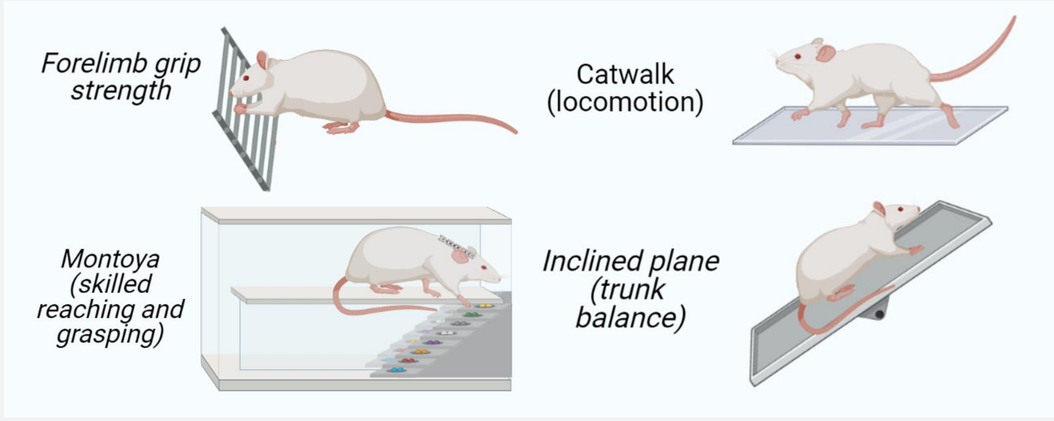
Sacrifice (Day 57)

Day 1 | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8

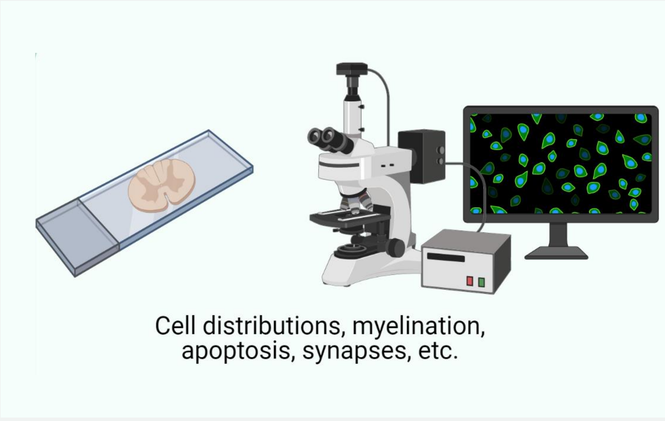
C6 clip-compression



Neurobehavioral tests / weight & bladder monitoring

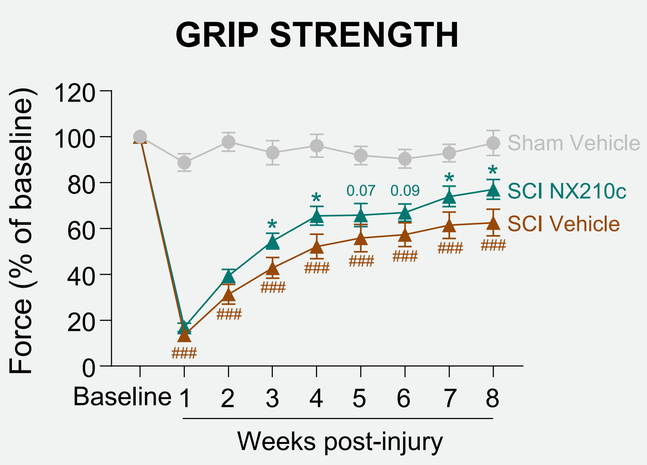


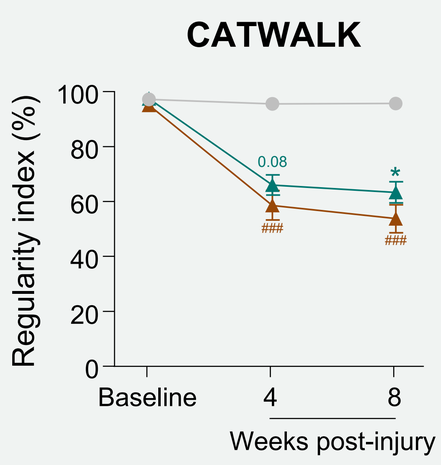
Spinal cord analysis



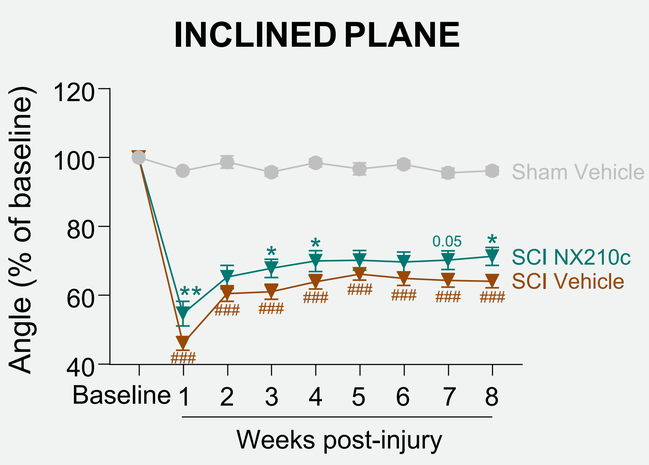
RESULTS

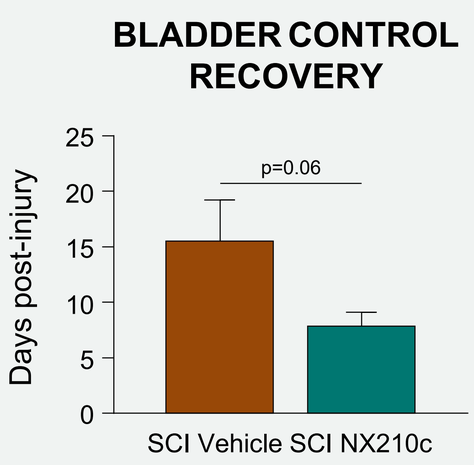
NX210c from 4h: Improvements in forelimb grip strength and multiple gait parameters



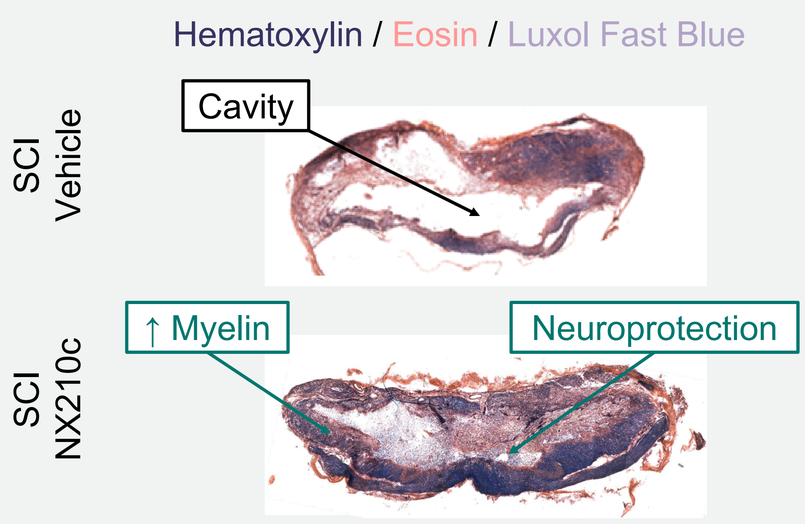


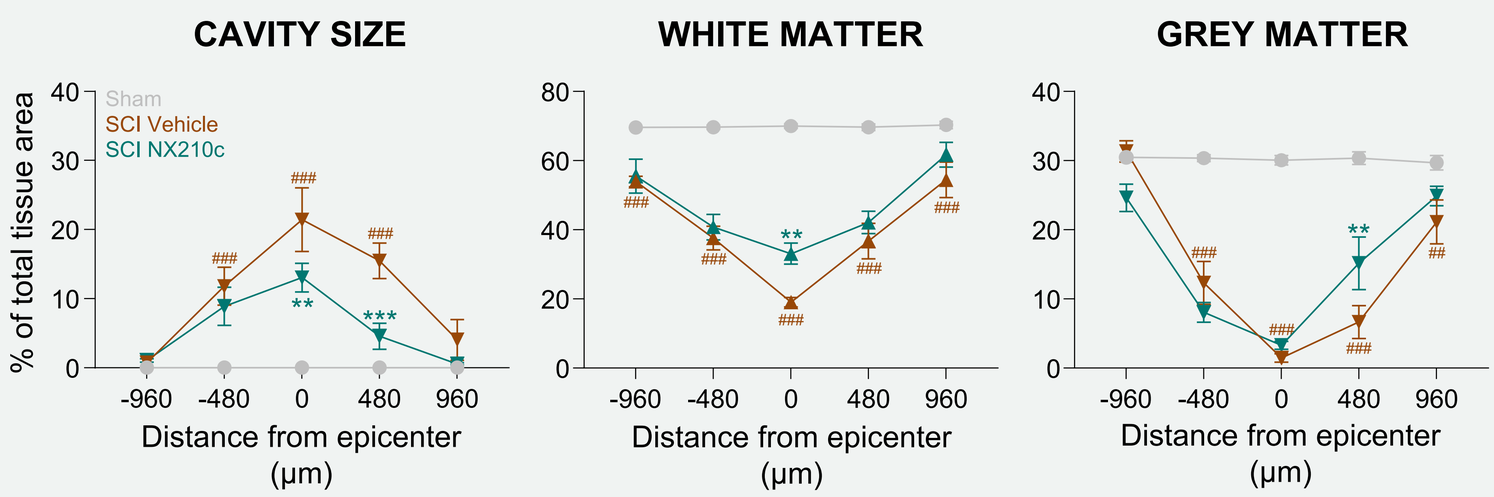
NX210c from 8h: Improvements in trunk balance and quicker recovery of spontaneous bladder function





NX210c from 8h: Neuroprotection and remyelination





###,##p<0.001, 0.01 Sham Vehicle *vs* SCI Vehicle; ***,**,*p<0.001, 0.01, 0.05 SCI Vehicle *vs* SCI NX210c

CONCLUSIONS

NX210c improves motor function, bladder control, and white matter preservation, with more benefits observed at the later initial injection timepoint. Owing the therapeutic effect of NX210c in rat cervical and mouse thoracic SCI models (Dr. C. Geoffroy, Texas A&M), NX210c represents a promising drug candidate for the treatment of patients with acute SCI.

Disclosures: SL is employed by Axoltis Pharma. YG is the CEO and a shareholder of Axoltis Pharma.