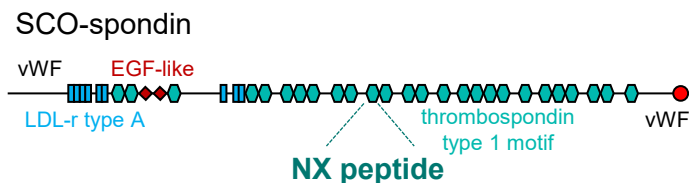


## INTRODUCTION

The subcommissural organ (SCO)-spondin is a brain-specific glycoprotein produced during embryogenesis, that strongly contributes to neuronal development. We have developed a SCO-spondin-derived peptide of 12 amino acids called NX (Axoltis Pharma – France) with pleiotropic properties ensuring neuroprotection and neuroregeneration in CNS diseases and injuries (Le Douce et al., Frontiers in Neuroscience, 2021; Deléage et al., Neuroscience, 2021). Using a mouse hemisection model of spinal cord injury (SCI), we have evaluated the therapeutic effect of NX peptide, an innovative drug candidate to promote repair and functional recovery.



## METHODS

**SCI model and NX treatment.** Female C57Bl/6 mice were subjected to a laminectomy and then a dorsal hemisection of the spinal cord at the thoracic level 8 using a pair of superfine iridectomy scissors at a depth of 0.8 mm. SCI mice were treated intraperitoneally twice a week with either vehicle (water for injection) or NX (4, 8, 16 mg/kg).

**Basso Mouse Scale (BMS).** Mice were placed in an open-field for 5 minutes to evaluate ankle movements, stepping pattern, frequency, coordination, paw placement, trunk stability and tail position.

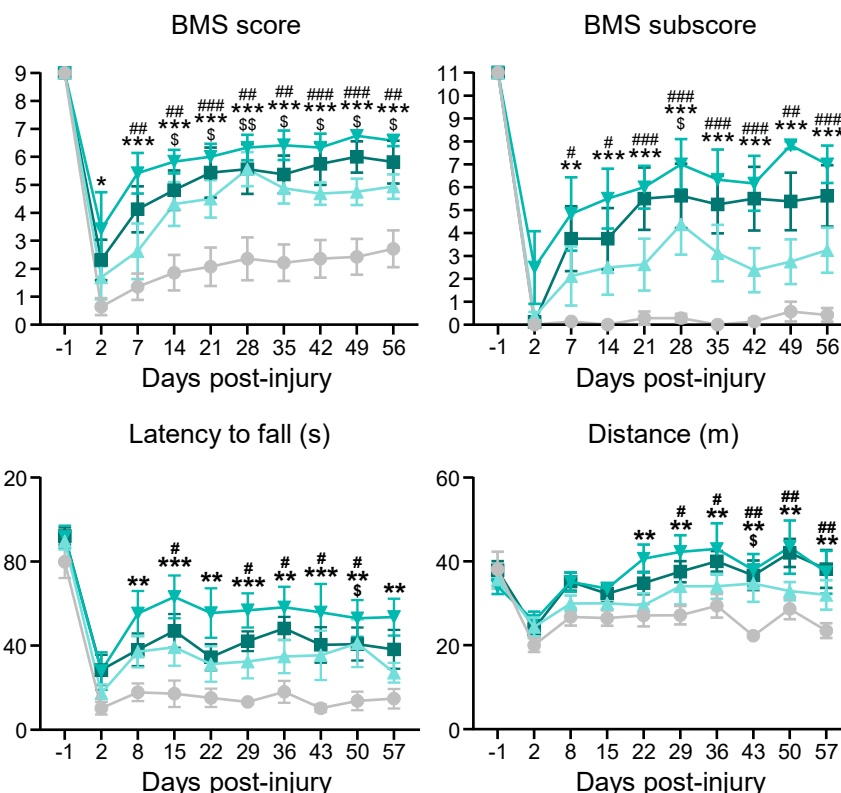
**Rotarod.** SCI mice were placed on a rod rotating with increasing speed (5-50 rpm) during 3 minutes with constant acceleration. The latency to fall was averaged between three trials per session.

**Activity chamber.** SCI mice were placed in an open-field equipped with light beams arrays in the horizontal X and Y axes for 10 min to record their spontaneous locomotor activity.

**Tail flick.** A light was directed onto SCI mice tail with a condenser lens and the time needed for the mice to remove their tail from this aversive thermal stimulus was monitored.

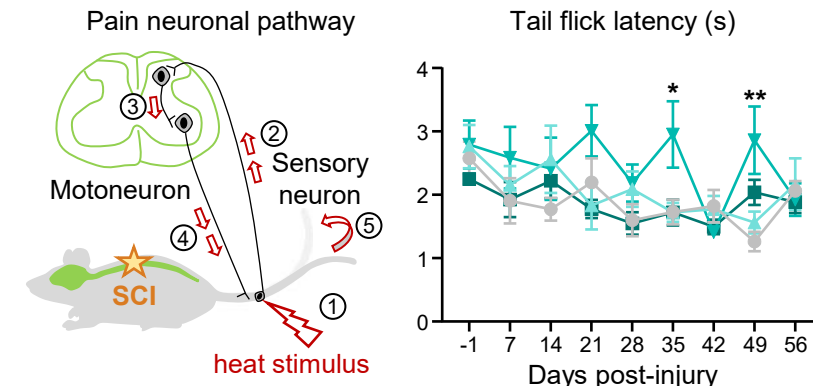
## RESULTS

### NX peptide improves hindlimb motor function after SCI



Two-way ANOVA followed by Bonferroni's post hoc test: \$,\*,#p<0.05, \$\$,\*\*,\$\$\$p<0.01, \*\*\*,###p<0.001 - \$NX 4 mg/kg vs vehicle, \*NX 8 mg/kg vs vehicle, and #NX 16 mg/kg vs vehicle. n=7 vehicle, n=8 NX 4 mg/kg, n=6 NX 8 mg/kg and n=8 NX 16 mg/kg.

### NX peptide prevents SCI-induced thermal hyperalgesia



Two-way ANOVA followed by Bonferroni's post hoc test: \*p<0.05, \*\*p<0.01 NX 8 mg/kg vs vehicle. n=7 vehicle, n=8 NX 4 mg/kg, n=6 NX 8 mg/kg and n=8 NX 16 mg/kg.

## CONCLUSION

NX peptide is a promising drug candidate that significantly promotes **sensorimotor and motor recoveries in a preclinical model of SCI**. We will now determine how NX promotes functional recovery by investigating its effect on critical aspects of SCI pathophysiology. Furthermore, we are currently investigating the therapeutic effect of NX in a clip-compression cervical SCI model in rats. NX is already produced under cGMP regulation and ready for testing in human patients – a first-in-man human phase 1 clinical trial in healthy volunteers has recently shown the safety and tolerability of this drug candidate.

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**Disclosures:** SL, ND, and JLD are employed by Axoltis Pharma. YG is the chief executive officer and a shareholder of Axoltis Pharma