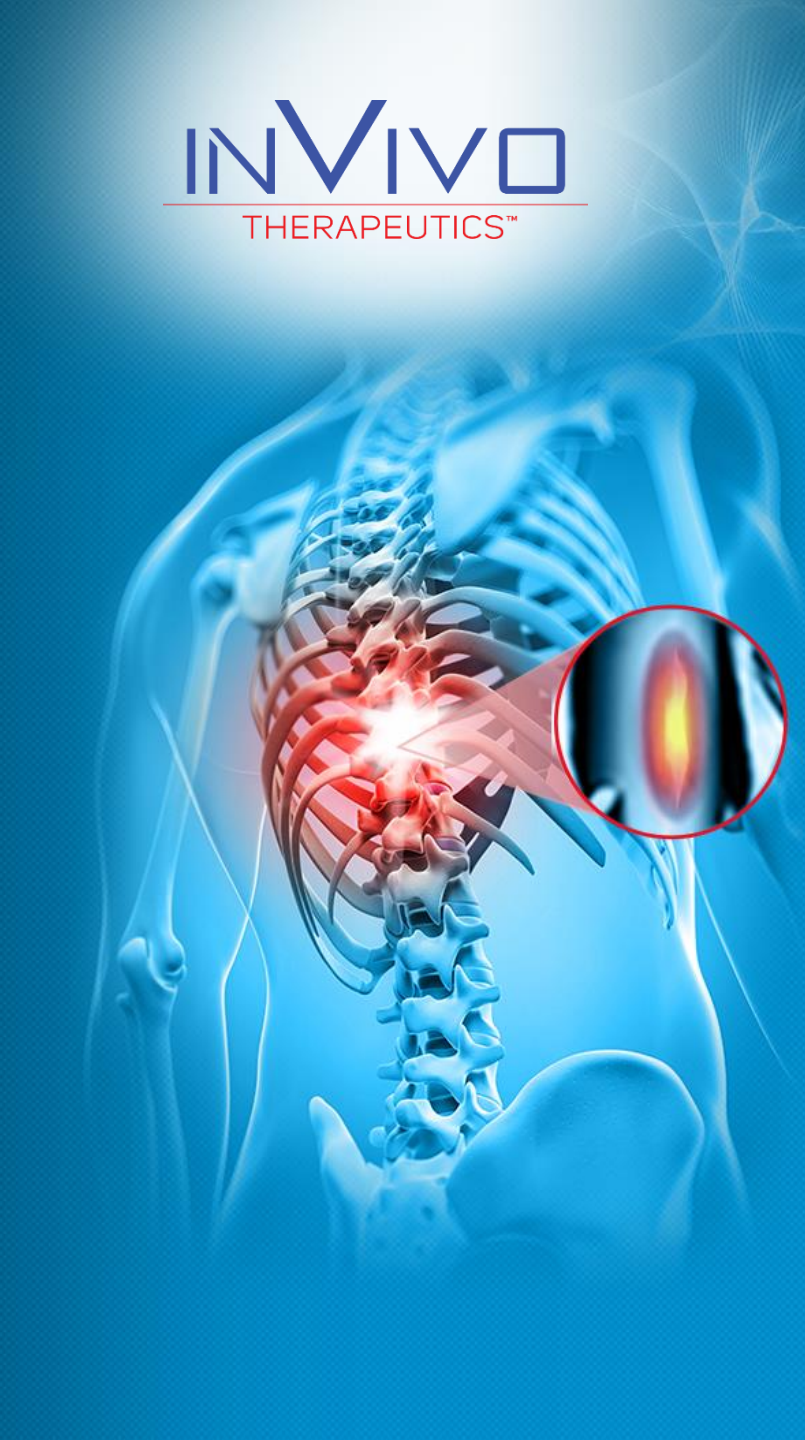
INVIVO THERAPEUTICS™



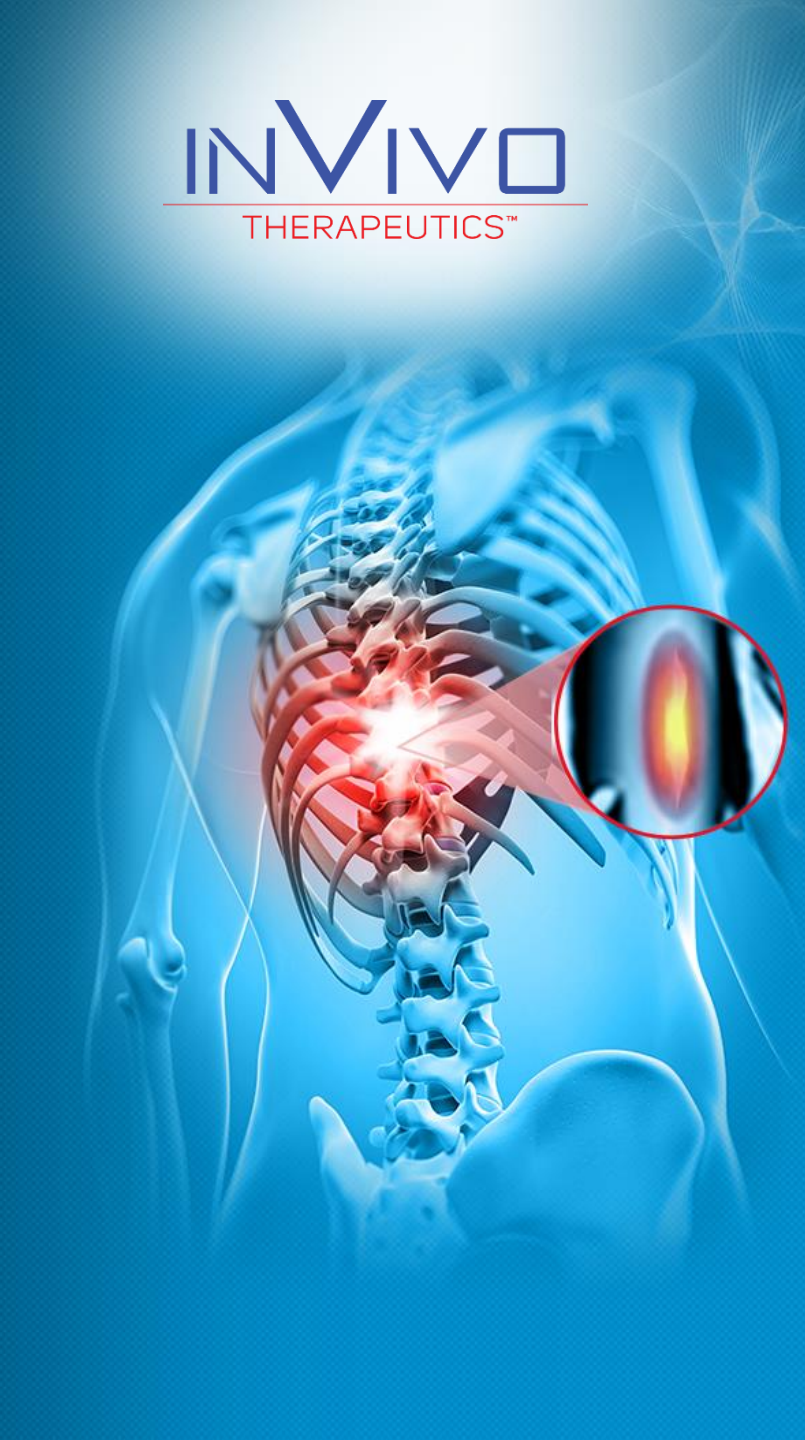
InVivo Therapeutics

Developing Innovative Products for Spinal Cord Injury

Forward-Looking Statements

Before we begin, we would like to remind everyone that during our presentation, we will be making forward-looking statements about our business, plans, and objectives. These statements are based on how we see things today. These statements can be identified by words such as believes, estimates, expects, or similar references to the future, and include statements we may make regarding our product development strategy, business prospects, and clinical and operational milestones. We wish to caution you that actual events or results may differ materially from those expressed in forward-looking statements made by us or on our behalf. For more information on the many factors that can result in actual performance differing from our forward-looking statements, please see our filings made with the SEC, including our 2015 Annual Report on Form 10-K filed on March 4, 2016 and our Quarterly Reports on Form 10-Q filed on May 6, 2016 and August 4, 2016.

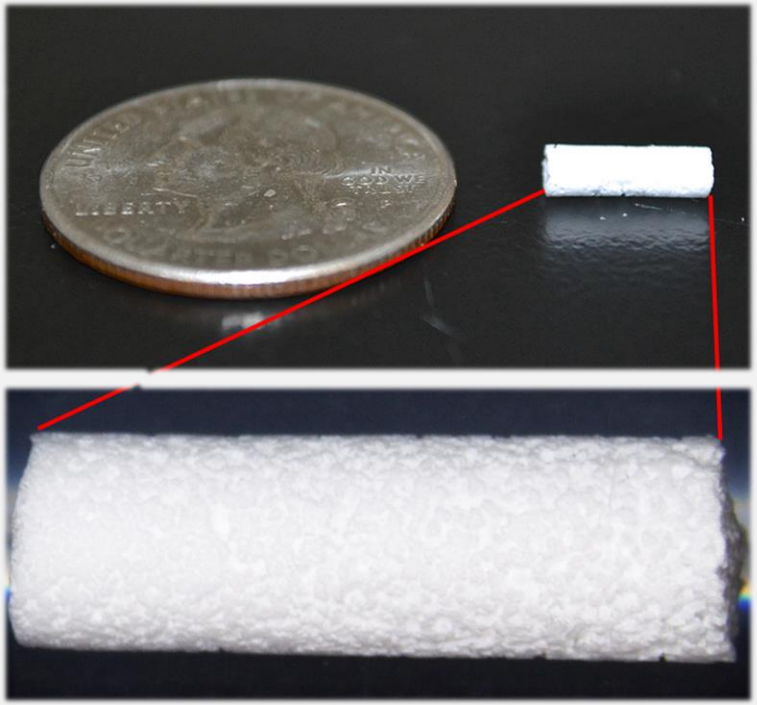
INVIVO THERAPEUTICS™

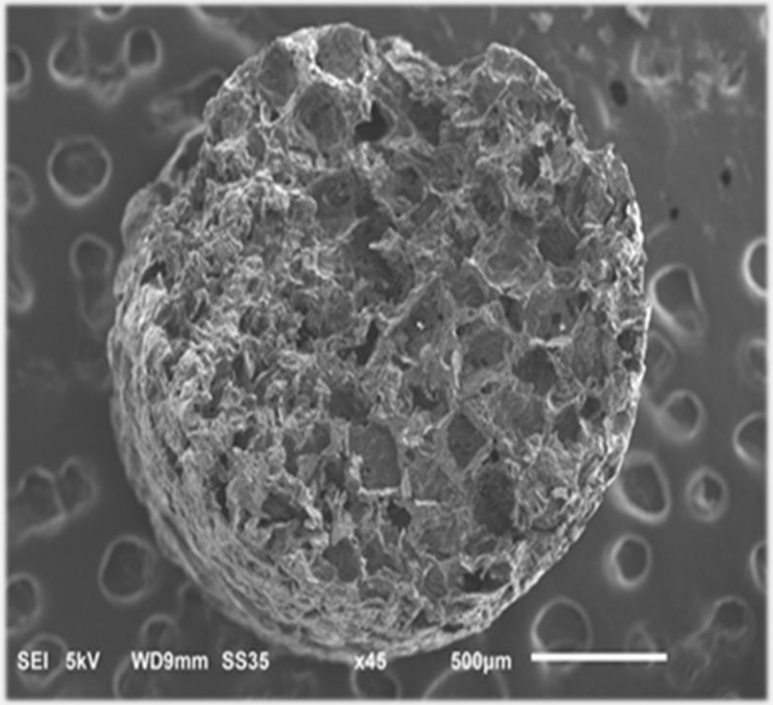


Neuro-Spinal Scaffold™ for Acute SCI

Designed to Promote Healing in Spinal Cord Injury

InVivo's Pioneering Clinical Approach for Acute SCI: The *Neuro-Spinal Scaffold*™



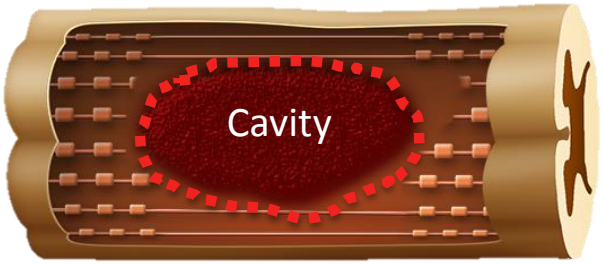


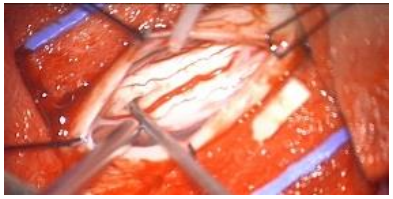
- Highly porous biopolymer *Neuro-Spinal Scaffold*
- Composition:
  - PLGA is the biodegradable skeleton along which cells can grow
  - Poly-L-Lysine promotes cellular adhesion

Company images

Two Types of Spinal Cord Injury: Closed (Contusion) vs Open (Compound) Injury

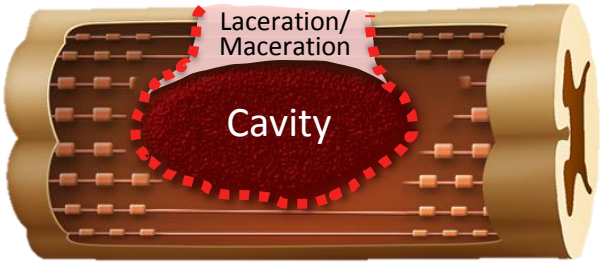
Closed (Contusion) Injury

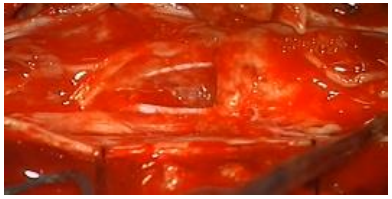




- Outer region of cord is preserved and cord appears intact externally
- Injury leads to cavity filled with necrotic material
- Pressure builds inside the cord, which may lead to further injury
- Preclinical model: contusion injury

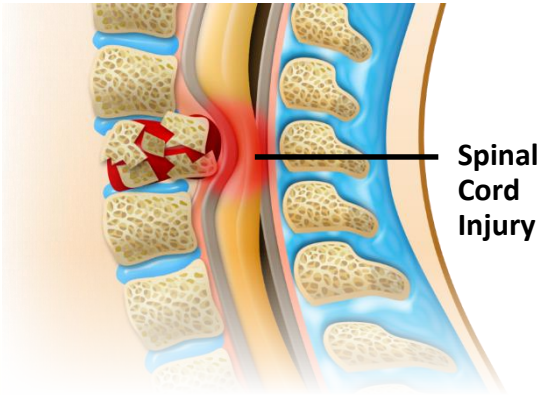
Open (Compound) Injury





- Outer region of cord is breached and injury is visible externally
- Myelotomy (cutting into the cord) may not be required
- Minimal added pressure inside cord
- Preclinical model: hemicordectomy

Progression of Acute SCI to Post-Traumatic Cavity in Contusion Injuries



Hemorrhage & Spinal Cord Swelling

Reduced Blood Flow & Ischemic Necrosis

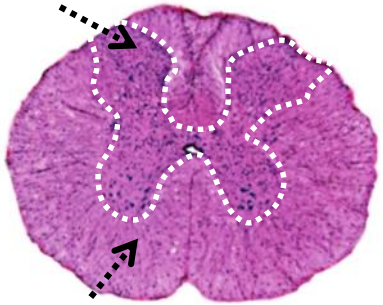
Cavity Development & White Matter Reduction

Chronic injury and mature cavity formation

Time

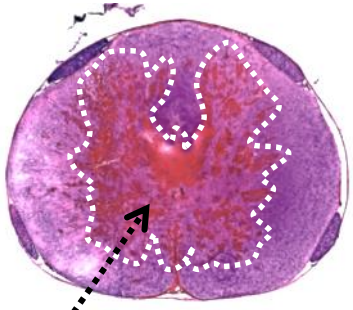
Normal

Highly vascularized gray matter



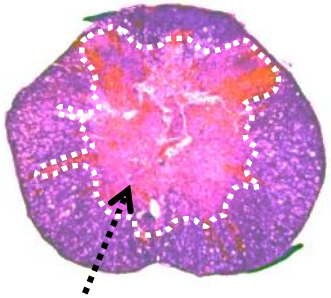
White matter

2 hours after SCI



Acute hemorrhage & necrosis

24 hours after SCI



Liquefactive necrosis

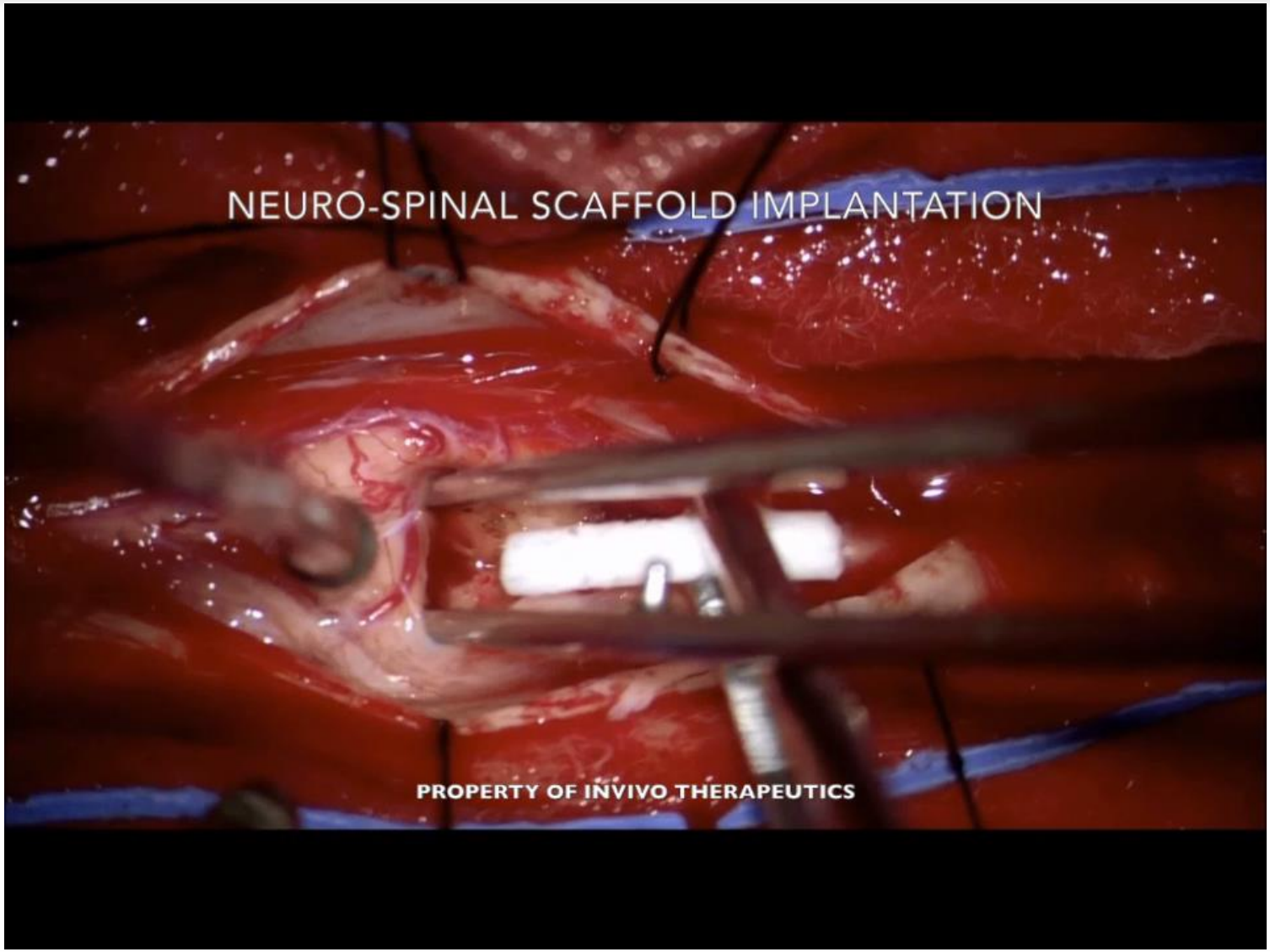
12 weeks after SCI

Mature cavity

Histology from rat contusion model of SCI

Poster D8-06; National Neurotrauma Society 2015 Symposium; Santa Fe, NM.

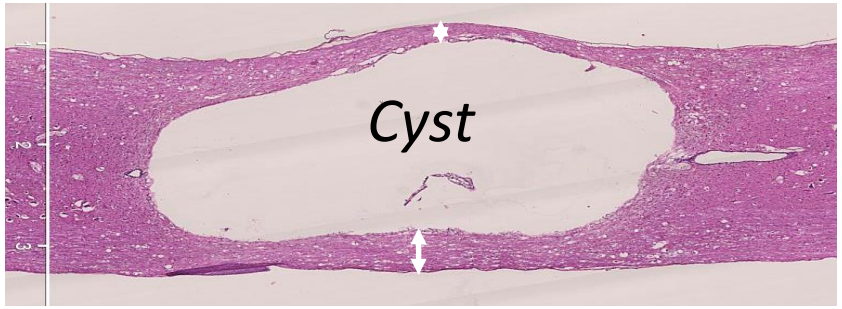
First *Neuro-Spinal Scaffold*™ Implantation in Human Contusion Injury



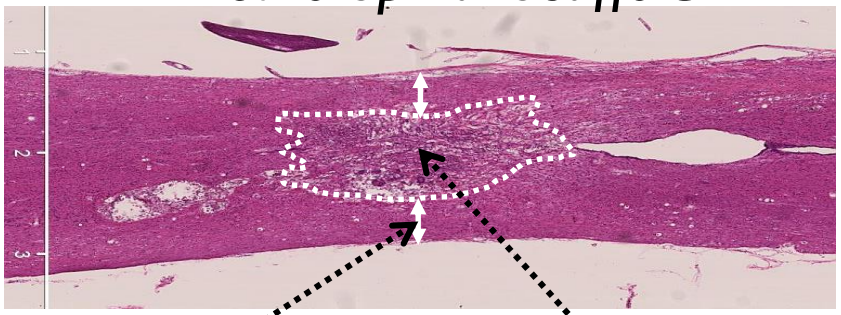
The *Neuro-Spinal Scaffold*™ Preserves Macroscopic Spinal Cord Architecture

Rat Acute Spinal Cord Contusion Injury (at 12 weeks)

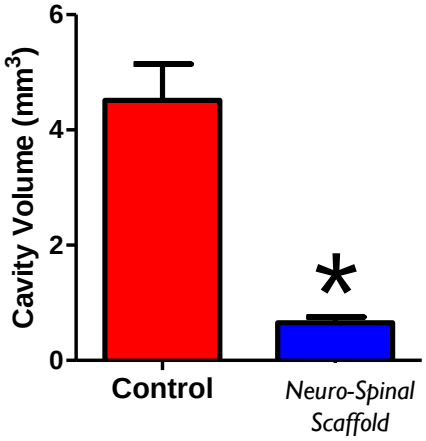
Control



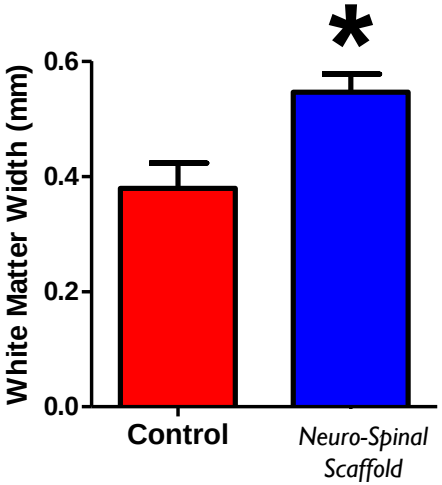
Neuro-Spinal Scaffold



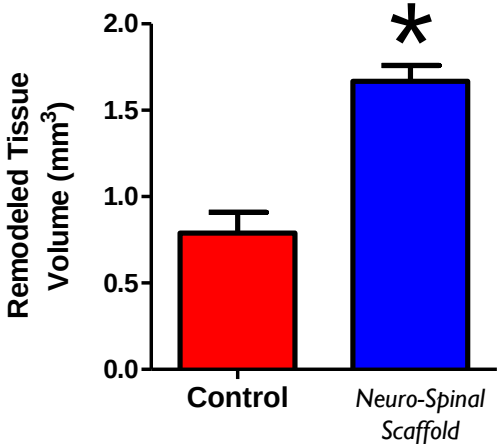
Cyst Reduction



White Matter Sparing



Remodeled Tissue



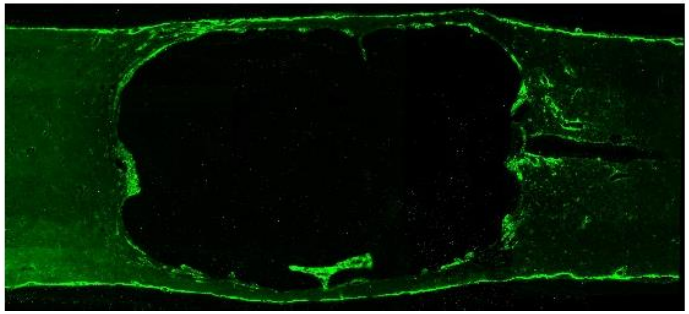
*P<0.05

Poster D8-06; National Neurotrauma Society 2015 Symposium; Santa Fe, NM.

The *Neuro Spinal Scaffold*™ Increases Remodeled Tissue Supporting Neural Regeneration

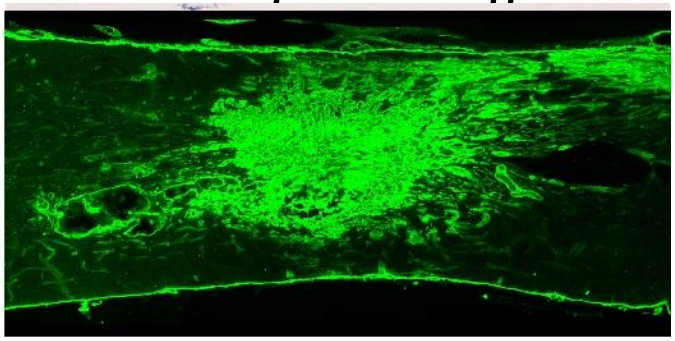
Rat Acute Spinal Cord Contusion Injury (at 12 weeks)

Control

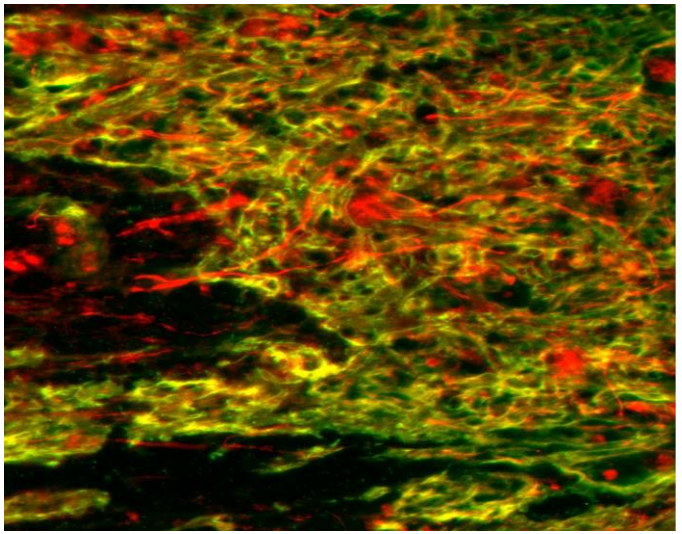


Minimal neuro-permissive matrix

Neuro-Spinal Scaffold



Remodeled tissue with extensive neuro-permissive matrix



Neuro-permissive matrix supports neural regeneration

Company images

Neural Regeneration and Remyelination with Schwann Cells after *Neuro-Spinal Scaffold*™ Implantation

Contusion Injury

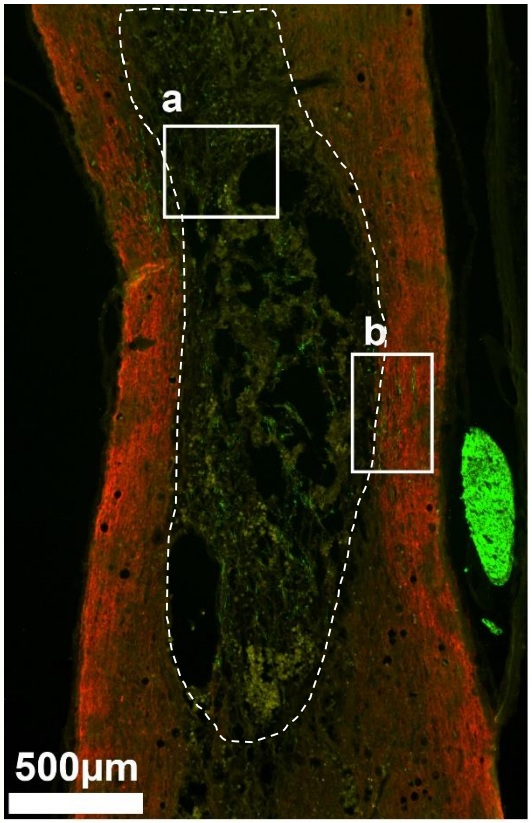
Central epicenter (a) and white matter (b)

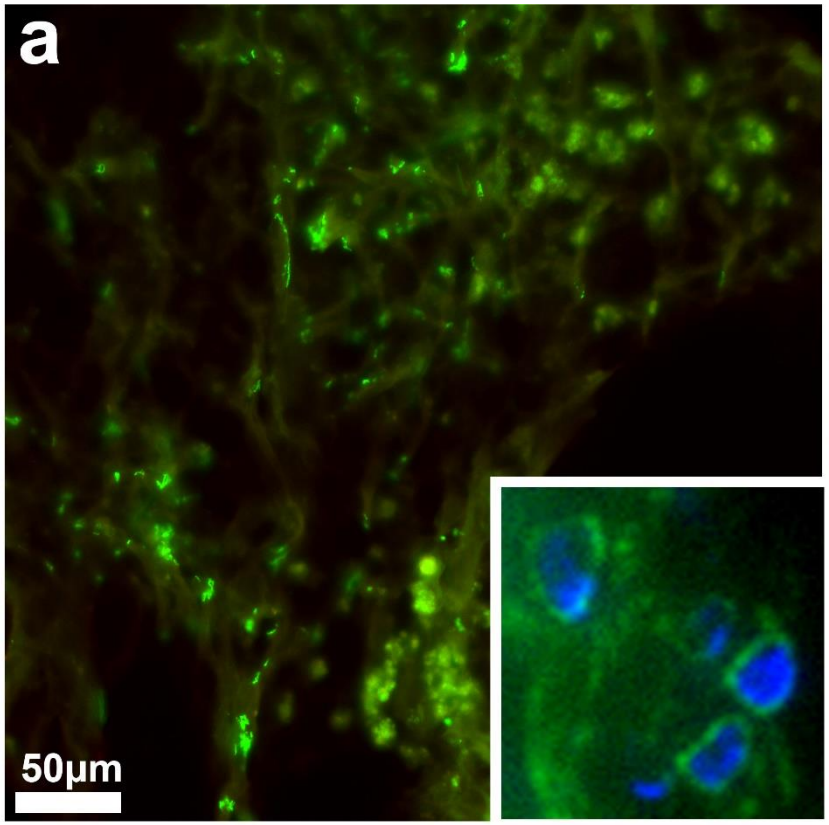
Epicenter

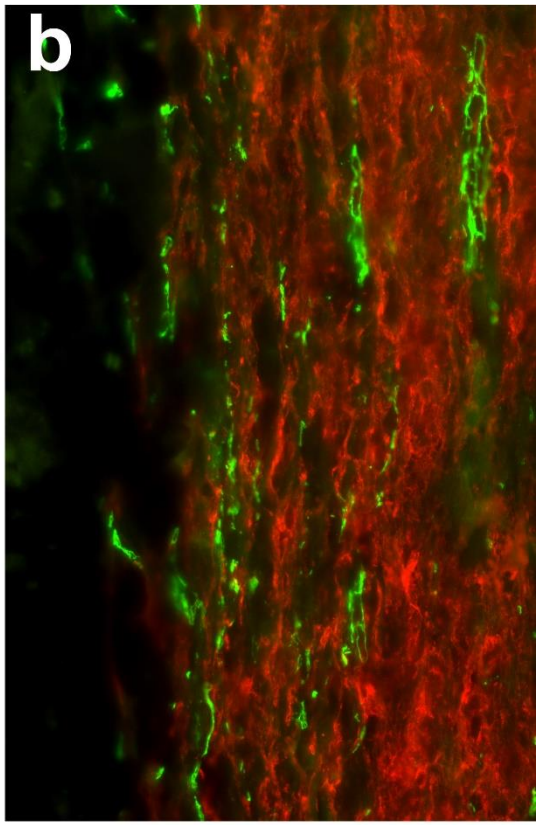
Schwann Cells aid neural regeneration

White Matter

Schwann Cells restore signal transduction







Rat Acute Spinal Cord Contusion Injury (at 12 weeks)

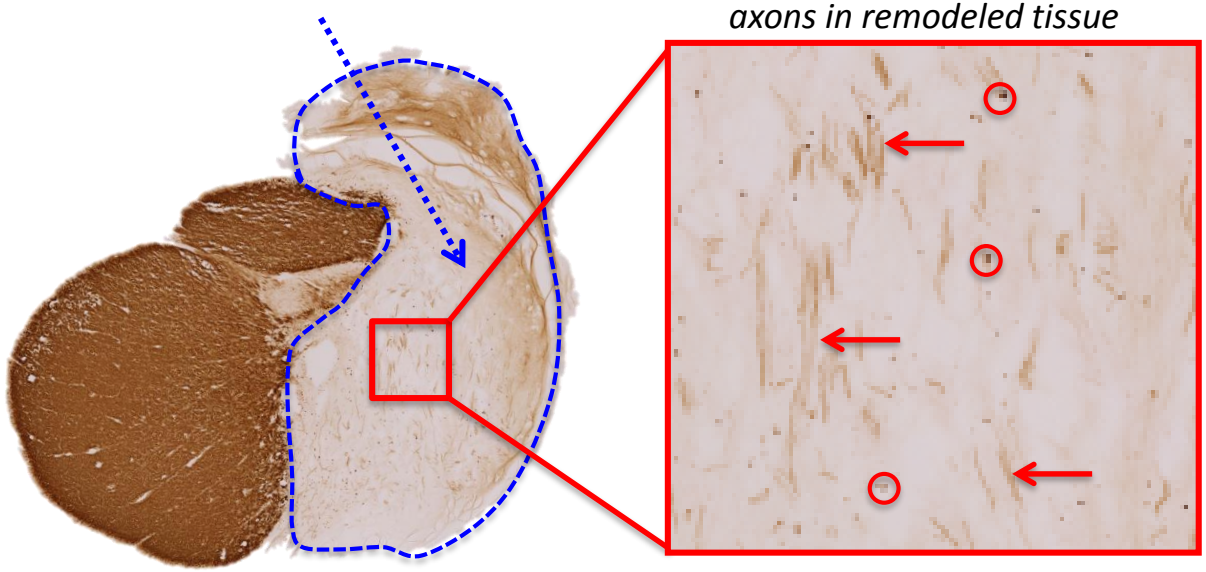
Inset: Schwann cells ensheathing axons

Oligodendrocytes Schwann Cells

Neuro-Spinal Scaffold™ Promotes Neural Regeneration and Functional Recovery

Primate Hemicordectomy Model (at 3 Months)

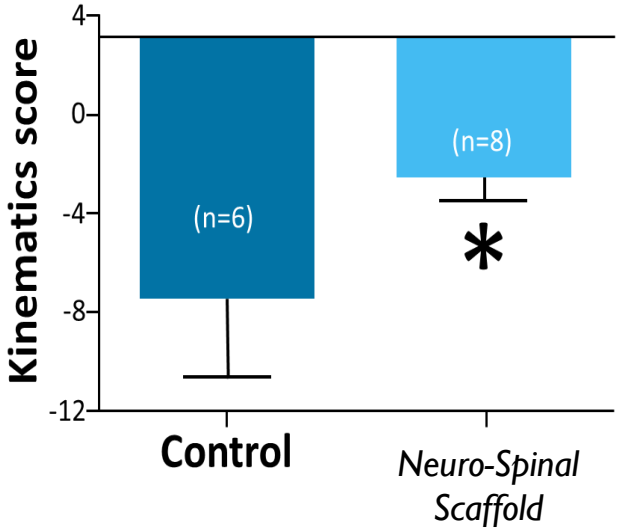
Increased remodeled tissue

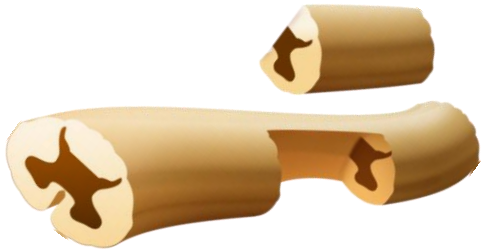


Neural regeneration

Myelin basic protein stained axons in remodeled tissue

Improved functional recovery





Hemicordectomy Model

Slotkin JR *et al.*, manuscript submitted

The INSPIRE Study

InVivo Study of Probable Benefit of the *Neuro-**Spi**nal Scaffold*™ for Safety and Neurologic **Re**covery in Subjects with Complete Thoracic AIS A Spinal Cord Injury

- Designed as 20-patient pivotal study to be used for HDE application
  - Endpoint: improvement in ASIA Impairment Scale (AIS) grade by 6 months
- Objective Performance Criterion (study success definition) – at least 25% of patients improve AIS grade by 6 months
- Additional Endpoints: sensory and motor scores, bladder and bowel function, Spinal Cord Independence Measure, pain, quality of life
- 23 clinical sites (US and Canada)
  - Plan also to include United Kingdom clinical sites in 2016

NOTE: FDA has recommended inclusion of a control arm in the study as part of a Study Design Consideration (SDC). As is typical of the regulatory process, InVivo has previously addressed a number of SDCs regarding the study. InVivo is engaged in a discussion with the FDA regarding this SDC and will provide an update if substantial changes are made to the study protocol. InVivo continues to believe that the current study design is sufficient to demonstrate safety and probable benefit in support of an HDE application for marketing approval.

Promising Neurologic Outcomes and Favorable Safety Profile in The INSPIRE Study

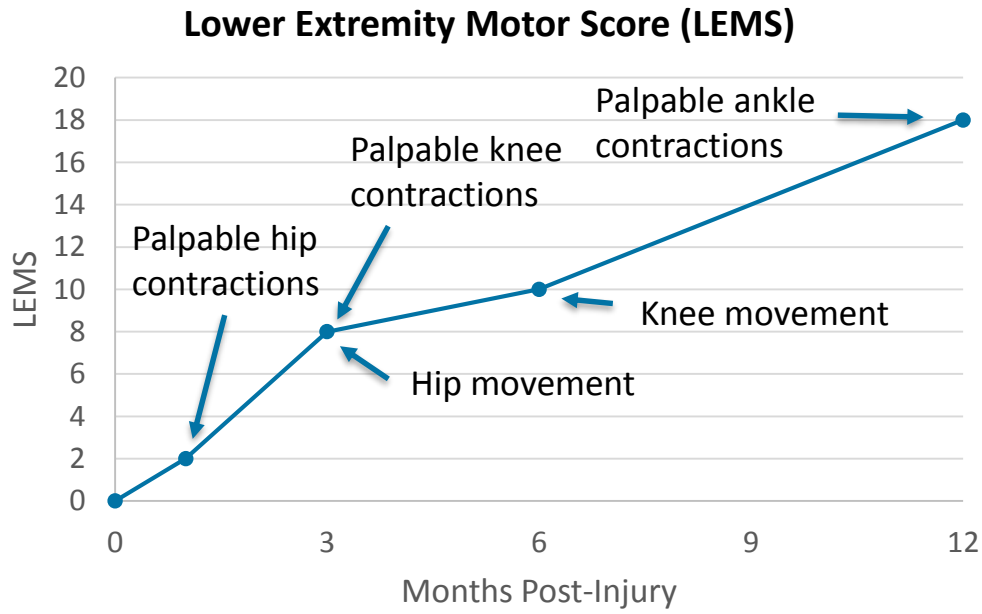
Subject	Neurologic Level of Injury	Injury Type	Time to Implant	Neurologic Outcome to Date
1	**T11**	**Closed**	**9 hrs.**	**Converted to AIS C at 1 month**
2	T7	Open	46 hrs.	Remains AIS A at 12 months
3	**T4**	**Closed**	**83 hrs.**	**Converted to AIS B at 1 month**
4	T3	Closed	53 hrs.	Remains AIS A at 6 months
5	**T8**	**Open**	**69 hrs.**	**Converted to AIS B at 6 months**
6	**T10**	**Open**	**9 hrs.**	**Converted to AIS B at 2 months**
7	T3	Closed	21 hrs.	Remains AIS A at 3 months
9	**T4**	**Open**	**40 hrs.**	**Converted to AIS B at 3 months**

Note: Subjects 8 and 10 passed away with the cause of death deemed unrelated to *Neuro-Spinal Scaffold*™ or implantation

- No obvious correlations between AIS conversions and injury level or type or time to implant
- Conversions observed with open injuries unlikely to benefit from surgical decompression alone
- **Delayed and prolonged recoveries indicate that neural regeneration may be taking place beyond the acute injury period**

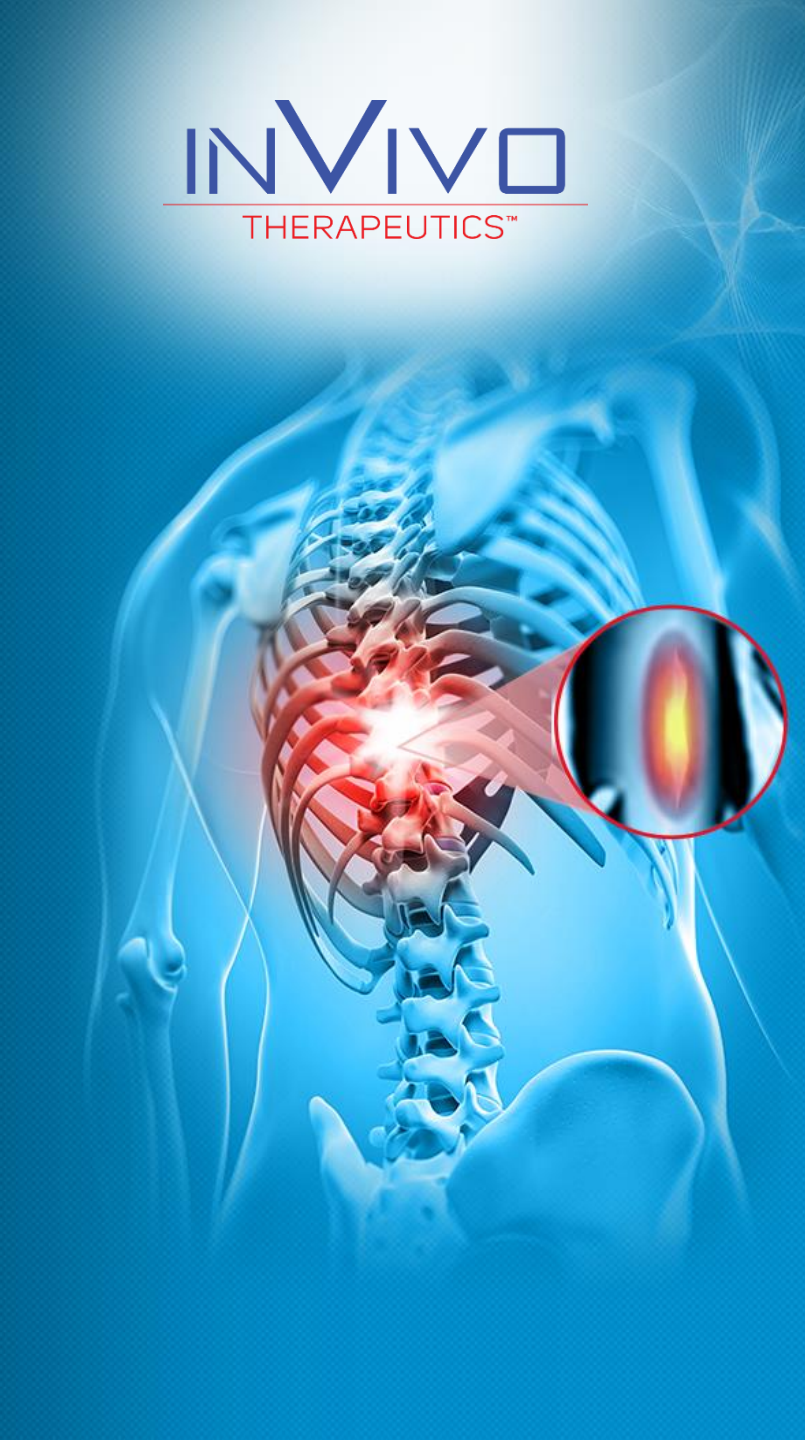
Marked Long-term Improvement in First Patient

- Improved from T11 complete AIS A to AIS C at 1 month
  - <5% of AIS A patients with a T10-T12 injury progress to AIS C or D at 1 month [1]
- Regained bowel function and improved bladder function
- Continued significant motor improvement from months 6 to 12



[1] Zariffa *et al.*, Spinal Cord (2011)

INVIVO THERAPEUTICS™

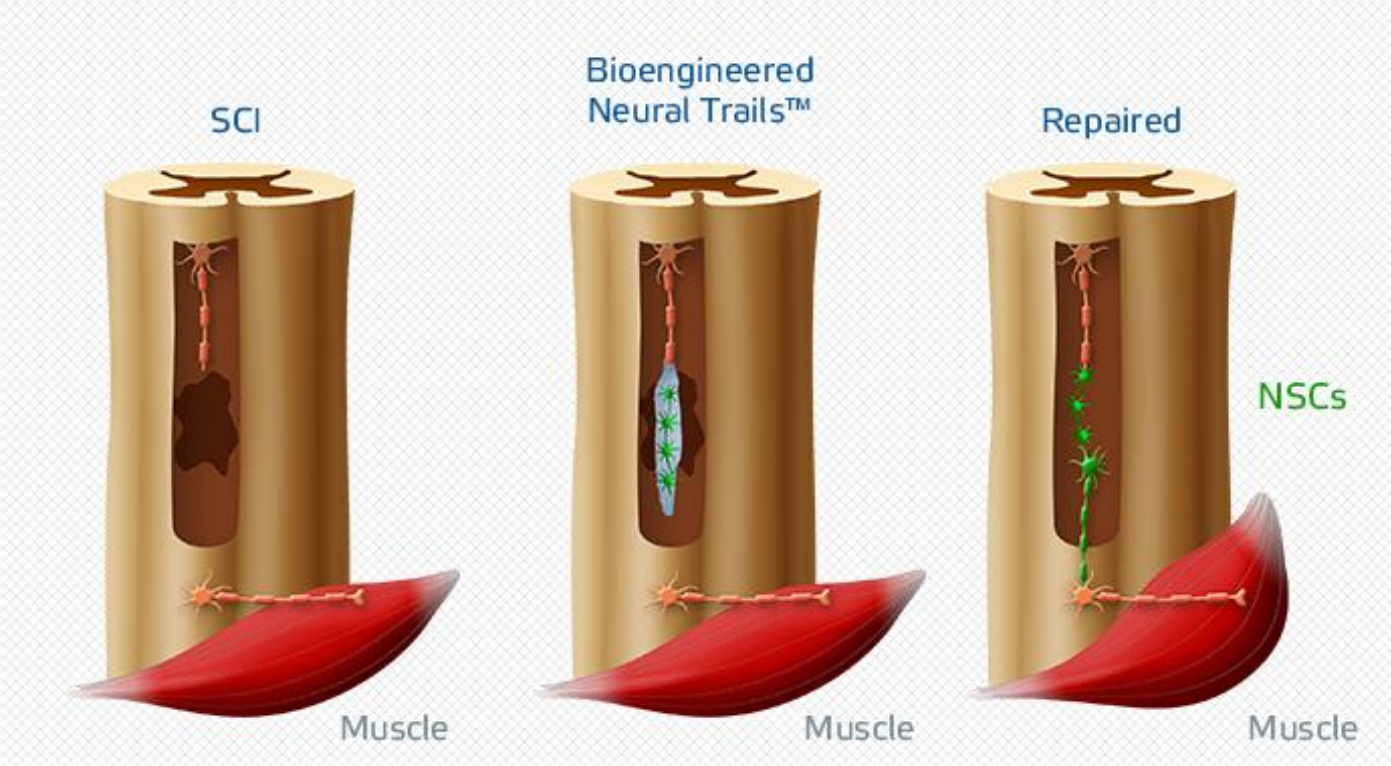


InVivo's Chronic SCI Product: Bioengineered Neural Trails™

Neural Stem Cells Incorporated into an Injectable Scaffold for Minimally-Invasive Delivery

Bioengineered Neural Trails™: InVivo's Novel Neural Stem Cell Product for Chronic SCI

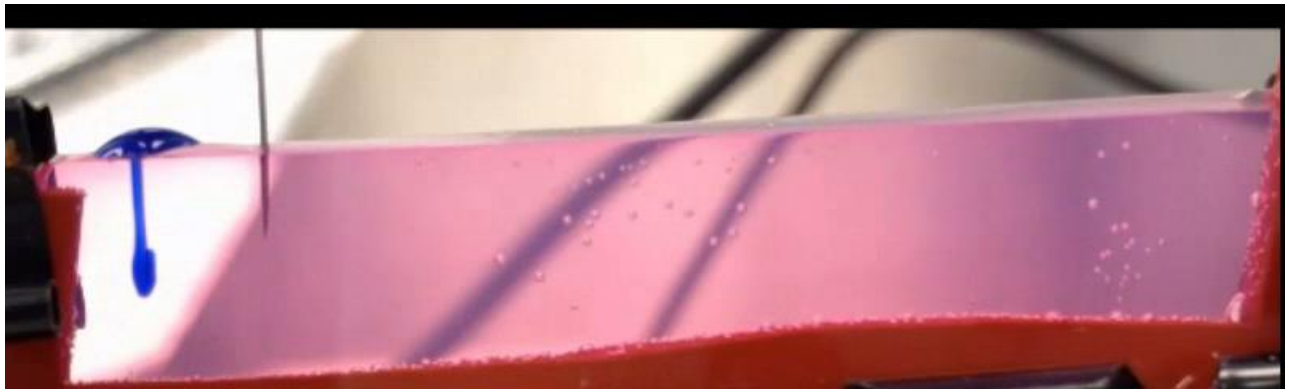
- Neural stem cells incorporated into an injectable scaffold for minimally-invasive delivery designed to:
  - Bridge the site of injury to create neuronal detour circuits
  - Activate the resting potential of network below injury site



Bioengineered Neural Trails Provide Many Advantages Over Conventional Bolus Injections

Bolus approach

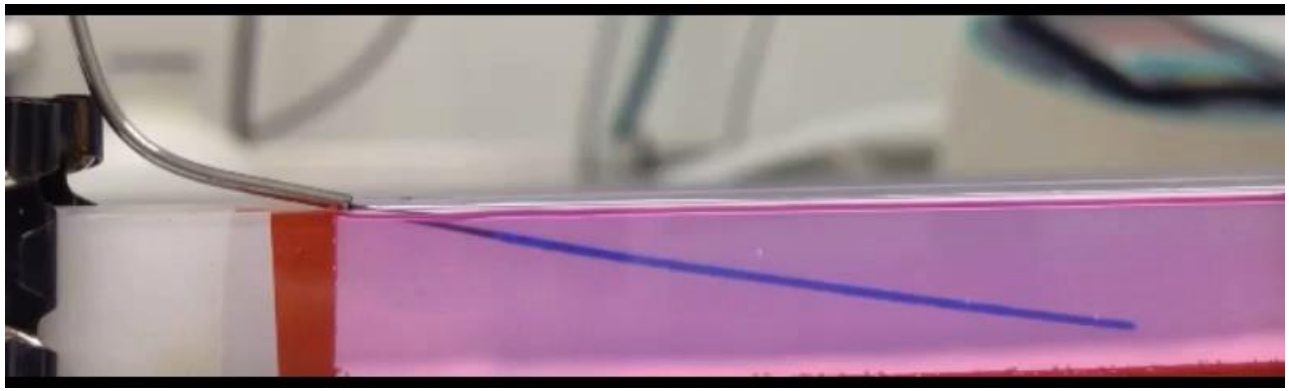
- Reflux at multiple injection sites
- Sub-optimal cell distribution
- No longitudinal connectivity



Collagen matrix to simulate spinal cord

Trail approach

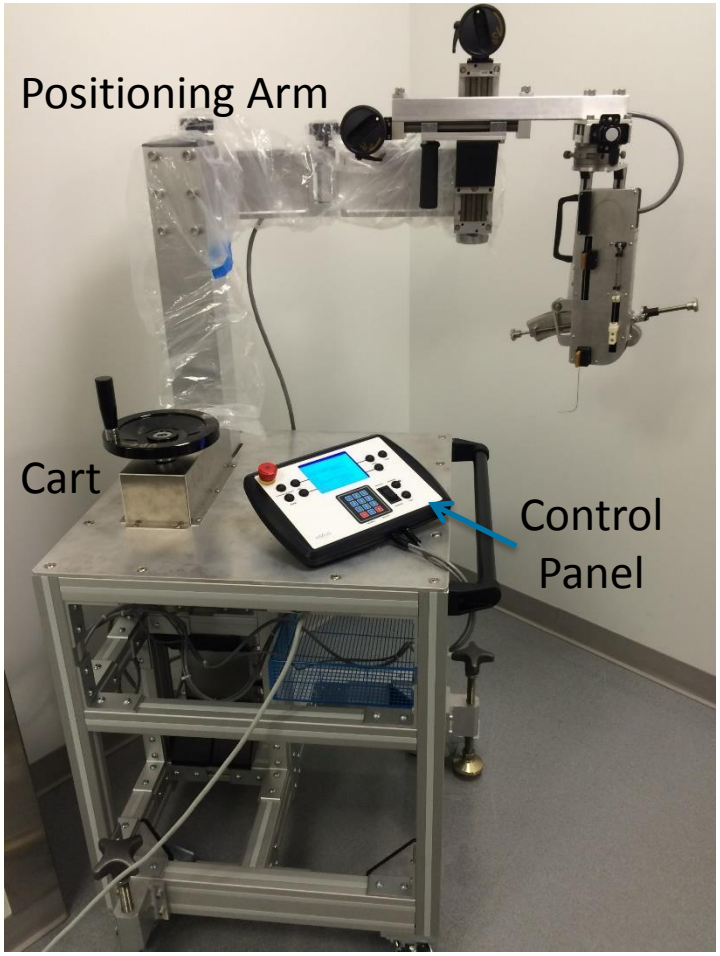
- No reflux at single injection site
- Homogeneous cellular suspension
- Immediate longitudinal connectivity



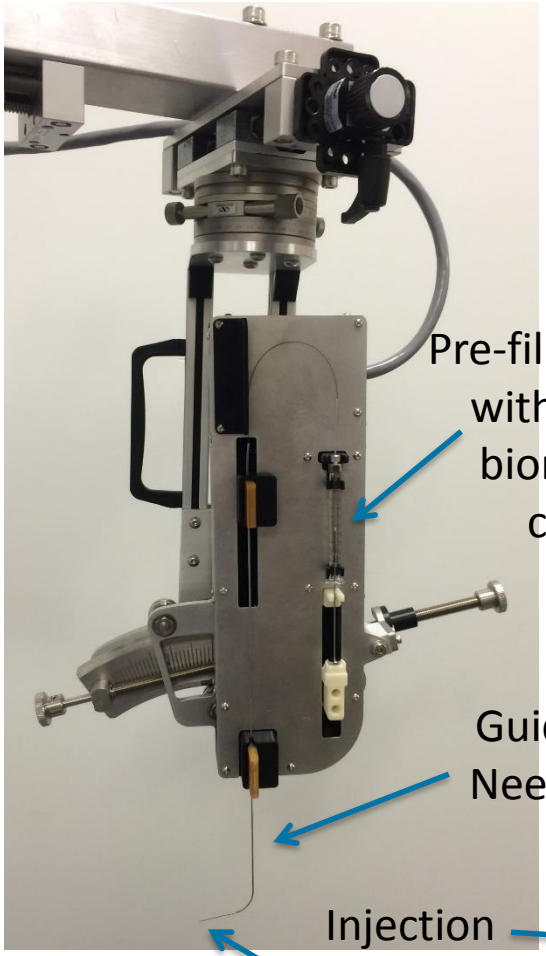
Company videos/images

A Novel Surgical Device for Creation of Bioengineered Neural Trails™

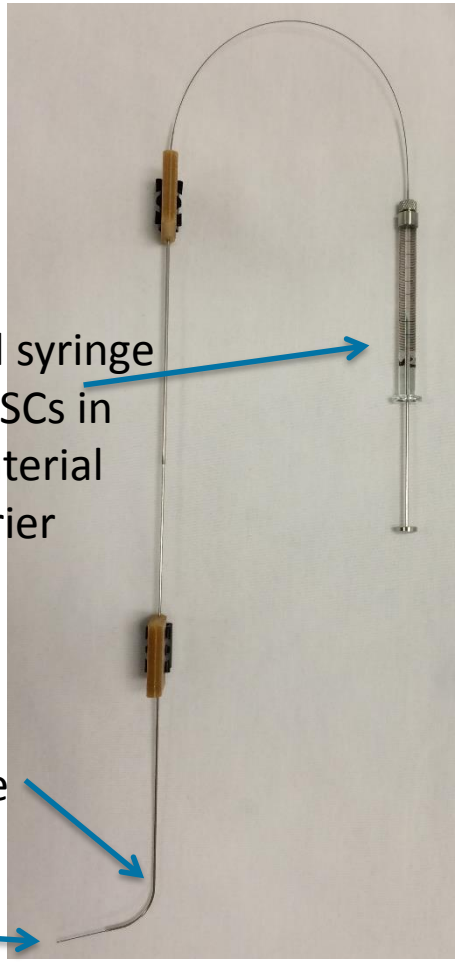
Complete Device



Dispensing System



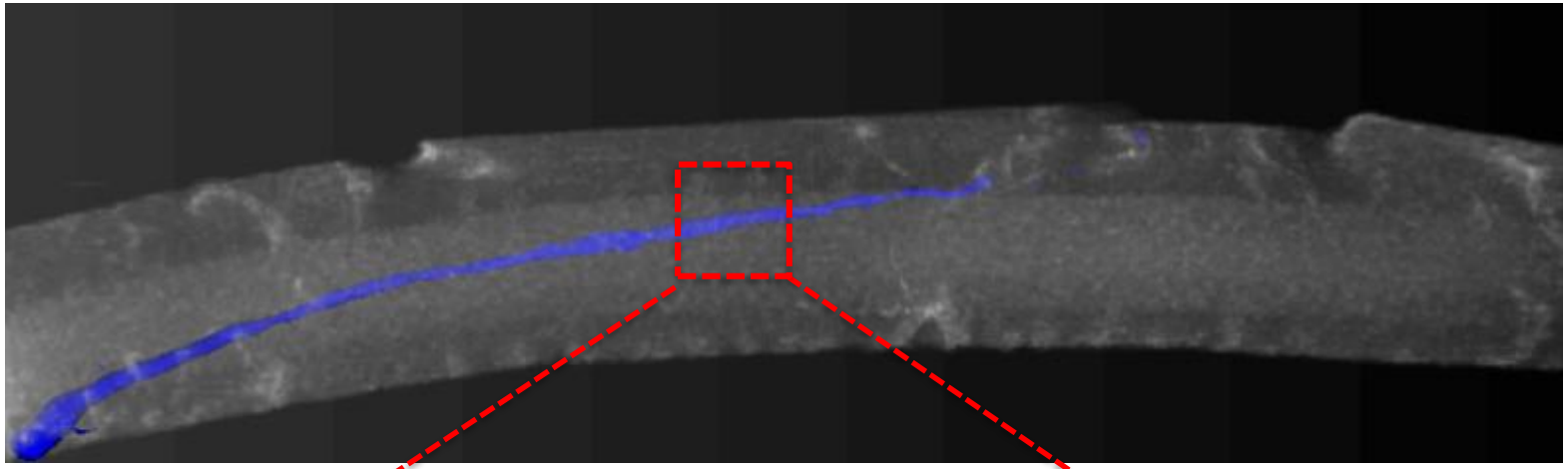
Disposable Injection Assembly



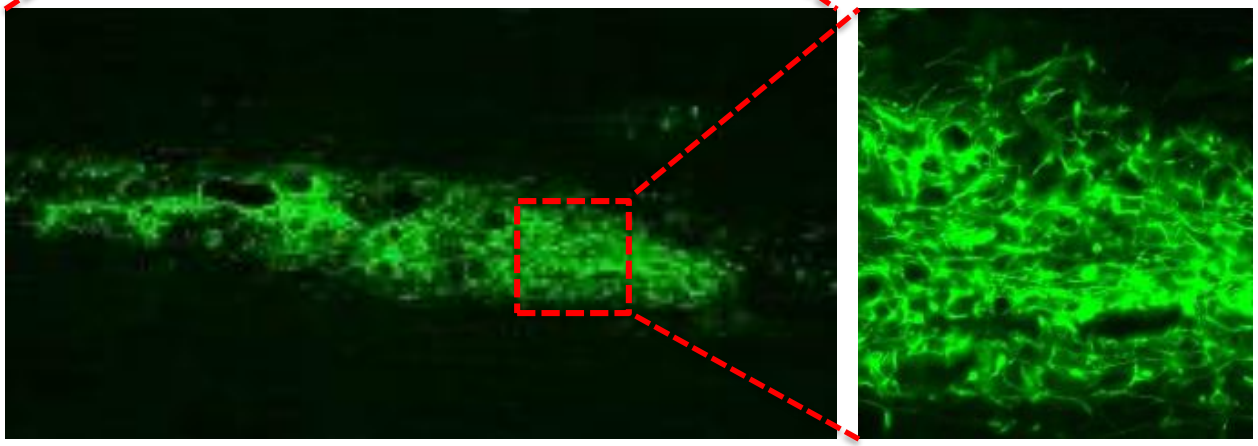
Feasibility of Proprietary Device Demonstrated in Pilot Porcine Study

The Bioengineered Neural Trail Creates a Continuous Neural Plexus Bridging the Injury

3D MRI reconstruction demonstrating continuous Bioengineered Neural Trail in a pig spinal cord



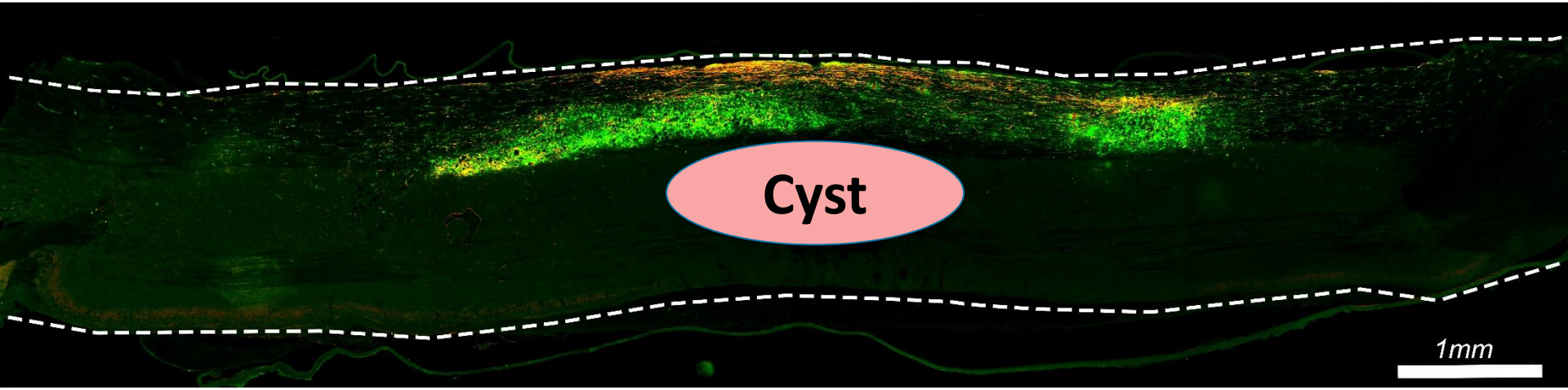
Histology demonstrating interconnected human cells in a pig spinal cord



Company images

Next Steps for Bioengineered Neural Trails™

- Optimize all aspects of product profile in preparation for IND: instrumentation, biomaterial, and NSCs
- Strengthen and broaden intellectual property portfolio
- Partner with a stem cell company to accelerate project timelines



Human Cells (STEM121) and Neural Progenitors (DCX)