

Januar 2019

Embedded Chondroitinase ABC Shows Promise for Spinal Injury Treatment

AMSBIO,

a leading global supplier of Chondroitinase ABC enzyme, reports on the recent publication by Hu et al.** of the therapeutic efficacy of microtube-embedded Chondroitinase ABC on a group of dogs with naturally occurring spinal injuries.

Developing

new therapies for human spinal cord injuries is a challenging task because the damage is heterogeneous in terms of spinal location and severity. Ideally a new therapy should work for survivors with acute injuries as well as for those with chronic injuries that happened less recently.

Results

This work, by Nick Jeffery and co-workers, describes a successful canine clinical trial of a drug therapy for chronic spinal cord injury, which demonstrated an improvement in limb coordination during walking. The pioneering new therapy used AMSBIO's Chondroitinase ABC, a bacterial enzyme that removes sugar sidechains from extracellular matrix molecules including chondroitin sulfate proteoglycans (CSPGs) which are found within the intact and injured nervous system and act as potent inhibitors of axonal growth.

CSPGs

are involved in the inhibition of axon regeneration after various forms of damage to the Central Nervous System, including stroke or spinal cord injury. The enzyme Chondroitinase ABC purified from *Proteus vulgaris*, degrades these CSPGs, and has been shown to promote functional recovery and neural regeneration.



AMSBIO has developed a highly purified Chondroitinase ABC enzyme supplied as a protease-free, carrier-free format, with low-endotoxin levels for use in neuroscience and regenerative medicine research. The trial reported here buffered the enzyme in trehalose and embedded it in lipid microtubes to render it heat-stable and long-acting at mammalian body temperatures. For further information on **highly purified Chondroitinase ABC enzyme** please visit <http://www.amsbio.com/Chondroitinase-ABC.aspx> or contact AMSBIO on +44-1235-828200 / +1-617-945-5033 / info@amsbio.com.



AMS Biotechnology

Founded in 1987, AMS Biotechnology (AMSBIO) is recognized today as a leading transatlantic company contributing to the acceleration of discovery through the provision of cutting-edge life science technology, products and services for research and development in the medical, nutrition, cosmetics and energy industries. AMSBIO has in-depth expertise in extracellular matrices to provide elegant solutions for studying cell motility, migration, invasion and proliferation. This expertise in cell culture and the ECM allows AMSBIO to partner with clients in tailoring cell systems to enhance organoid and spheroid screening outcomes using a variety of 3D culture systems, including organ-on-a-chip microfluidics.

For drug discovery research,

AMSBIO offers assays, recombinant proteins and cell lines. Drawing upon a huge and comprehensive biorepository, AMSBIO is widely recognised as a leading provider of high-quality tissue specimens (including custom procurement) from both human and animal tissues. The company provides unique clinical grade products for stem cell and cell therapy applications-these include high quality solutions for viral delivery (lentivirus, adenovirus and adeno-associated virus) in addition to GMP cryopreservation technology. For further information please visit www.amsbio.com.

Image Caption: Delivery of chondroitinase ABC using percutaneous injections into spinal cord under fluoroscopic guidance (Image courtesy of Dr Nick D. Jeffery, Department of Small Animal Clinical Sciences, Texas A&M University, USA)

** Hilary Z Hu et al, *Brain*, Volume 141, Issue 4, 1 April 2018, Pages 1017–1027 (see <https://doi.org/10.1093/brain/awy007>)

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