

. Modelling enables breakthroughs in Neuromuscular disease research

AMSBIO has published a case study that describes how a team of scientists, led by Dr. Roger Kamm from the **Massachusetts Institute of Technology (MIT)**, has developed a protocol for the fabrication of a 3D microfluidic neuromuscular platform that can be used to model Motor Neuron Diseases (MND's).

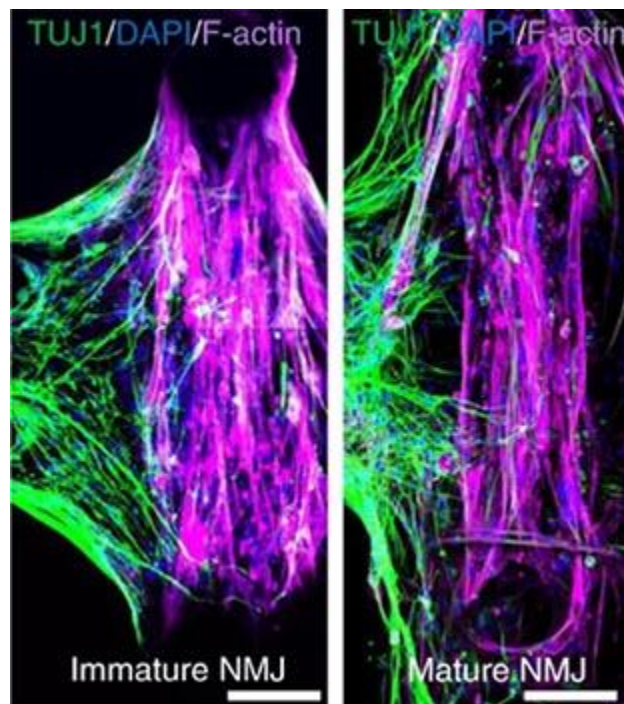


Image captions: A: Immunostaining of immature and mature neuromuscular junctions ;

For one of the most fatal types of MND,

amyotrophic lateral sclerosis (ALS), patients have a life expectancy of only 2 to 5 years. Despite widespread research efforts, effective treatments for MNDs remain elusive, largely due to the complex nature of these diseases and a lack of in-depth understanding of their underlying mechanisms.

Researchers at MIT

have developed novel approaches to unravel the pathogenesis of MNDs using CELLBANKER® 1 and STEM-CELLBANKER® cryopreservation media from AMSBIO. These new developments

hold significant promise in revolutionizing the approach to drug discovery and better understanding the development of MNDs.

Dr. Kamm said “Traditional drug discovery methods for MNDs have often disregarded the role of skeletal muscle cells, focusing predominantly on their effect on motor neurons. However, our new 3D neuromuscular model offers a broader view of the pathology and presents a novel avenue for uncovering effective treatments targeting both motor neurons and muscle cells, that address the complex nature of MNDs”.

Researchers at MIT have developed novel approaches to unravel the pathogenesis of MNDs using CELLBANKER® 1 and STEM-CELLBANKER® cryopreservation media from AMSBIO. These new developments hold significant promise in revolutionizing the approach to drug discovery and better understanding the development of MNDs.



Image captions:; B: CELLBANKER® series of cell freezing media offer high cell viability (>90%) in serum, serum-free, GMP and DMSO-free formatsB: CELLBANKER® series of cell

Dr. Kamm said

“Traditional drug discovery methods for MNDs have often disregarded the role of skeletal muscle cells, focusing predominantly on their effect on motor neurons. However, our new 3D neuromuscular model offers a broader view of the pathology and presents a novel avenue for uncovering effective treatments targeting both motor neurons and muscle cells, that address the complex nature of MNDs

He added

“Our protocol describes a development of a new microfluidic chip that contains compartments for each cell type, allowing for the separation of the motor neuron and muscle cell cultures to mimic the physiology found in living tissue. Induced pluripotent stem cells (iPSCs) from either healthy donors or ALS patients were differentiated into neural stem cells, which were expanded and cryogenically preserved using STEM-CELLBANKER® from AMSBIO. Using our innovative approach shows great promise to help tailor treatments to an individual’s genetics and



consequent drug response to enhance their effectiveness while minimising side effects. By providing a more accurate representation of the disease, the 3D neuromuscular model could accelerate drug discovery and streamline the transition from laboratory research to clinical applications”.

To read this case

study in full please visit <https://www.amsbio.com/news/neuromuscular-disease-research-in-3d/>

The CELLBANKER® series

of cell freezing media from AMSBIO allow the stable long-term storage of cells. With its unique formulation which enables stable cryopreservation and high viability after freeze-thaw procedures, CELLBANKER® and STEM-CELLBANKER® are trusted solution for the storage of any cell type including sensitive cell lines. Available in several formulations, this series of easy-to-use cell freezing media offers high cell viability (>90%) in serum, serum-free, GMP and DMSO-free formats. For further information please visit <https://www.amsbio.com/stem-cell-cryopreservation/> or contact AMSBIO on on +31-72-8080244 / +44-1235-828200 / +1-617-945-5033 / info@amsbio.com.

AMS Biotechnology (AMSBIO)

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 R&D 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 recognized 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 cells and cell therapy applications. This includes GMP cryopreservation technology, and high-quality solutions for viral delivery.



Worldwide HQ

AMS Biotechnology (AMSBIO)

184 Milton Park
Abingdon
Oxon OX14 4SE
UK

Tel: +44-1235-828200

Fax: +44-1235-820482

Email: info@amsbio.com

Web www.amsbio.com