Products for sustainable food development

Kits, media and reagents

AMSBIO offers a range of kits, media and reagents enabling development of food in a way that is not wasteful of our natural resources and is not detrimental to the environment or consumer health.

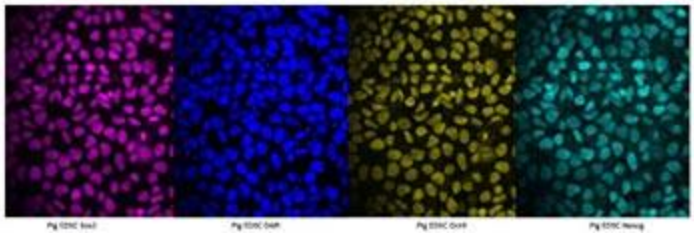

Image captions: *A: Pig embryonic disc stem cells grown on iMatrix-511 silk recombinant laminin. Images courtesy of Ramiro Alberio, Professor of Developmental Biology, and member of the Future Food leadership team at the University of Nottingham, UK.*

Cultured meat

Recent advances in biotechnological methods have enabled the development of **cultured meat** - meat grown in a laboratory using stem cell technology that mimics the texture, flavor, and nutritional value of conventional meat. cultured meat has the potential to be less resource intensive through the lessening of animal husbandry and slaughter leading to knock on effects such as decreasing air pollution, decreasing deforestation, reducing water use / contamination, slowing biodiversity loss, shrinking antibiotic resistance, and lessening foodborne illnesses.

Cultured meat research and developmen

Products for **cultured meat research and development** from AMSBIO fall broadly into three areas. First, to create the correct environment and stimuli for cultured cells. Second, standards and kits to test if these cells are behaving like the *in vivo* model, and finally cryopreservation media to archive cells for reference or future use. The company's growing range of high-quality products for pioneering cultured meat research includes skeletal muscle differentiation kits, recombinant extracellular matrices, 3D scaffolds, and cryopreservation media.

CELLBANKER® media

The manufacturing of cultured meat requires a suitable source of cells that can differentiate into muscle and fat cells. A 2023 study by Kalkehi and co-workers discussed the implications of using primary cells which required the repeated harvest of cells from different animal sources. This challenge was overcome by successful cryopreservation of bovine myogenic cells in **CELLBANKER® media** available from AMSBIO which maintained cell quality for downstream production of cultured meat products.

iMatrix-511 Laminin E8 fragments

Another vital component in the development of new cell-based foods is the culture media and matrix for support of cell growth and differentiation. In 2022, Takahashi and colleagues

demonstrated the efficiency of **iMatrix-511 Laminin E8 fragments,** available from AMSBIO, for the adherence of bovine myogenic cells extracted from bovine meat and their differentiation into myotubes. These micropatterned culture substrates were used to form a scaffold upon which myotubes could then be aligned into myofibers that mimic the structure of native muscle tissue.

GMP-compliant products

Currently research is underway to decipher the optimal combination of cellular source, growth media, bioprocesses, and biomaterials to successfully scale-up processing of cultured meat products to a commercial level. Offered as a product to consumers, all materials and procedures used in cultured meat production must follow strict regulations under GMP and FDA approval to make sure the end product is safe for consumption. The major challenge faced in manufacturing is the high cost of this large-scale production therefore standardization of procedures and automated processes are needed to reduce costs in the future. AMSBIO is aiming to ease transition from bench scale to manufacturing with a range of **GMP-compliant products and services** to help streamline the transition.

Image captions: *B: Cultured meat – a new era in food technology*

To read the blog *'Cultured Meat: from cell culture to restaurant table'* please visit https://www.amsbio.com/news/culturedmeat.

For further information

on products for sustainable food development please visit https://www.amsbio.com/research-areas/cultured-meat/ or contact AMSBIO 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.

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