MEDIA RELEASE
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NEW PEER-REVIEWED RESEARCH STUDY EXTENDS UNDERSTANDING OF THE BIOLOGICAL PROPERTIES AND HEALING QUALITIES OF AROA ECM™

Highlights

- The peer-reviewed scientific publication has provided further validation for the unique structural properties and healing qualities of AROA ECM technology.
- The study deepens the understanding of the role that AROA's gentle manufacturing process plays in preserving the unique structural and biological characteristics of AROA's platform technology, AROA ECM, and how these features translate into better healing outcomes for patients.
- The findings aid understanding of the biological processes at work in the application of AROA's Endoform™, Myriad™ and Symphony™ products, and support development of new products for the global wound care market.

Aroa Biosurgery Limited (ASX:ARX, 'AROA or the 'Company') this week marked publication of a peer-reviewed manuscript to scientifically characterize the Company's AROA ECM technology, derived from 'ovine forestomach matrix' ('OFM'). AROA ECM is referred to as "OFM" in the study.

AROA's products are designed for complex soft tissue regeneration and wound healing applications. The study is part of the Company's research programme which strives to deeply understand the healing properties and possible future applications for the core technology underpinning Endoform, Myriad, Symphony and OviTex.[1]

AROA CEO, Dr. Brian Ward said this latest study further demonstrates the potential of AROA's regenerative technology and supports the conclusion that the unique structure and biology of AROA ECM aids the cellular healing process, potentially leading to faster wound closure.

The findings were published this week in a study titled "Further Structural Characterization of Ovine Forestomach Matrix and Multi-Layered Extracellular Matrix Composites for Soft Tissue Repair".

The study is online at the Journal of Biomaterials Applications - https://journals.sagepub.com/doi/10.1177/08853282211045770

Scope of the study

AROA undertook the study to further investigate and validate the structural and biological characteristics of the AROA ECM, as well as of its multi-layered medical devices, Myriad Matrix and Symphony.

The study also describes AROA's proprietary non-destructive process for creating these multi-layered devices and provides an in-depth level of detail, characterizing the intricate native matrix structure and residual vascular channels within AROA ECM and the biophysical properties of multi-layered AROA ECM grafts. The study also examined the biological response of keratinocytes (a major cell-type in in the epidermis or outer layer of the skin) to OFM-based devices.

[1] OviTex is sold by TELA Bio, Inc., AROA's US commercial partner for hernia and breast reconstruction products.

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Key findings

Using atomic force microscopy, the study found that AROA's gentle manufacturing process removes unwanted cells from the tissue while leaving other native structural features of the tissue extracellular matrix ('ECM') intact. These structural features include 'residual vascular channels' which are a unique feature of AROA ECM platform technology due to the highly vascular source tissue, OFM.

These residual vascular channels serve as templates to enable rapid cell repopulation and vascularization of the AROA ECM grafts. The study authors used the termed 'angioconduction' to describe this process, whereby structural features of the bioscaffold accelerate the formation of blood vessels which is thought to support a more rapid establishment of a capillary bed and vasculature in patients. Overall, the products were also shown to promote and accelerate the migration and proliferation of keratinocyte, a process that is known to aid wound closure.

The research also describes the unique composition of AROA's Symphony device, which combines the structure and biology of AROA ECM with the naturally occurring polymer, hyaluronic acid. This biopolymer occurs naturally in human skin and is known to play a key role in wound healing, moisture retention, cellular processes, and blood vessel formation. Symphony devices have been designed to accelerate wound healing by combining the advantages of AROA ECM with the known beneficial properties of hyaluronic acid.

Significance of the findings

AROA CEO, Dr. Brian Ward says that understanding the structural and biological properties of AROA ECM helps to explain the improved outcomes in patients. Each new study provides a deeper understanding of how AROA ECM can be harnessed to continuously improve clinical outcomes.

AROA's portfolio of ECM-based products is distinctly different from synthetic biologic or polymer-based products which do not retain the intact biologic structure and native signals. Older biologic technologies include reconstituted collagen, isolated from animal tissues using relatively harsh processing which disrupts natural structures. As well as loss of structural features, these synthetic products lack the wide range of biological components that are known to aid tissue regeneration. Pre-clinical studies have shown that the AROA ECM technology includes over 150 different protein components known to aid wound repair, stimulate blood vessel formation and attract stem cells.

The global wound care market size was valued at US$19.83 billion in 2020 and is expected to grow at a compound annual growth rate (CAGR) of 4.1% from 2021 to 2028.[2] Meanwhile, the global soft tissue regeneration market size is expected to reach $US10.73 billion by 2025, expanding at a CAGR of 7.3%.[3]

"It is encouraging that our underpinning AROA ECM technology and product portfolio is continuing to demonstrate its effectiveness. Around the world, the demand for wound care and soft tissue regeneration is growing. Through the AROA ECM technology we are rising to that challenge, with products that facilitate more rapid healing for thousands of people," Dr. Ward says.

[2] Wound Care Market Size, Share & Trends Analysis Report By Application (Chronic, Acute Wounds), By Product (Advanced, Surgical), By End Use (Hospitals, Home Healthcare), By Region, And Segment Forecasts, 2021 – 2028.

[3] Soft Tissue Repair Market Size, Share & Trends Analysis Report By Product Type [Fixation Products (Suture, Suture Anchors), Tissue Patch/Mesh (Biological, Synthetic)], By Application, By Region, And Segment Forecasts, 2018 – 2025.

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Authorised on behalf of the Aroa Biosurgery Board of Directors by Brian Ward, CEO.

About Aroa Biosurgery:

Aroa Biosurgery is a soft-tissue regeneration company committed to 'unlocking regenerative healing for every*body*'. We develop, manufacture, sell and distribute medical and surgical products to improve healing in complex wounds and soft tissue reconstruction. Our products are developed from a proprietary AROA ECM™ technology platform, a novel extracellular matrix biomaterial derived from ovine forestomach. AROA has six patented product families selling in the US based on its AROA ECM technology, targeting chronic wounds, hernia, soft tissue and breast reconstruction. AROA's products have been used in more than four million procedures to date, with distribution into our key market of the United States via our direct sales force and our partner TELA Bio. AROA has regulatory approvals in 49 countries. Founded in 2008, AROA is headquartered in Auckland, New Zealand and is listed on the Australian Securities Exchange (ASX:ARX). www.aroabio.com/

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