



Media release

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For immediate release

Australia leads the world in tissue regeneration & wound care

Tragic incidents such as Bali Bombing and recent bushfires, as well as an ageing population, are motivating innovation.

Australia has taken the lead internationally in the area of tissue regeneration largely due to the lessons learned from the Bali Bombing, the Victorian bush fires and the experiences of treating patients such as high-profile burns victim, Sophie Delizio. Experts also say there is a 'silent epidemic' of the elderly and those with diabetes who have wounds that will not heal. Many of the leading researchers in the field from throughout Australia will converge at a special session on Tissue Regeneration and Wound Care at the upcoming AusBiotech 2011 conference in Adelaide from October 16-19.

"From tendons to skin, the science around soft tissue repair and regeneration is truly incredible and fascinating," says session chair and CEO of the Commonwealth-funded Wound Management Innovation Cooperative Research Centre, Professor Stephen Prowse. "Few Australians realise that it is possible now to have tendons or cartilage regenerated or benefit from very sophisticated wound care technologies not available anywhere else in the world."

Tissue regeneration is a concept that just a decade ago scientists would not have thought possible, but major disasters and an unmet need has forced doctors and scientists to unlock new methods of treating patients with soft tissue injuries. In many cases, these technologies involve the adult form of stem cells, synthetic tissue or the use of synthetic scaffolds that simulate the body's ability to seal injuries (commonly called 'scabbing') which can be used to stimulate and encourage natural healing. Many of the technologies in development will be showcased and discussed at the AusBiotech 2011 national conference in order to create an opportunity for the scientists across the many areas of wound and tissue repair to come together and learn from each other.

Dr Anna Lavelle, CEO of AusBiotech, says "There are many very exciting and promising tissue regeneration and wound care technologies being developed in Australia right now. Australia is a leader in this field, which is why we felt it was so important to hold a session exploring this fascinating area of research at the conference. We hope this session will help everyone at the AusBiotech conference, resulting in additional partnerships and collaborations to create treatments will help people around the world. "

Each state of Australia is contributing to this area of science and patient care, which will be explored at the conference. State-specific examples include:

South Australia

Researchers at the **University of South Australia** in collaboration with **PolyNovo Biomaterials** have developed a technology called Novoskin, which will soon be examined in a human trial. Novoskin is a solution for patients with severe burns. The only option now for these patients is a traditional skin graft, which still leaves significant scarring, pain at the site the graft is taken from and often the skin being grafted (e.g. From the leg) is not the same as the place that has been burned (e.g. face), leaving a poor result. Researchers in Adelaide have developed a technique of removing the burned area and stabilising this with a special covering that prevents the body from healing (and scarring). Meanwhile a small graft is taken of their skin and it is regrown in a lab until it is a sufficient size to cover the burn area.

Victoria

Researchers in **Melbourne** are working with biotech company, **Mesoblast**, on an adult stem cell technology platform built upon the discovery of a stem cell called adult-derived Mesenchymal Precursor Cells (MPCs), and the development of methods to isolate and accurately identify these cells. MPCs can be used in a broad range of indications where replacement of damaged tissue is required. Consequently, MPCs are beneficial in treating cardiovascular diseases such as heart failure and heart attack, diabetes, bone fractures, cartilage replacement, eye diseases, expansion of bone marrow and many more applications that impact the ageing population.

Western Australia

Researchers at the **University of Western Australia** in collaborations with companies, **Orthocell** and Genzyme, have developed 'stem cell' therapies for tendons and cartilage tissue repair and regeneration that are available now from physicians. The treatments involve extracting stem cells of the tendon or cartilage, growing them in a laboratory and then reinjecting them into the damaged tissue. The result is regeneration and growth.

Researchers in WA working with **Avita Medical Ltd** designed and commercialised ReCell® Spray-On Skin, for use in a wide variety of burns, plastic, reconstructive and cosmetic procedures. ReCell allows in-theatre preparation of a spray-on suspension consisting of cells derived from a small, thin biopsy of a patient's own skin that is sufficient to cover an area up to 80 times the size of the biopsy. The metabolically responsive epithelial cells migrate across the wound surface, leading to regeneration of skin of normal colour and texture. ReCell is commercially available in major international markets throughout Europe, Middle East, Australia and Asia.

Researchers at **Allied Medical's Celxcel business** have developed and patented a tissue engineering process that is designed to develop implantable tissue that is more compatible with the human body than currently used synthetic tissue. The ADAPT® Tissue Engineering Process (TEP) process produces a bioprosthetic scaffold (extracellular matrix) made from animal tissue. Depending on the site of implantation, the patient's own cells will migrate into the matrix and stimulate site-specific controlled regrowth and regeneration. At the same time, new blood vessels are formed that



lead to functional tissue repair. The company is currently developing it for heart valves. It is also looking at its application as a scaffold to grow and deliver stem cells.

Queensland

Scientists at **Tissue Therapies Limited** are developing biomedical technologies for wound healing, tissue repair, cell culture and other applications. Based on its VitroGro® technology, Tissue Therapies is developing more effective treatments for acute and chronic wound healing applications including chronic skin ulcers and burns. VitroGro is a synthetic scaffold that restores cell attachment and migration, the essential elements of tissue repair and wound healing.

New South Wales

Various researchers at **Concord Hospital and Royal North Shore Hospital** have developed unique technologies to help burn victims and patient suffering from wounds. The Skin Culture Laboratory situated at the unit conducts tissue culture research and cultures skin for use in grafting procedures for burn patients. The laboratory is able to isolate skin cells taken from a 4cm square biopsy and expand them in vitro to more than 500 times in area. These can then be grafted back to the patient in approximately three weeks. In addition, a dedicated research laboratory has been established at the ANZAC Institute charged with developing and evaluating three-dimensional skin replacement tissues.

For more information, a full speaker list or to register for AusBiotech 2011, please visit <http://www.ausbiotech2011.com.au/> Media passes are available on request. AusBiotech 2011 is supported by BioInnovation SA and the South Australian Government.

ENDS

AusBiotech 2011 is the annual conference of AusBiotech and the premier biotechnology conference for Australia and the Asia-Pacific. The conference attracts over 1,400 delegates from across the world each year and is renowned for its agenda-setting programs, significant business analysis and world-class Business Matching Program.

AusBiotech is Australia's voice on biotechnology, and represents more than 3,000 members, encompassing medicines, medical diagnostics and devices, agriculture, alternative fuels and climate change.

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