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Wednesday, Feb 8, 2012
12:00pm
in LSC3

Life Sciences Centre
2350 Health Sciences Mall

“Vascularisation of tissue constructs”

A critical issue associated with creating large tissues and whole organs is the difficulty of supplying nutrients to all the cells in a thick segment of tissue beyond the limits of Fick’s law. In one approach, we have created a three-phase construct containing endothelial cells (EC), mesenchymal stromal cells (MSC) and collagen using modular components. MSC (or other cells) are encapsulated within collagen cylindrical modules and seeded with endothelial cells. Packing modules within a larger tube results in a scaleable, blood perfusable bed of uniform cell density. Placing modules in vivo drives a remodelling process that results in a perfuseable vasculature.

Another approach is to exploit a novel biomaterial that induces vascularisation in its vicinity as a consequence of the peculiarities of the wound healing response. This angiogenic polymer has an angiogenic effect due to material composition and without immobilised or other form of biomolecule incorporation. For example, a 45 mole % methacrylic acid copolymer (with MMA) caused a significant increase in the number of vascular structures in a rat skin graft model that also lead to enhanced ‘take’ of the graft. This latter material is an example of a therapeutic polymer – a material with biological effect without cells or drugs.

This Seminar is sponsored by:

Baxter

Host: Dr. Jay Kizhakkedathu, Associate Professor, Pathology and Laboratory Medicine & Centre for Blood Research

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Refreshments will be served 10 minutes before the seminar
Seminar information: 604 822 7407

