

Introductory Talks by New Researchers @ BioSyM

10 Oct 2016 – 19 Dec 2016

A nanoscaffold impregnated with human wharton's jelly stem cells or its secretions improves healing of wounds

Dr. Kimberley TAM



Date: 21st November 2016, Monday

Time: 12 pm to 1 pm

Venue: Perseverance Room, Enterprise Level 5

Abstract

Wound healing is a major problem in diabetic patients. We evaluated the treatment of excisional and diabetic wounds using a stem cell isolated from the human umbilical cord Wharton's jelly (hWJSC) that shares unique properties with embryonic and adult mesenchymal stem cells. Since nanoscaffolds provide three dimensional architectural patterns that mimic in vivo stem cell niches and aloe vera has antibacterial properties we evaluated the use of an aloe vera-polycaprolactone (AV/PCL) nanoscaffold impregnated with green fluorescent protein (GFP)-labeled hWJSCs (GFP-hWJSCs + AV/PCL) or its conditioned medium (hWJSC-CM + AV/PCL) for healing of excisional and diabetic wounds. It was demonstrated that nanoscaffold impregnated with hWJSCs appear to have synergistic benefits for wound healing.

Short Biography

Kimberley joined SMART-BioSyM in September 2016 as a senior postdoctoral associate in Krystyn's group. She completed her PhD at The Robinson Institute, Research Centre for Reproductive Health, University of Adelaide (Australia). Her previous postdoctoral experiences include the establishment of NSCLC patient derived cancer xenografts at Cancer Science Institute, Singapore. Kimberley also spent 3 years at the Department of Obstetrics and Gynaecology (NUS) investigating the role of MSCs in wound healing. Her current work in SMART involves developing animal models for utilizing Human Mesenchymal Stem Cells as a therapy.