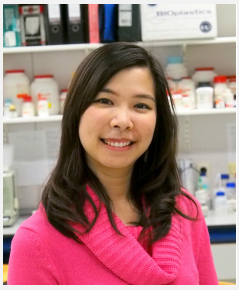
ImmunoTools *special* Award 2016



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Paracrine ability of periodontal ligament versus dental pulp stem cells for wound healing in gastrointestinal tract

Slow healing or non-healing wounds pose a major health problem that contributes to substantial disability, morbidity, and costs. Although gastrointestinal tract are most easy tissue that can be regenerate but there are many factors lead to impaired wound healing such as restricted blood supply to the wound, uncontrolled inflammation, diabetic condition of patient, or cancer treatment by radiation and chemotherapy. Many studies were conduct to improve tissue healing. One of the interested method is delivery autologus cell as a cellular therapy and let the cell regenerate the injured tissue by proliferation differentiation and secrete cytokines that promote other cell growth or control immunoreactions.

Our study focuses on paracrine ability of two types of cell that are possible to be autologus cell sources for the cellular treatment. Periodontal ligament (PDL) and dental pulp stem cell (DPSC). Our research group studied these two cell types and identified their stemness. They have ability of stem cell, which is selfrenew, and able to differentiated to multilineage such as Osteogenic, adipogenic and chondrogenic differentiation. Moreover PDL and DPSC were use in many studies to regenerate tissue in periodontal disease and oral defects. PDL and DPSC also have ability to secrete some factors that would help regenerate injured dental tissues. Thus we hypothesized that these cells may have stem cell ability other than differentiation ability to promote other tissues in gastrointestinal tract too.

Many factors that would lead to better wound healing are e.g. angiogenic factors like Vascular endothelial growth factor (VEGF), fibroblast growth factor (FGF-2), other growth factors that involved in wound healing for example Hepatocyte growth factor (HGF), Keratinocyte growth factors (KGF), Leptin and immunomodulatory cytokines such as tumor necrosis factor alpha (TNF-α), interferon gramma (IFN-γ), IL-4, IL-6, IL-8, IL-10 and IL-16. These paracrine factors and cytokines can promote repair of injured tissue and/or improve the quality of tissues that are regenerated. Although, paracrine ability would be important information to design which cell type are suitable for which application regards to different underlining cause of impaired wound,

paracrine ability of PDL and DPSC information remain limited. This information will also benefit for future research in order to modified paracrine ability to enhance the therapeutic effect. ImmunoTools recombinant of human cytokines and ELISA set listed below would useful to achieve our purpose. ImmunoTools reagent would help us characteristic and identify PDL and DPSC paracrine phenotype for future application to help regenerate injured tissue and improve wound healing for patients who suffer from slow healing or non-healing of gastrointestinal tract.

ImmunoTools *special* AWARD for **Panithi Sukho** includes 25 reagents

recombinant human cytokines: rh FGF-b / FGF-2, rh HGF, rh IL-8, rh IL-10, rh IL-16, rh Leptin, rh VEGF-A/VEGF-165

human ELISA-set for 96 wells: human IFN-gamma, human IL-4, human IL-6, human IL-10, human TNF-a (each 4 reagents)

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