CALL FOR APPLICATION

PhD Grant - Industrial Postgraduate Programme (IPP)

Industry:	Choose and indicate 1 industry cluster from EDB Cluster groups here Consumer Business
Company:	Johnson and Johnson
Website:	https://www.jnj.com/healthcare-products/consumer
Company Contact: Email:	Melissa Tang Ltang36@its.jnj.com
Company Profile:	At Johnson & Johnson, we believe good health is the foundation of vibrant lives, thriving communities and forward progress. That's why for more than 130 years, we have aimed to keep people well at every age and every stage of life. Today, as the world's largest and most broadly based healthcare company, we are committed to using our reach and size for good. We strive to improve access and affordability, create healthier communities, and put a healthy mind, body and environment within reach of everyone, everywhere. We bring Johnson & Johnson's unique perspective as a leading healthcare company together with technology expertise and in partnership with skin experts and dermatologists to create high performance prestige and mass products for healthy skin. Our innovations include: personalized skin health assessments, treatments for acne and eczema, gentle skin-loving cleansers, moisturizers that repair the skin barrier and rebalance the skin's microbiome, and sunscreens that protect and defend against inflammation, premature aging, and skin cancer.

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NTU Faculty Supervisor	**Prof Maurice Van Steensel** **maurice.vansteensel@sris.a-star.edu.sg**
Name of School (e.g. EEE, MAE, SCSE)	**LKC School of Medicine**
IPP Trainees Position:	**1**
Requirements:	Singaporeans and Singapore Permanent Resident

EDB-IPP project:

Title: Identification of skin metabolite biomarkers for senescence as an early manifestation of ageing, and their potential role in vivo

Cellular senescence is an irreversible growth arrest that is a component of intrinsic aging. Senescence conveys the ability upon cells to produce a range of extracellular modulators such as cytokines and growth factors. This is the senescence-associated secretory phenotype (SASP). It can protect tissues from becoming cancerous by clearing malignant cells, but it can also lead to chronic inflammation and negatively impact vital processes such as wound healing. As such, the SASP is thought to contribute significantly to ageing and the associated organ dysfunction. There is mounting evidence that senescence is accelerated by extrinsic stressors such as pollution. Previously published data strongly suggest that interventions to reduce the number of senescent cells can delay tissue aging and dysfunction.

Senescence (and the SASP) in skin has an important role in skin ageing, and could potentially be addressed to slow down skin aging. Early aging in the skin is believed to be due to exposure to external stressors such as UV radiation and pollution, in particular PM2.5. There is increasing interest in addressing the early skin aging and its triggers, however there is presently no way to detect its presence in the skin. This project aims to identify novel biomarkers for skin senescence for the development of innovative anti-ageing approaches

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