



## ANALYSIS OF AIRWAY FIBROBLASTS CONDITIONED MEDIUM AND IT'S ROLE IN WOUND HEALING

Nundisa Jaulin<sup>1</sup>, Rohaina C Man<sup>1</sup>, Shiplu R Chowdhury<sup>1</sup>, Aminuddin B Saim<sup>2</sup>, Ruszymah Bt Hj Idrus<sup>1,3</sup>, and Yogeswaran Lokanathan<sup>1\*</sup>

<sup>1</sup>Tissue Engineering Centre, Faculty of Medicine, Universiti Kebangsaan Malaysia, Kuala Lumpur

<sup>2</sup>Ear, Nose and Throat Consultant Clinic, KPJ Ampang Puteri Specialist Hospital, Selangor

<sup>3</sup>Department of Physiology, Medical Faculty, Universiti Kebangsaan Malaysia, Kuala Lumpur

### ARTICLE INFO

Published: 26<sup>th</sup> August 2018  
\*Corresponding author:  
Yogeswaran Lokanathan  
Email:  
lvoges@bnuukm.ukm.edu.my

### KEYWORDS

Airway fibroblasts;  
Wound healing;  
Conditioned medium;  
Mass Spectrometry Analysis

### SUMMARY

**Introduction:** Human epithelium has self-repair capability after injury, and cell proliferation and migration are the crucial processes in wound repair. The proteins secreted by fibroblast had been shown to promote cells proliferation and migration. The objective of this study is to profile the protein in airway fibroblast conditioned medium (AFCM) and its role on wound healing in *in vitro* model. **Methods:** Redundant nasal turbinate was processed and airway fibroblast (AF) and airway epithelial cells (AECs) were co-cultured. Fibroblast cells were then separated by differential trypsinization. AFCM was prepared by incubating the cells either in serum free airway epithelium basal medium (AEBM) or in serum free F12: DMEM medium (FD) for 3 days and then collecting the waste medium. AFCM was supplemented to AECs in passage 2 to evaluate the effect on attachment, proliferation and migration rate. AF and AECs were characterized by immunocytochemistry (ICC). **Results:** ICC analysis showed that the AECs expressed MUC5AC, PanCK, CK18 and E-cadherin proteins while AF cells expressed vimentin. The cells seeding density, 7500 cells per cm<sup>2</sup> was chosen to be used in this experiment after the cell seeding optimization. The preliminary results showed that AFCM treated AECs have enhanced attachment, proliferation and migration. The AFCM was then cleaned and analyzed on SDS-PAGE. **Conclusion:** These preliminary results showed that proteins secreted by the airway fibroblast are involved in wound healing processes and these proteins will be further determined by mass spectrometry (MS) analysis.

**Acknowledgement:** This study was funded by Ministry of Higher Education, Malaysia (Fundamental Research Grant Scheme, FRGS/1/2016/SKK08/UKM/03/1).