

## Epithelial-Mesenchymal Transition (EMT) deregulation in reprogrammed Oral Squamous Cell Carcinoma (OSCC-iPSCs)

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### Abstract

Reprogramming, pluripotency and malignant transformation are interrelated processes controlled by epigenetic. The epigenetic mechanism during cancer cells reprogramming, somehow results in reversing the 'cancer state' by silencing oncogenes or activates tumour suppressor genes. Not only reversing the cell fate, suppression of epithelial to mesenchymal transition (EMT) related genes were also reported in recent studies. EMT is a biological process known to induce migratory phenotype of cancer cells, and greatly collaborates in the pathogenesis of cancer. EMT reversion acquired from reprogramming, which in turn could be used to explore the cancer epigenome. Herewith, we have successfully demonstrated reprogramming of H103 (OSCC - STNMP Stage I) as evident by pluripotent characterisations. Further downstream analysis was carried out to investigate the differential gene expression (DGE) patterns via microarray platform between parental H103 and H103-iPSCs. The overall DGE pattern showed deregulation of EMT genes indicating H103-iPSCs may have reduced tumorigenic properties upon reprogramming. The encouraging result of this in-vitro study has therefore confirmed its worthiness to study the tumour-suppression effect upon reprogramming, where H103-iPSCs might be of value in the future as in modelling OSCC pathogenesis and drug screening.

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**Keywords:** induced pluripotent stem cells; OSCC; reprogramming; EMT

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