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## EGF and TGF $\alpha$ motogenic activities are mediated by the EGF receptor: Identification of signaling pathways involved in oral cancer

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Epithelial to mesenchymal transition (EMT) is the process by which cells change shape from being tightly connected epithelial cells to more motile mesenchymal cell. EMT has been reported to facilitate cell migration. Cell motility is an initial first step on the road to metastasis. Epidermal growth factor receptor (EGFR) has been reported to be overexpressed in oral cancer and is often related with poor prognosis. Epidermal growth factor (EGF) and transforming growth factor (TGF $\alpha$ ) are ligands that bind to EGFR and can affect a number of different cellular processes such as proliferation, migration, apoptosis, etc. In this project, cell proliferation, migration, morphology change and EMT makers of HSG, AZA1, HacaT and TYS are measured by cell counting, scratch assay, photographic image capturing and immunofluorescence in related with addition of 1 ng/ml, 10 ng/ml, 50 ng/ml of EGF and TGF $\alpha$  incubated at different time point. 10 ng/ml and 50 ng/ml concentration induce morphology change (EMT like phenotype with finger like projection) and increase migration while there is not much difference in cell proliferation. These morphological changes are completely blocked by 1-hour pre-treatment with 5  $\mu$ M Gefitinib (EGFR tyrosine kinase inhibitor), 5  $\mu$ M Erlotinib (EGFR TK inhibitor) and 25  $\mu$ M PD (MAPK inhibitor) while there is no blockage of cell migration.

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