REDISTRIBUTION OF CYTOSOLIC FGFR1 AS A CONSEQUENCE OF INDUCED MIGRATION IN UROTHELIAL CELLS IN CULTURE

Peter Veranič a,*, Barbara Dariš a, Daša Zupančič a, Urška Batista b, Kristijan Jezernik a
a Institute of Cell Biology, Faculty of Medicine, University of Ljubljana, Ljubljana, Slovenia
b Institute of Biophysics, Faculty of Medicine, University of Ljubljana, Ljubljana, Slovenia
peter.veranic@mf.uni-lj.si

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ABSTRACT: The distribution of cytosolic fibroblast growth factor receptor 1 (FGFR1) was studied in correlation to cell migration in urothelial cell line g/G. Cell motility was analysed with a new method using consecutive series of photographs of cells relocated on CELLocate cover-slips and with image analysis software. The results confirmed that FGF 1 stimulated cell motility only when cells were grown on collagen I coating. A good correlation of the velocity of cell migration with the organisation of actin filaments and cell shape enabled the segregation of cells into two categories: sessile cells and migrating cells. During transition between these two cell phenotypes, a complete redistribution of cytosolic FGFR1 was revealed. In sessile cells, the FGFR1 had a filamentary distribution and its location matched cytokeratin 7. In cells of the migrating phenotype, however, the distribution of FGFR1 was diffuse, mainly in cytosol, with no relation to the cytoskeleton and with only a minor fraction co-localised with endomembranes. Our data reveal that the location of cytosolic FGFR1 depends on the motile characteristics of the cell. The results also indicate that attachment of cells to collagen I is crucial for the induction of urothelial cell motility with FGF1.

A) FGFR1 (↑) is in sessile cells filamentary distributed and co-localized with cytokeratin 7 (gray filaments). B) In migrating cells the distribution of FGFR1 (↑) is diffuse.