

ROLE OF FGFR1 IN THE ANGIOGENIC RESPONSE INDUCED BY PGE2

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Prostaglandin E2 (PGE2) has been shown to play a key role in inducing angiogenesis, however, the functional and molecular mechanism by which PGE2 induces this process is not completely understood. We investigated the actions of PGE2 on microvascular endothelial cells (CVEC) with the purpose of delineating the signalling pathway leading to the acquisition of the angiogenic phenotype. We demonstrate that PGE2-induced endothelial migration occurs via rapid activation and phosphorylation of the fibroblast growth factor receptor-1 (FGFR-1). Moreover, PGE2 induces ERK1/2 activation, an effect that was abolished by FGFR-1-specific tyrosine kinase inhibitor, SU5402. The rapid activation of FGFR-1 occurs via the intracellular activation of c-Src, as well as the matrix metalloproteinase mediated-release of the extracellular fibroblast growth factor-2 (FGF-2) ligand. This study provides evidence for the involvement of FGFR1 in the PGE2 induced endothelial cell migration.

This work was supported by EEC EICOSANOX Project (LSHM-CT-2004-0050333) and NUGO Project (FOOD-CT-2004-506360)