P023 The role of cell adhesion on signalling via the ErbB family of receptors

X. Alexis, E.V. Odintsova, and F. Berditchevski
CRUK Institute for Cancer Studies, University of Birmingham, Vincent Drive, Edgbaston, Birmingham B15 2TT, UK

Cell adhesion affects signalling via the ErbB family of receptors but the underlying mechanisms are not completely understood. We aimed to characterize the role of integrin mediated cell adhesion in the ligand induced phosphorylation of EGFR and ErbB2 proteins in the epithelial cell system.

In contrast to previously published data we show that cell adhesion to ECM does not induce ligand independent phosphorylation of EGFR in the epithelia cell system. However, attachment to ECM ligands (Laminin5, Collagen1 and Fibronectin) potentiates EGF-induced phosphorylation of EGFR and ErbB2, when compared to non-attached cells or cells attached to PolyLlysine. Cell attachment to Laminin5 has a similar effect on the phosphorylation of EGFR and ErbB2 after stimulation with TGFα. In contrast, the effect of the ECM on the phosphorylation of ErbB receptors was less apparent when cells were treated with HRG. No significant differences were observed when we analysed the effect of Laminin5 on the site-specific phosphorylation of EGFR and ErbB2.

We hypothesise that the effect of the ECM on the phosphorylation of the EGFR/ErbB2 receptors, results from ECM induced differences in receptor dimerisation. We are currently testing this hypothesis.