Title: The receptor(s) and signalling molecules downstream of prostaglandin that promote αvβ6-dependent invasion

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Abstract

Integrins are a family of heterodimeric cell surface receptors, which are expressed on most cells where they mediate cell-cell and cell-extracellular matrix interactions. The integrin αvβ6 is not expressed constitutively by healthy oral epithelia, but is up-regulated during tissue remodelling, including that accompanying wound healing and carcinogenesis. Previously it was shown that invasion by oral squamous cell carcinoma (OSCC) cells is mediated by αvβ6 but requires Cyclooxygenase-2 (COX-2)-dependent production of prostaglandin. Both αvβ6 and COX-2 are significantly higher in OSCC compared with oral epithelial dysplasias. The COX-2 inhibitor NS398 was shown to inhibit specifically αvβ6-dependent OSCC invasion in vitro and in vivo and this effect was modulated through prostaglandin E_2 (PGE_2)-dependent activation of Rac-1. The present study investigates further the signalling molecules downstream of prostaglandin that promote αvβ6-dependent invasion.