Retrovirology

Oral presentation

Tumor-Endothelium Interactions – Novel Pathways

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from 2005 International Meeting of The Institute of Human Virology
Baltimore, USA, 29 August – 2 September 2005

Published: 8 December 2005

Retrovirology 2005, **2**(Suppl 1):S51 doi:10.1186/1742-4690-2-S1-S51

A significant manifestation of tumor-endothelium interactions is the release of the proinflammatory cytokines IL-1β or TNFα from tumor cells. These cytokines induce the expression of E-selectin molecules on endothelial cells (EC). The expression of E selectin on EC facilitates contact with selectin ligand-expressing cancer cells thus promoting their transendothelial migration.

We reported previously that factors released from cultured head and neck squamous carcinoma cells into the culture medium, induced the release of monocyte chemoattractants from EC. In view of the potential significance of this finding to tumor progression, we asked whether colorectal cancer (CRC) cells also secrete factors capable of inducing up regulating the expression of chemokines in, and their release from EC.

A cDNA-microarray analysis of EC treated with culture supernatants of CRC cells revealed that the expression of several CXC chemokines, including CXCL-1 and CXCL-8, was up regulated in EC exposed to the tumor-derived factors. These results were confirmed by RT-PCR. The treated EC secreted higher amounts of CXCL-1 and CXCL-8 than untreated, control EC. These chemokines are involved in tumor progression. Several lines of evidence suggest that E-selectin is involved in the delivery of the CRC-derived chemokine-secretion-enhancing signals to the EC. Experiments to characterize the CRC-derived molecules that mediate these signals are under way.