

P015 A mechanistic role for L-plastin in colorectal cancer progression?
Foran, E., Mc William, P., Croke, D.T. and Long, A.
*Dept of Biochemistry, Royal College of Surgeons in Ireland,
St. Stephen's Green, Dublin 2.*

Our group has previously identified a set of genes to be differentially expressed between the premetastatic colon cancer cell line SW480 and its metastatic counterpart, SW620. One of these, L-plastin, was found to be up-regulated in SW620 with respect to SW480. The L-plastin gene codes for an actin-bundling protein which is usually expressed only in hemopoietic cell types. However its expression is induced in 68% of carcinomas and 53% of other non-hemopoietic cancers. The aim of this study was to characterise the effect of L-plastin over-expression on SW480 cells.

SW480 cell lines stably expressing L-plastin were established (SW480-LPL) and subsequent analysis revealed a significantly higher rate of proliferation and invasion, and a lower rate of migration than the mock-transfected cell line. Adhesion assays showed decreased attachment of SW480-LPL cells to collagen IV. The expression of E-cadherin, an important tumour suppressor gene was lost from SW480-LPL cells. Soft agar assays revealed that SW480-LPL cells lost the ability to form adhesion independent colonies when compared with the control mock-transfected cell line, consistent with loss of E-cadherin expression. In summary, L-plastin expression is associated with an increased rate of proliferation and invasion and loss of E-cadherin expression in the SW480-LPL colon cancer cell line. These data indicate that L-plastin plays an important mechanistic role in colorectal cancer metastasis.