P038 Proteomic analysis of integrin-based protein complexes.

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The interactions of integrin cytoplasmic domains with cytoskeletal, adaptor and signalling molecules are central to regulation of integrin-mediated cellular functions. The composition and regulation of integrin signalling complexes, however, requires further elaboration and forms the basis of key questions in the field. Proteomics provides the opportunity to examine global sample composition and was applied here to the analysis of integrin signalling complexes.

In order to analyse ligand-induced, integrin-based protein complexes, we have developed an affinity isolation method. Integrin ligand–coated paramagnetic beads specifically recruited known integrin-associated proteins from K562 human erythroleukemia cells, whereas non–integrin-binding control beads did not, as determined by immunoblotting. Furthermore, liquid chromatography–tandem mass spectrometry (LC-MS/MS) revealed key components that validated this strategy, and here we present a detailed analysis of the composition of these integrin-bound complexes. Together, these methods provide a novel approach for the analysis of the dynamic composition of integrin signalling complexes.