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**Determining Protein-Protein Interactions Using Protein Arrays:
Relevance to Platelet Biology**

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Abstract

Whereas the Human Genome Project has successfully identified all human genes and their corresponding proteins, the next challenge in biology is to understand how these proteins interact with each other in a dynamic cell system. My lab is interested in the molecular mechanisms of integrin activation in the human platelet in order to better understand thrombotic disease. Using the platelet as a model system therefore, we explored various mechanisms of elucidating relevant protein interactions with integrin cytoplasmic tails. The inadequacy of many of the conventional methods is discussed in this presentation. However, in our case, the use of the novel protein array technology, available in the Centre for Human Proteomics, allowed us to identify a number of important, novel protein interactions that participate in regulation of integrin function in the platelet. Verification of these interactions proved to be the next bottleneck in the process and needs to be tailor made for each specific protein. This usually involves a combination of literature-searching, bio-informatics and basic cell-biology techniques.

The conclusion of this presentation will highlight the importance of **choosing** an appropriate system for exploring protein:protein interactions; **identifying** relevant association and eliminating non-specific interactions, and finally emphasising the importance of relevant **verification** in this process. We have termed this process Protein **ENONOMICS** from the Greek term for interaction and claim that it is the next emerging 'omic' after *proteomics*!