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“Using systematic extracellular protein interaction screens to identify receptors that are essential for cellular recognition processes”



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Donnelly Centre James Friesen |
Cecil Yip Red Seminar Room

Abstract:

Extracellular interactions between membrane-embedded cell surface receptor proteins play important roles in cellular recognition events that are central to many basic biological processes. Experimentally identifying these interactions is technically challenging due to the largely intractable biochemical nature of membrane proteins, as well as the weak interaction affinities that typify this class of protein interactions. We have developed methods to identify these highly transient interactions in a systematic and scalable way based around creating soluble recombinant highly avid oligomerised ectodomain probes. We have applied these approaches to several important unanswered problems of cellular recognition including the invasion of human erythrocytes by the malaria parasite (Crosnier et al. Nature 2011), and more recently, identified the receptor-ligand pair required for mammalian fertilization (Bianchi et al. Nature 2014).

Host: Dr. Igor Stagljar