

# SIgN Immunology Seminar



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### Fighting Infection: Preventing the Adhesion of Pathogenic Bacteria

*Host*  
Dr Wong Siew  
Cheng  
Singapore  
Immunology  
Network, A\*Star

*Date*  
**Tuesday**  
**17 March 2015**

*Time*  
11am – 12pm

*Venue*  
SIgN Seminar  
Room  
Immunos  
Building  
Level 4  
Biopolis

Infection by pathogenic bacteria is an increasingly serious problem. Although antibiotics are available, they are becoming less useful as resistance increases and so new treatments are urgently required. We have discovered a set of peptides that are able to stop a wide range of disease-causing bacteria attaching to human cells. The peptides mimic a family of proteins, tetraspanins, which are found on many human cells. Tetraspanins are self-assembling proteins that form temporary rafts in the cell membrane, gluing together a whole host of other molecules that act in concert to form structures such as adhesion platforms, by which cells can communicate, fuse, adhere or move relative to each other in a coordinated fashion. Some types of bacteria have evolved to “hijack” the tetraspanin adhesion platforms so that they can stick to and enter cells. By weakening the interaction with cells, bacteria such as *Staphylococcus aureus* are made much more sensitive to existing antibiotics and so represent an important new intervention.