# Atomic resolution basis for host cell recognition by apicomplexan parasites and pathogenic bacteria

Stephen Matthews, T. Blumenschein, N. Friedrich, N. Korotkova, E. Carpenter, Y. Yang, E. Cota, B. Liu, J. Marchant, S. Saouros, K. Sawmynaden, S. Moseley, and D. Soldati
Division of Molecular Biosciences, Imperial College London, Exhibition Road, London, SW7 2AZ, UK.

Pathogens possess adhesion-protein complexes that play essential roles in targeting host cells and in propagating infection. Using X-ray crystallography and the latest NMR methodology we have embarked on several structural studies of several adhesion complexes. We demonstrate our approach on a key microneme complex from *Toxoplasma gondii*. Not only do we provide high-resolution structural information but interpretation of NMR data has enabled us to reveal new insights into binding interfaces and stoichiometry. We have also combined newly solved 3D structures with microarrays and functional assays, and uncovered new features regarding parasite-receptor interactions. We are now in a position to begin constructing robust models that will reveal the structural basis for assembly, architecture and host recognition. Structural, dynamic and biochemical studies on adhesion complexes from bacterial pathogens will also be presented. New unpublished results and conclusions will be discussed.

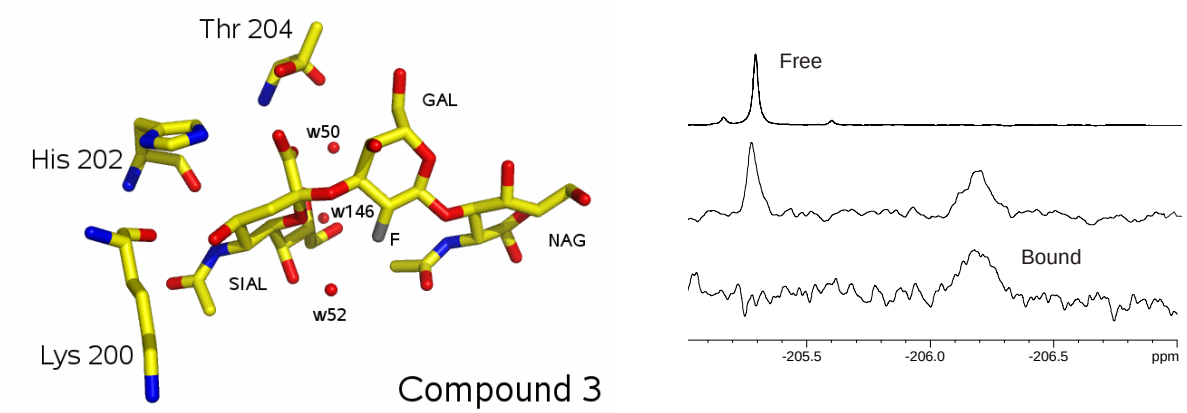


Figure: Crystal structure of MIC1-MAR with NeuAcα2-3**(2F)**Galβ1-3GlcNAc (left) $^{19}$F NMR spectrum of NeuAcα2-3**(2F)**Galβ1-3GlcNAc in the absence and presence of MIC1-MAR (right)

**References**

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