

Principal Investigator: Michael P Jennings

Grant title: Investigation of multiple novel lectin functions of human complement receptor 3.

Abstract

The β 2-integrin receptors expressed by macrophages and neutrophils have been the subject of intensive study over many years. Human complement receptor 3 (CR3, also known as CD11b/CD18 and MAC-1) consists of two subunits; CD11b and CD18. This complex is unique amongst β 2-integrins as CD11b has two distinct domains, an I-domain and a lectin domain. Binding of carbohydrates by CD11b is believed to be via the lectin domain. In recent studies we have followed up on our observation that the I-domain of CD11b has lectin activity. We have identified multiple distinct lectin activities in CD11b that may have crucial roles in innate immune interactions.



1. Objectives: The objective of this study is to further investigate the lectin activity of CD11b.
2. Methods used: We used surface plasmon resonance and molecular modelling to identify and characterize CD11b lectin activity.
3. Results: We have identified, multiple distinct high affinity lectin activities in CD11b that may have crucial roles in innate immune interactions.