

Publication

2VQ1: Anti Trimeric Lewis X Fab54-5C10-A

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Lewis X trisaccharides normally function as essential cell-cell interaction mediators. However, oligomers of Lewis X trisaccharides expressed by the parasite *Schistosoma mansoni* seem to be related to its evasion of the immune response of its human host. Here we show that monoclonal antibody 54-5C10-A, which is used to diagnose schistosomiasis in humans, interacts with oligomers of at least three Lewis X trisaccharides, but not with monomeric Lewis X. We describe the sequence and the 2.5 Å crystal structure of its Fab fragment and infer a possible mode of binding of the polymeric Lewis X from docking studies. Our studies indicate a radically different mode of binding compared to Fab 291-2G3-A, which is specific for monomeric Lewis X, thus providing a structural explanation of the diagnostic success of 54-5C10-A.

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