Crystal structure of a T-cell receptor beta-chain complexed with a superantigen.

Superantigens (SAgs) are viral or bacterial proteins that act as potent T-cell stimulants and have been implicated in a variety of human diseases. SAgs are unique in that they are not recognized by MHC molecules, but instead stimulate T-cells through non-specific mechanisms. In this way, the SAg is able to circumvent the normal mechanism for T-cell activation by specific peptide/MHC complexes. The crystal structure of a T-cell receptor beta-chain complexed with a superantigen provides insights into the molecular basis of T-cell activation by SAgs and may have implications for the development of new therapeutic strategies for diseases associated with SAg activity.