Structural study of BCR signaling subunit Igα/Igβ

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B-cell receptor plays a central role in activation, growth and differentiation of B cells. It is composed of the membrane bound immunoglobulin and the signaling subunit, which is disulfide-linked heterodimer Ig-alpha/Ig-beta. Structural information about immune receptor complex is important for understanding signal transduction mechanisms. In order to solve 3D structure of signaling subunit of BCR, we generated several constructs containing different parts of Ig-alpha/Ig-beta heterodimer. Also, to proof possible contribution of tyrosine phosphorylation to conformational change of Ig-alpha/Ig-beta complex, tyrosine-to-phenylalanine or tyrosine-to-glutamic acid substitution mutants were introduced. After optimization of expression and purification conditions, these constructs were probed by protein crystallography and NMR spectroscopy.