Abstract BIOSS Seminar Gina Fiala 30.04.2013

Identification of a novel B cell receptor subunit

Signals received through the B cell antigen receptor (BCR) play a central role in development, survival and activation of B lymphocytes. Composition and stoichiometry of the BCR has been intensively studied in cell lines, where it has been described to consist of the mIg:Ig-α/Ig-β complex with a stoichiometry of 1:1 (Venkitaraman et al.; 1991; Homach et al., 1988; Schamel and Reth, 2000; Swamy et al., 2007). Biochemical evidences for these findings in primary B cells have been still missing. Using blue native polyacrylamide gel electrophoresis (BN-PAGE) we demonstrate that in primary murine B cells two differently sized BCR complexes co-exist. Besides the described conventional BCR, a second BCR complex of higher molecular weight (BCR X) is expressed, incorporating a novel BCR subunit X. BCR X forms independent of BCR phosphorylation and does not show any BCR isotype restriction. Using a SILAC-based mass spectrometry approach we identified candidate proteins for this novel BCR subunit X, which we are currently testing with the aim to shed light on BCR X identity and function in primary B cells.