CD22 mediated BCR regulation

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Introduction

Reactome is open-source, open access, manually curated and peer-reviewed pathway database. Pathway annotations are authored by expert biologists, in collaboration with Reactome editorial staff and cross-referenced to many bioinformatics databases. A system of evidence tracking ensures that all assertions are backed up by the primary literature. Reactome is used by clinicians, geneticists, genomics researchers, and molecular biologists to interpret the results of high-throughput experimental studies, by bioinformaticians seeking to develop novel algorithms for mining knowledge from genomic studies, and by systems biologists building predictive models of normal and disease variant pathways.

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Literature references


Reactome database release: 71

This document contains 1 pathway and 4 reactions (see Table of Contents)
BCR activation is highly regulated and coreceptors like CD22 (SIGLEC2) set a signalling threshold to prevent aberrant immune response and autoimmune disease (Cyster et al. 1997, Han et al. 2005). CD22 is a glycoprotein found on the surface of B cells during restricted stages of development. CD22 is a member of the receptors of the sialic acid-binding Ig-like lectin (Siglec) family which binds specifically to the terminal sequence N-acetylneuraminic acid alpha(2-6) galactose (NeuAc-alpha(2-6)-Gal) present on many B-cell glycoproteins (Powell et al. 1993, Sgroi et al. 1993). CD22 has seven immunoglobulin (Ig)-like extracellular domains and a cytoplasmic tail containing six tyrosines, three of which belong to the inhibitory immunoreceptor tyrosine-based inhibition motifs (ITIMs) sequences. Upon BCR cross-linking CD22 is rapidly tyrosine phosphorylated by the tyrosine kinase Lyn, thereby recruiting and activating tyrosine phosphatase, SHP-1 and inhibiting calcium signalling.

**Literature references**


**Editions**

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CD22 binds itself to form homo-oligomers

Location: CD22 mediated BCR regulation

Stable identifier: R-HSA-5690669

Type: transition

Compartments: plasma membrane