

Syk activation leads to SLP-76 activation

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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

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Reactome database release: 88

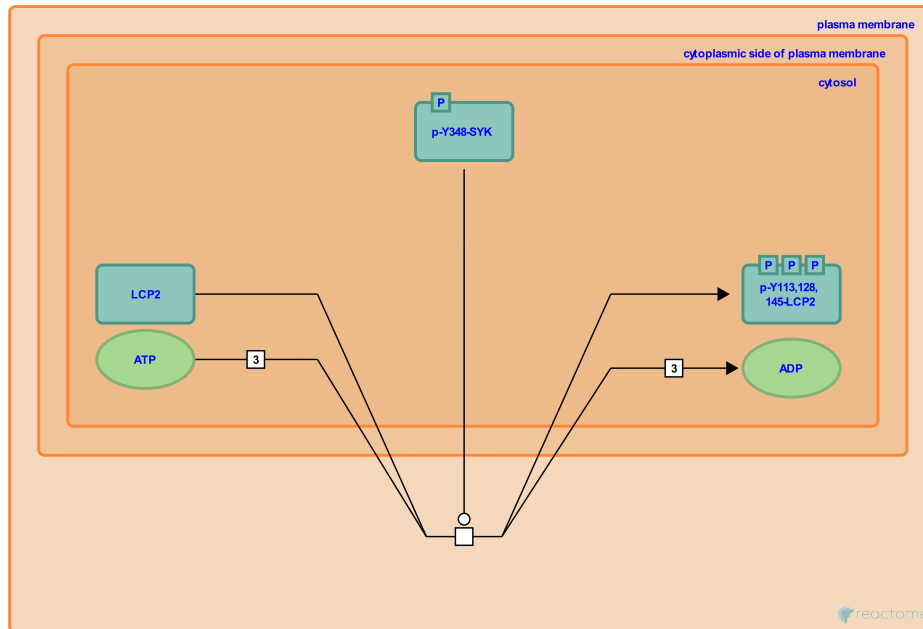
This document contains 1 reaction ([see Table of Contents](#))

Syk activation leads to SLP-76 activation [↗](#)

Stable identifier: R-HSA-429449

Type: transition

Compartments: plasma membrane



Stimulation of platelets with collagen-related peptide leads to tyrosine phosphorylation of SLP-76, an adaptor protein with multiple binding domains (Gross et al. 1999). Phosphorylation of SLP-76 is mediated by Syk, analogous to the role of ZAP-70 in phosphorylating T-cell SLP-76 (Bubeck-Wardenberg et al. 1996, Hussain et al. 1999, Fasbender et al. 2017). SLP-76 was shown to bind to tyrosine-phosphorylated C-terminal tail of SYK (de Castro et al. 2012). The phosphorylated tyrosine residues provide a binding site for the SH2 domains of downstream signalling proteins like Vav, Itk and ADAP (Jordan et al. 2003). Platelets from mice defective in SLP76 do not connect GPVI engagement with downstream signaling (Clements et al. 1999, Judd et al. 2000). GPVI signaling via SLP-76 does not appear to require LAT or GADS (Judd et al. 2002) suggesting that the mechanism is not identical to that of T-cells. LAT and SLP-76 are both required for P-selectin expression and degranulation but may function independently, or rely on proteins not required by T-cells (Jordan et al. 2003).

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Editions

2009-06-03	Authored	Akkerman, JW.
2009-11-02	Reviewed	Poole, AW., Jones, ML., Harper, MT.
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