

STAT3 is phosphorylated downstream of active ALK

Inghirami, G., Rothfels, K., Turner, S.

European Bioinformatics Institute, New York University Langone Medical Center, Ontario Institute for Cancer Research, Oregon Health and Science University.

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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

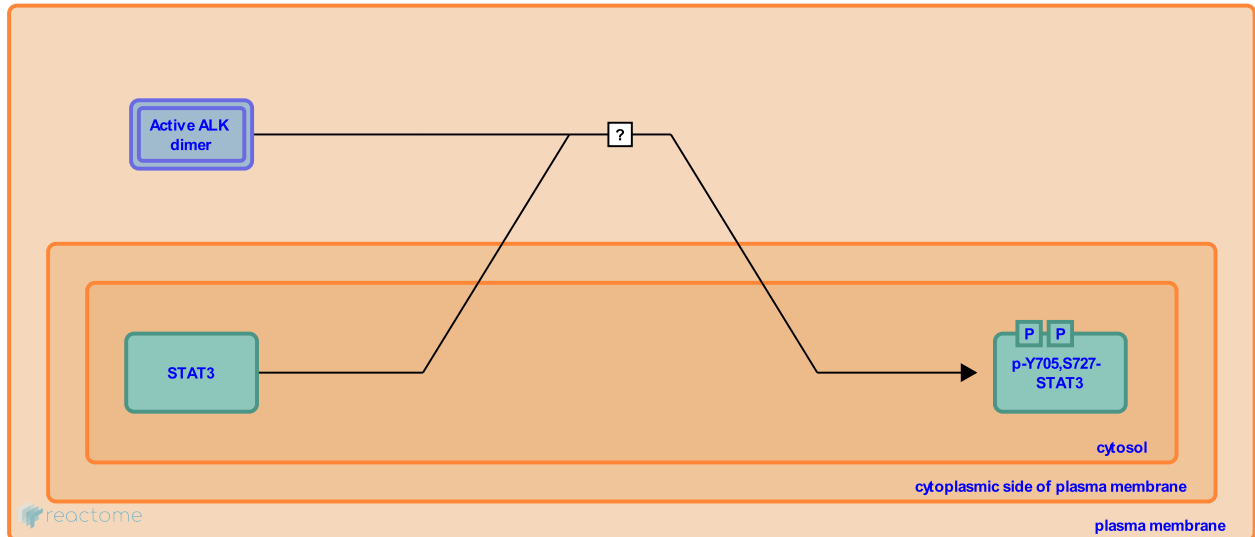
This document contains 1 reaction ([see Table of Contents](#))

STAT3 is phosphorylated downstream of active ALK [↗](#)

Stable identifier: R-HSA-9701524

Type: uncertain

Compartments: plasma membrane, cytosol



STAT3 is phosphorylated at tyrosine 705 downstream of active ALK and oncogenic ALK fusion proteins and contributes to cellular survival (Zamo et al, 2002; Zhang et al, 2002; Amin et al, 2003; Chiarle et al, 2003; Chiarle et al, 2005; Sattu et al, 2013; reviewed in Turner and Alexander, 2006; Chiarle et al, 2008; Palmer et al, 2009). Whether STAT3 activation downstream of ALK is mediated directly by the receptor itself or depends on JAK3 is controversial (Zhang et al, 2002; Han et al 2006 a,b; Lai et al, 2005; Marzec et al. 2005; Shi et al, 2006; reviewed in Palmer et al, 2009). STAT3 is also phosphorylated at serine 727 in a manner that depends on the PI3K, mTOR and MAPK pathways. The functional significance of S727 phosphorylation is not entirely clear (Gambi et al, 2019). STAT3 supports cell survival by promoting the expression of a number of cell cycle and anti-apoptotic genes (reviewed in Chiarle et al, 2008).

Literature references

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Editions

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