IL37(-218):p-S423,S425-SMAD3 translocates to the nucleus

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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: 83

This document contains 1 reaction (see Table of Contents)

https://reactome.org
Interleukins (IL) are immunomodulatory proteins that elicit a wide array of responses in cells and tissues. Interleukin 37 (IL 37), also known as IL 1F7, is a member of the IL 1 family. There are five isoforms of IL 37 (a e) of which transcript IL 37b is known to be functional (Sharma S et al., 2008). Like several other IL 1 family members, IL 37b is synthesized as precursors that require processing (primarily by caspase 1) to attain full receptor agonist or antagonist function (Kumar S et al., 2002). Mothers against decapentaplegic homolog 3 (SMAD3) binds SMAD4 and this complex modulates the transcription of several genes downstream. Processed IL 37b can bind with phosphorylated SMAD3 in the cytosol of A549 cells (Nold M F et al., 2010, Grimsby S et al., 2004). This complex may then translocate from the cytosol to the nucleus (Nold M F et al., 2010, Dinarello et al. 2016) and may affect the function of SMAD3. These events ultimately lead to suppression of cytokine production in several types of immune cells resulting in reduced inflammation. This is a black box event because SMAD3 assisted IL-37 translocation to the nucleus is not fully understood.

**Literature references**

