IL37(?-218) binds SMAD3

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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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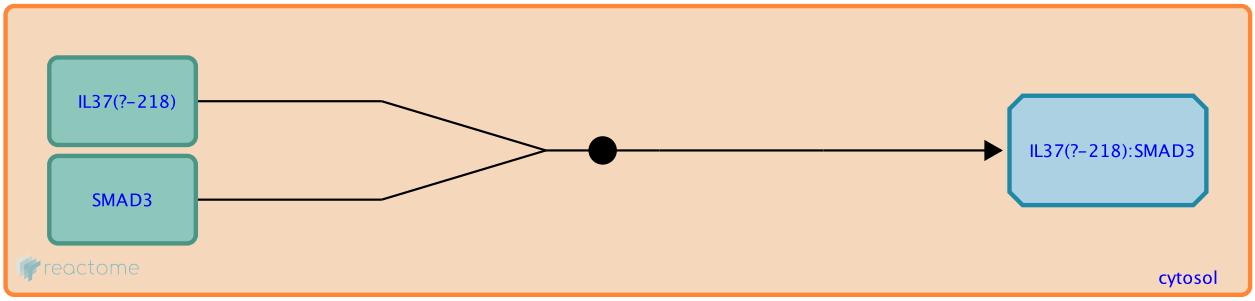
Stable identifier: R-HSA-9008692

Type: binding

Compartments: cytosol



Interleukins (IL) are immunomodulatory proteins that elicit a wide array of responses in cells and tissues. Interleukin 37 (IL-37, IL-1 F7) 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 et al. 2008). This isoform is represented in UniProt as the canonical form of IL-37 and in Reactome as the full length, unprocessed form of IL-37. Like several other IL-1 family members, IL-37 is synthesized as a precursor that requires processing (primarily by caspase 1) to attain full receptor agonist or antagonist function. The putative caspase 1 cleavage site is at aspartic acid 20 (Kumar et al. 2002). Mothers against decapentaplegic homolog 3 (SMAD3) binds SMAD4 and this complex modulates the transcription of several genes downstream. IL-37(? 218) can bind SMAD3 (Nold M F et al. 2010, Grimsby S et al. 2004) and may affect its function.

Literature references

Nold, MF., Nold-Petry, CA., Zepp, JA., Palmer, BE., Bufler, P., Dinarello, CA. (2010). IL-37 is a fundamental inhibitor of innate immunity. *Nat. Immunol., 11*, 1014-22. ↗

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Editions

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