

IL19 binds IL20RA:JAK1:IL20RB

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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

- Fabregat, A., Sidiropoulos, K., Viteri, G., Forner, O., Marin-Garcia, P., Arnau, V. et al. (2017). Reactome pathway analysis: a high-performance in-memory approach. *BMC bioinformatics, 18,* 142. 7
- Sidiropoulos, K., Viteri, G., Sevilla, C., Jupe, S., Webber, M., Orlic-Milacic, M. et al. (2017). Reactome enhanced pathway visualization. *Bioinformatics*, 33, 3461-3467. A
- Fabregat, A., Jupe, S., Matthews, L., Sidiropoulos, K., Gillespie, M., Garapati, P. et al. (2018). The Reactome Pathway Knowledgebase. *Nucleic Acids Res, 46*, D649-D655. ↗
- Fabregat, A., Korninger, F., Viteri, G., Sidiropoulos, K., Marin-Garcia, P., Ping, P. et al. (2018). Reactome graph database: Efficient access to complex pathway data. *PLoS computational biology*, *14*, e1005968. *オ*

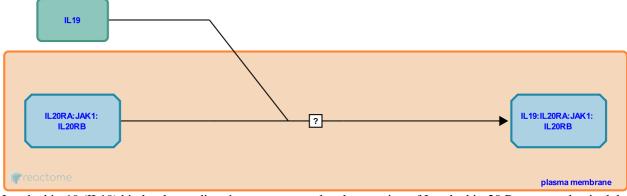
This document contains 1 reaction (see Table of Contents)

IL19 binds IL20RA:JAK1:IL20RB 7

Stable identifier: R-HSA-448728

Type: uncertain

Compartments: extracellular region, plasma membrane, cytosol



Interleukin-19 (IL19) binds a heterodimeric receptor complex that consists of Interleukin-20 Receptor subunit alpha (IL20RA) associated with Tyrosine-protein kinase JAK1 (JAK1) and Interleukin-20 receptor subunit beta (IL20RB). Interleukin-20 receptor A (IL20RA) and Interleukin-20 receptor B (IL20RB) form a receptor complex for Interleukin-19 (IL19) (and Interleukin-20 (IL20) and Interleukin-24 (IL24)) (Gallagher et al. 2000, Blumberg et al. 2001, Parrish-Novak et al. 2002, Logsdon et al. 2012, Rutz et al. 2014, Pletnev et al. 2003).

This is a black box event because it is not clear whether the dimeric receptor can form in the absence of ligand.

Literature references

- Logsdon, NJ., Rajashankar, KR., Harris, BD., Deshpande, A., Walter, MR. (2012). Structural basis for receptor sharing and activation by interleukin-20 receptor-2 (IL-20R2) binding cytokines. *Proc. Natl. Acad. Sci. U.S.A.*, 109, 12704-9. 7
- Pletnev, S., Kozlov, S., Tobin, G., Zdanov, A., Magracheva, E., Wlodawer, A. et al. (2003). Characterization of the recombinant extracellular domains of human interleukin-20 receptors and their complexes with interleukin-19 and interleukin-20. *Biochemistry*, 42, 12617-24.
- Madden, K., Chandrasekher, YA., Yao, L., Brandt, C., Foster, DC., Jelinek, L. et al. (2002). Interleukins 19, 20, and 24 signal through two distinct receptor complexes. Differences in receptor-ligand interactions mediate unique biological functions. J Biol Chem, 277, 47517-23.
- Peat, JD., Gallagher, G., Vazquez, N., Dickensheets, H., Donnelly, RP., Pestka, S. et al. (2000). Cloning, expression and initial characterization of interleukin-19 (IL-19), a novel homologue of human interleukin-10 (IL-10). *Genes Immun.*, 1, 442-50. *¬*

Editions

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