JAK1 in IL24:IL20RA:JAK1:IL20RB is phosphorylated

Datta, SK., Duenas, C., Jupe, S.
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.

The development of Reactome is supported by grants from the US National Institutes of Health (P41 HG003751), University of Toronto (CFREF Medicine by Design), European Union (EU STRP, EMI-CD), and the European Molecular Biology Laboratory (EBI Industry program).

Literature references


Reactome database release: 82

This document contains 1 reaction (see Table of Contents)

https://reactome.org
Tyrosine-protein kinase JAK1 (JAK1) is phosphorylated after Interleukin-24 (IL24) ligand interaction with its receptor. There are two IL24 receptors. One consists of Interleukin-20 receptor subunit alpha (IL20RA), Tyrosine-protein kinase JAK1 (JAK1) and Interleukin-20 receptor subunit beta (IL20RB), the other uses Interleukin-22 receptor subunit alpha-1 (IL22RA1) instead of IL20RA (Dumoutier et al. 2001, Wang et al. 2002). IL24 can stimulate JAK1 phosphorylation in human colonic subepithelial myofibroblasts, where the components of both forms of the IL24 receptor are expressed (Andoh et al. 2009). It has been demonstrated that both forms of the IL24 receptor can activate STAT3 (Dumoutier et al. 2001, Wang et al. 2002). Based on the consensus understanding of JAK/STAT signaling, STAT3 activation is very likely to be preceded by JAK1 phosphorylation and it is therefore likely that JAK1 is phosphorylated in both forms of the IL24 receptor.

This is a black box event because it has not been established that both forms of the IL24 receptor are involved in JAK1 phosphorylation.

**Literature references**


**Editions**

<table>
<thead>
<tr>
<th>Date</th>
<th>Action</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017-03-16</td>
<td>Authored</td>
<td>Duenas, C.</td>
</tr>
<tr>
<td>2017-11-07</td>
<td>Edited</td>
<td>Jupe, S.</td>
</tr>
<tr>
<td>2017-11-15</td>
<td>Reviewed</td>
<td>Datta, SK.</td>
</tr>
</tbody>
</table>