Phosphorylation of human JNKs by activated MKK4/MKK7

Gay, NJ., Luo, F., Shamovsky, V.

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

The contents of this document may be freely copied and distributed in any media, provided the authors, plus the institutions, are credited, as stated under the terms of Creative Commons Attribution 4.0 International (CC BY 4.0) License. For more information see our license.

21/11/2021
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: 78

This document contains 1 reaction (see Table of Contents)
Phosphorylation of human JNKs by activated MKK4/MKK7

Stable identifier: R-HSA-168162

Type: transition

Compartments: cytosol

Activated human JNK kinases (MKK4 and MKK7) phosphorylate Thr183 and Tyr185 residues in the characteristic Thr-Pro-Tyr phosphoacceptor loop of each JNK.

JNK is differentially regulated by MKK4 and MKK7 depending on the stimulus. MKK7 is the primary activator of JNK in TNF, LPS, and PGN responses. However, TLR3 cascade requires both MKK4 and MKK7. Some studies reported that in three JNK isoforms tested MKK4 shows a striking preference for the tyrosine residue (Tyr-185), and MKK7 a striking preference for the threonine residue (Thr-183).

Literature references


Editions

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Author</th>
<th>Date</th>
<th>Event</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009-12-16</td>
<td>Edited, Revised</td>
<td>Shamovsky, V.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>