

# NEMO binds polyubiquitinated IRAK1

Jupe, S., Pinteaux, E., Ray, KP.

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

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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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Reactome database release: 74

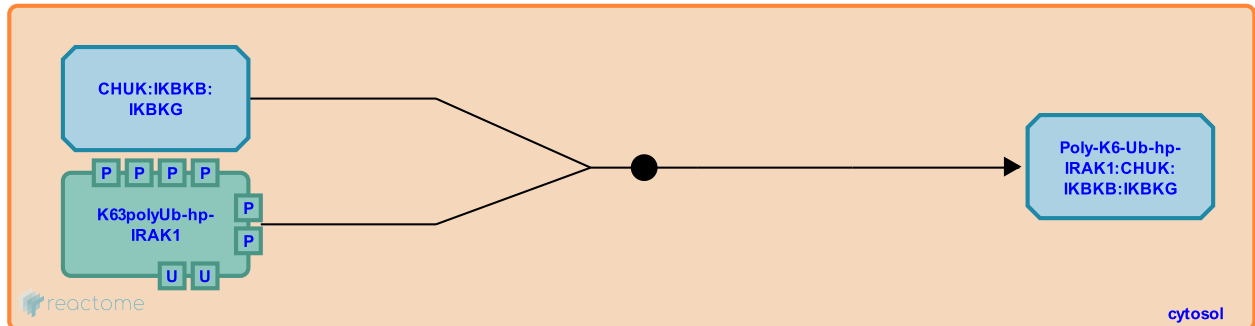
This document contains 1 reaction ([see Table of Contents](#))

## NEMO binds polyubiquitinated IRAK1 [↗](#)

**Stable identifier:** R-HSA-451561

**Type:** binding

**Compartments:** cytosol, plasma membrane



NF-kappa-B essential modulator (NEMO, also known as IKKG abbreviated from Inhibitor of nuclear factor kappa-B kinase subunit gamma) is the regulatory subunit of the IKK complex which phosphorylates inhibitors of NF-kappa-B leading to dissociation of the inhibitor/NF-kappa-B complex. NEMO binds to K63-pUb chains (Ea et al. 2006; Wu et al. 2006), linking K63-pUb-hp-IRAK1 with the IKK complex. Models of IL-1R dependent activation of NF-kappaB suggest that the polyubiquitination of both TRAF6 and IRAK1 within a TRAF6:IRAK1 complex and their subsequent interactions with the TAK1 complex and IKK complex respectively brings these complexes into proximity, facilitating the TAK1-catalyzed activation of IKK (Moynagh, 2008).

### Literature references

Windheim, M., Stafford, M., Peggie, M., Cohen, P. (2008). Interleukin-1 (IL-1) induces the Lys63-linked polyubiquitination of IL-1 receptor-associated kinase 1 to facilitate NEMO binding and the activation of IkappaBalpha kinase. *Mol Cell Biol*, 28, 1783-91. [↗](#)

### Editions

2010-05-17	Edited	Jupe, S.
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