IRAK2 phosphorylation bound to the activated TLR7 (or TLR21) complex

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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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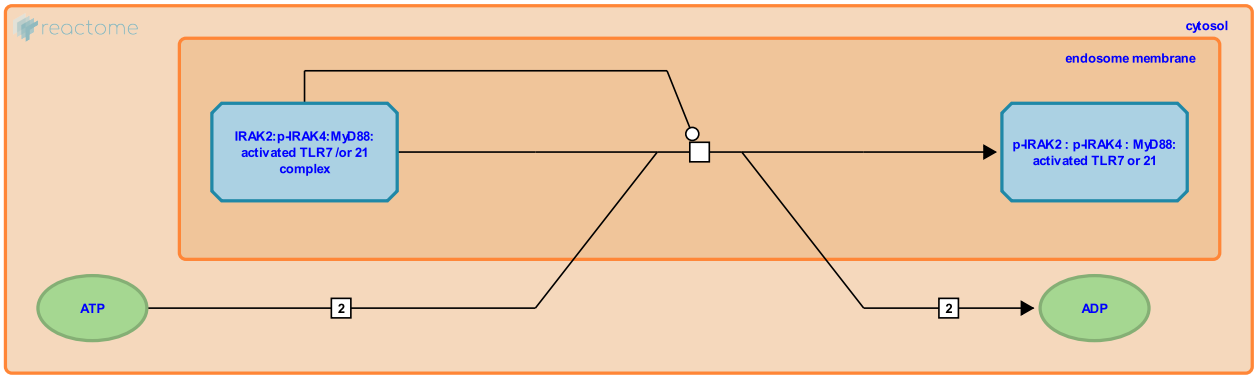
Stable identifier: R-GGA-571327

Type: transition

Compartments: endosome membrane, cytosol

Inferred from: Phosphorylation of IRAK2 bound to the activated IRAK4:MyD88 oligomer:activated TLR 7/8 or 9 (Homo sapiens)



In mammals activated IRAK4 phosphorylates both IRAK1 and IRAK2. Activated IRAK1 and IRAK2 in turn induce NFkB and AP-1 intracellular signaling cascades mediated by TRAF6.

Bioinformatic analysis reveals no evidence of IRAK1 in the chicken genome. It is possible that the chicken TLR pathway utilizes only IRAK-2, which shares 47% amino acid sequence identity with human IRAK2.

Literature references

Kumagai, Y., Kawai, T., Takeuchi, O., Saitoh, T., Matsushita, K., Sato, S. et al. (2008). Sequential control of Toll-like receptor-dependent responses by IRAK1 and IRAK2. *Nat Immunol, 9*, 684-91. ↗

Editions

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