Viral dsRNA:TLR3 recruits TRIF (TICAM1)

Fitzgerald, KA., 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.

20/04/2024

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

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. ↗

Sidiropoulos, K., Viteri, G., Sevilla, C., Jupe, S., Webber, M., Orlic-Milacic, M. et al. (2017). Reactome enhanced pathway visualization. *Bioinformatics, 33*, 3461-3467. ↗

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. ↗
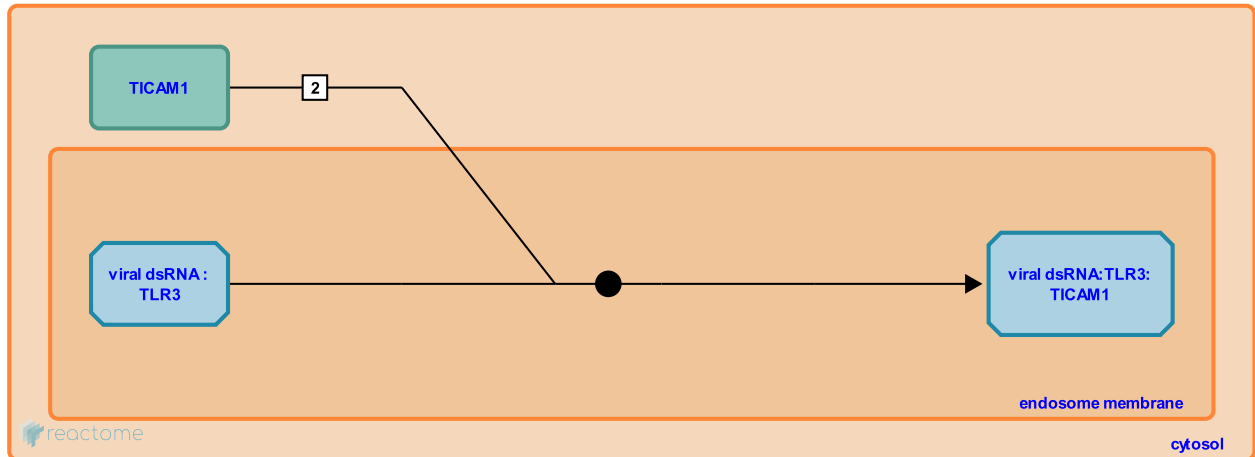
Reactome database release: 88

This document contains 1 reaction (see Table of Contents)

Viral dsRNA:TLR3 recruits TRIF (TICAM1) ↗

Stable identifier: R-HSA-168929

Type: binding

Compartments: endosome membrane, cytosol

TIR-domain-containing adaptor inducing interferon-beta (TRIF or TICAM1) was shown to play an essential role in TLR3 signaling. All poly(I:C)-induced pathways leading to NFkB and IRF3 activation were abolished in TRIF-/- mice [Yamamoto et al. 2003].

Literature references

Sugiyama, M., Takeuchi, O., Sanjo, H., Hoshino, K., Takeda, K., Okabe, M. et al. (2003). Role of adaptor TRIF in the MyD88-independent toll-like receptor signaling pathway. *Science, 301*, 640-3. ↗

Fitzgerald, KA., Rowe, DC., Latz, E., Barnes, BJ., Golenbock, DT., Pitha-Rowe, PM. et al. (2003). LPS-TLR4 signaling to IRF-3/7 and NF-kappaB involves the toll adapters. *J Exp Med, 198*, 1043-55. ↗

Matsumoto, M., Oshiumi, H., Funami, K., Akazawa, T., Seya, T. (2003). TICAM-1, an adaptor molecule that participates in Toll-like receptor 3-mediated interferon-beta induction. *Nat Immunol, 4*, 161-7. ↗

Editions

2005-11-10	Authored	Luo, F.
2006-04-24	Reviewed	Gay, NJ.
2009-09-29	Revised	Shamovsky, V.
2009-12-16	Edited	Shamovsky, V.
2012-11-13	Reviewed	Fitzgerald, KA.