

Viral dsRNA binds the Toll-Like Receptor 3 (TLR3)

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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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- 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: 81

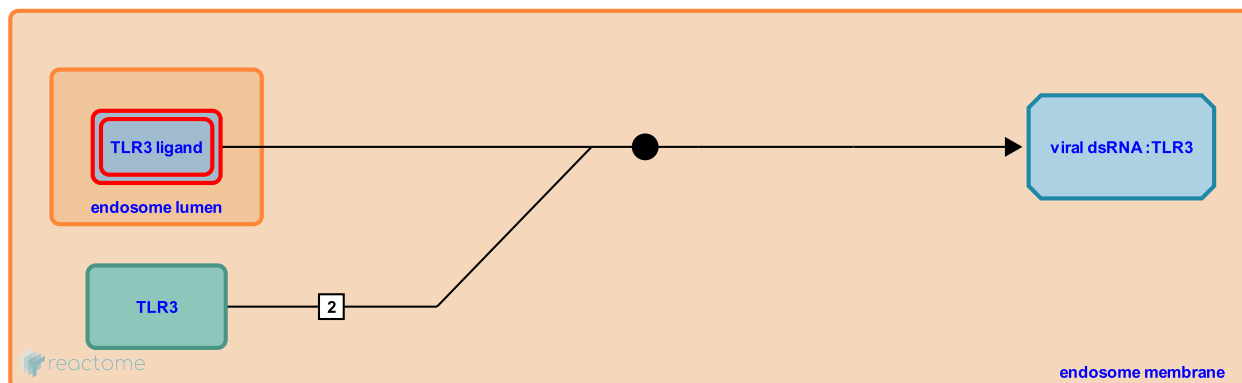
This document contains 1 reaction ([see Table of Contents](#))

Viral dsRNA binds the Toll-Like Receptor 3 (TLR3) ↗

Stable identifier: R-HSA-168092

Type: binding

Compartments: endosome membrane, endosome lumen



Viral dsRNA triggers an antiviral pathway mediated by toll like receptor 3. TLR3 dimerization occurs upon ligand binding to positively charged residues on the ectodomain termini of TLR3 which are responsible for the interaction with sugar-phosphate groups of dsRNA.

Literature references

Davies, DR., Leonard, JN., Shiloach, J., Botos, I., Liu, L., Wang, Y. et al. (2008). Structural basis of toll-like receptor 3 signaling with double-stranded RNA. *Science*, 320, 379-81. ↗

Holt, AC., Alexopoulou, L., Medzhitov, R., Flavell, RA. (2001). Recognition of double-stranded RNA and activation of NF-kappaB by Toll-like receptor 3. *Nature*, 413, 732-8. ↗

Editions

2005-11-10	Authored	Luo, F.
2006-04-24	Reviewed	Gay, NJ.
2009-09-29	Revised	Shamovsky, V.
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