Activated NOD2 oligomerizes

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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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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. ↗

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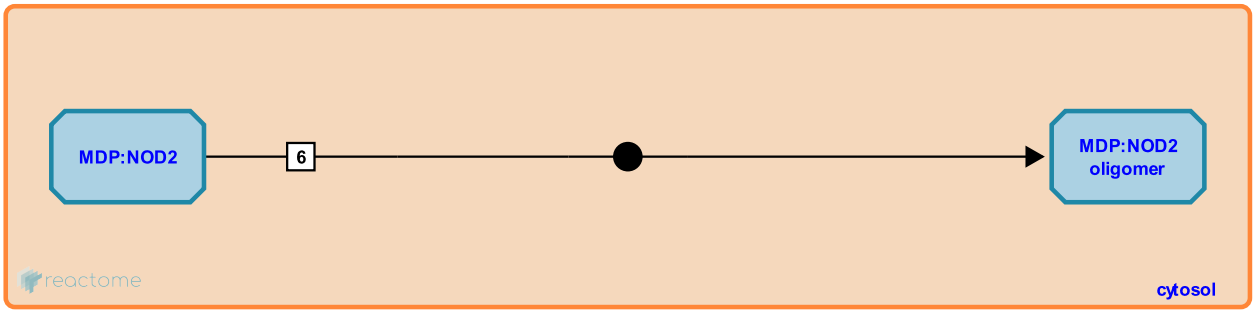
Stable identifier: R-HSA-708349

Type: binding

Compartments: cytosol



NOD2 is activated by MDP in a LRR domain dependent manner. Based on studies of NOD1 activation and structural data from the NLR-related scaffold Apaf-1, the LRR domain is believed to have a negative influence on NOD2 self-association (Inohara et al. 2000, Riedl & Salvesen 2007); binding of MDP is believed to cause conformational changes that free the NACHT domain, allowing oligomerization and subsequent association of other proteins. Coimmunoprecipitation experiments demonstrate that NOD1 can interact with itself (Inohara et al. 1999) via the NACHT domain (Inohara et al. 2000). NACHT domains are part of the AAA+ domain family. Members of this family form hexamers or heptamers. Based on these observations, NOD2 is generally believed to form hexamers or heptamers (Martinon & Tschopp, 2005). NOD2 oliogomerization has been observed in NOD2-transfected HEK293T cells (Zhao et al. 2007).

Literature references

Huang, S., Kwon, MJ., Hwang, DH., Zhao, L., Lee, JY., Inohara, N. et al. (2007). Differential modulation of Nods signaling pathways by fatty acids in human colonic epithelial HCT116 cells. *J Biol Chem, 282*, 11618-28. ↗

Editions

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