INTL1 binds bacterial glycans

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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. ↗

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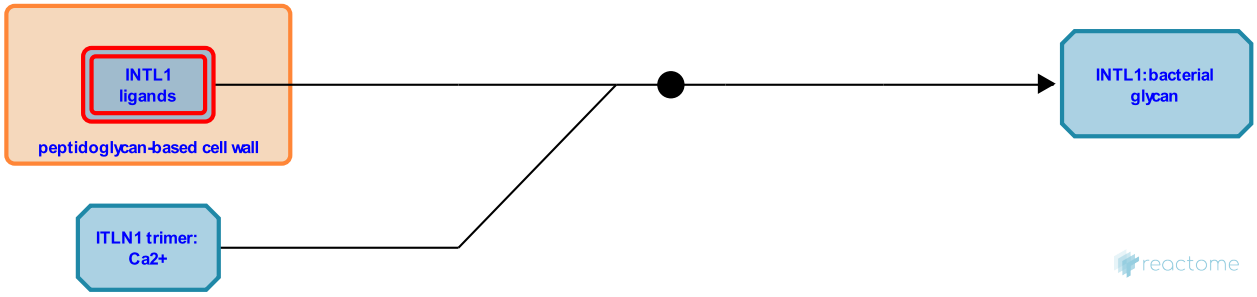
Stable identifier: R-HSA-6804527

Type: binding

Compartments: extracellular region, peptidoglycan-based cell wall



Intelectin-1 (INTL1) is a 120-kDa secretory lectin that recognizes multiple glycan epitopes found exclusively on microbes: beta-linked D-galactofuranose (beta-Galf), D-phosphoglycerol-modified glycans, heptoses, D-glycero-D-talo-oct-2-ulosonic acid (KO) and 3-deoxy-D-manno-oct-2-ulosonic acid (KDO) (Tsuji S et al. 2001; Wesener DA et al. 2015). These glycan residues are widely distributed in bacteria, including S. pneumoniae, Proteus mirabilis, Proteus vulgaris, Yersinia pestis and K. pneumoniae (Wesener DA et al. 2015). The 1.6-A-resolution crystal structure of human INTL1 complexed with beta-Galf suggests that INTL1 binds its carbohydrate ligands bearing terminal 1,2-diols through calcium ion-dependent coordination (Wesener DA et al. 2015).

Secreted INTL1 functions as a disulfide-linked trimer (Tsuji S et al., 2001; Tsuji S et al., 2007; Wesener DA et al., 2015).

Literature references

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Editions

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