

NOTCH1 binds DLL/JAG ligand in cis

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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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Reactome database release: 83

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

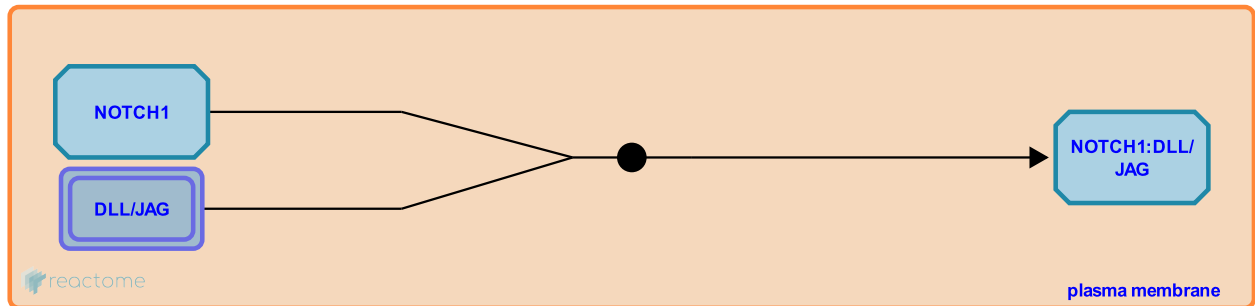
NOTCH1 binds DLL/JAG ligand in cis [↗](#)

Stable identifier: R-HSA-1980138

Type: binding

Compartments: plasma membrane

Inferred from: [Serrate binds Notch in cis \(Drosophila melanogaster\)](#), [rDll1 binds NOTCH1 in cis \(Homo sapiens\)](#)



Binding of NOTCH1 to DLL/JAG ligands expressed in the same cells (in cis) blocks NOTCH1 activation by DLL/JAG ligands expressed on neighboring cells (in trans). Cis-inhibition of NOTCH signaling can amplify small differences in NOTCH and DLL/JAG levels between neighboring cells.

Literature references

Tay, JZ., Wilkin, MB., Lea, SM., Whiteman, P., Redfield, C., Cordle, J. et al. (2008). A conserved face of the Jagged/Serrate DSL domain is involved in Notch trans-activation and cis-inhibition. *Nat Struct Mol Biol*, 15, 849-57. [↗](#)

Sprinzak, D., Garcia-Ojalvo, J., Santat, LA., Fontes, ME., LeBon, L., Lakhapal, A. et al. (2010). Cis-interactions between Notch and Delta generate mutually exclusive signalling states. *Nature*, 465, 86-90. [↗](#)

Editions

2011-11-14	Authored	Egan, SE., Orlic-Milacic, M.
2012-02-06	Reviewed	Haw, R.
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