

Cleavage of DNER:NOTCH1 complex releases NICD1

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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

- 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: 70

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

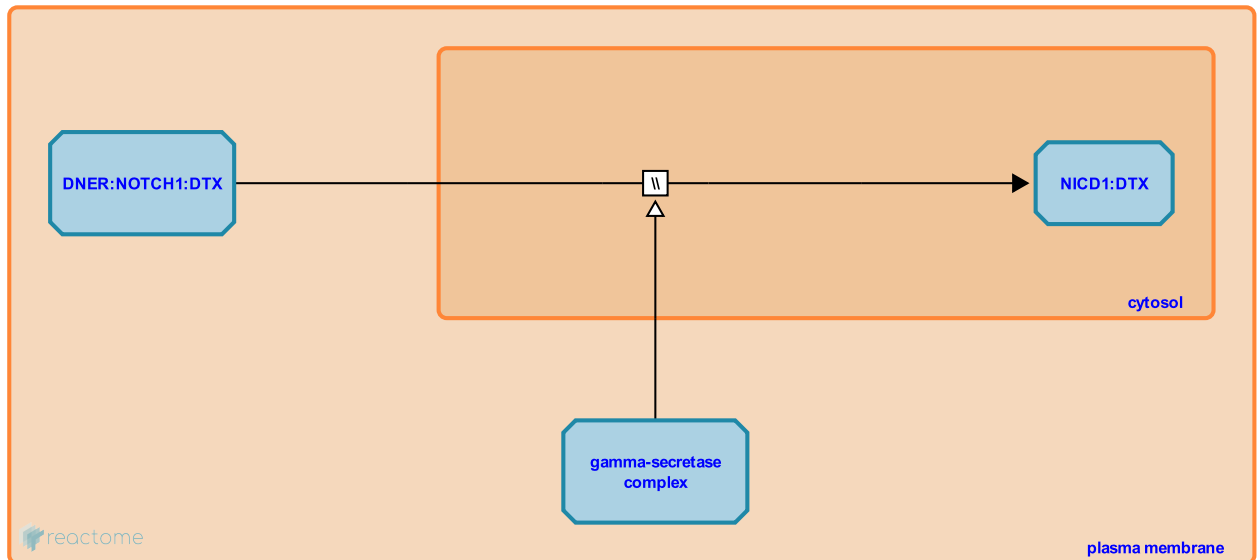
Cleavage of DNER:NOTCH1 complex releases NICD1 [↗](#)

Stable identifier: R-HSA-1980112

Type: omitted

Compartments: cytosol, plasma membrane

Inferred from: [Gamma secretase cleaves Dner:Notch1 complex \(Mus musculus\)](#)



Binding of DNER to NOTCH1 induces gamma-secretase dependent cleavage of NOTCH1 at the S3 cleavage site and releases NOTCH1 intracellular domain into the cytosol. Cleavage of NOTCH1 at the S2 cleavage site by ADAM10/17, which should precede cleavage at the S3 site, has not been studied in the context of DNER-mediated NOTCH1 activation.

Literature references

Eiraku, M., Tohgo, A., Ono, K., Kaneko, M., Fujishima, K., Hirano, T. et al. (2005). DNER acts as a neuron-specific Notch ligand during Bergmann glial development. *Nat Neurosci*, 8, 873-80. [↗](#)

Editions

2011-11-14	Authored	Egan, SE., Orlic-Milacic, M.
2012-02-06	Edited	D'Eustachio, P.
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