

BTN1A1 binds xanthine oxidoreductase (XDH)

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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: 88

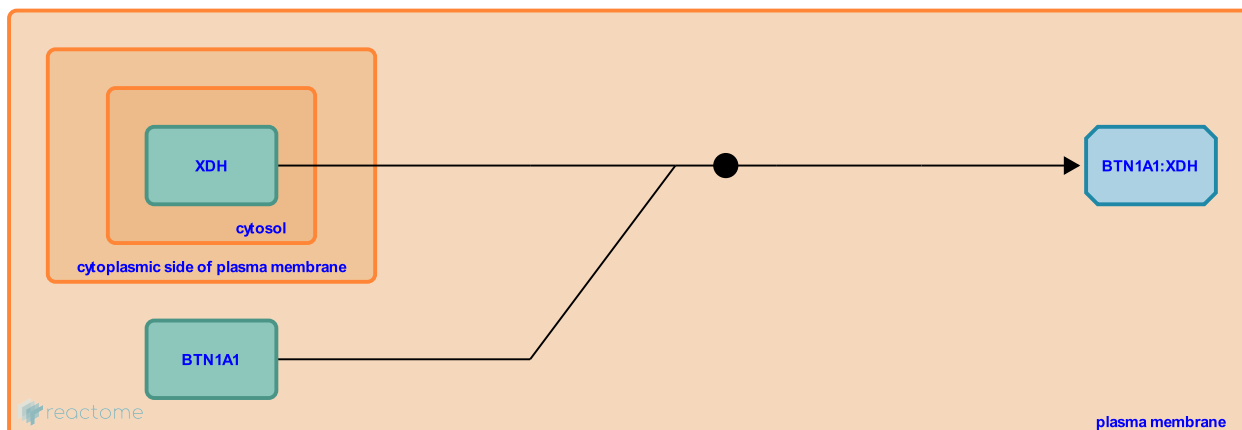
This document contains 1 reaction ([see Table of Contents](#))

BTN1A1 binds xanthine oxidoreductase (XDH) [↗](#)

Stable identifier: R-HSA-8851044

Type: binding

Compartments: plasma membrane, cytosol



The B30.2 cytoplasmic domain (PRY/SPRY domain) of Butyrophilin 1A1 (BTN1A1) binds the enzyme xanthine oxidoreductase (XDH). This interaction provides scaffolding function, stabilizes the milk fat globule membrane (MFGM), and aids in milk fat globule secretion (Jeong et al. 2009).

Literature references

Vorbach, C., Capecchi, MR., Scriven, A. (2002). The housekeeping gene xanthine oxidoreductase is necessary for milk fat droplet enveloping and secretion: gene sharing in the lactating mammary gland. *Genes Dev.*, 16, 3223-35. [↗](#)

Hathout, Y., Mather, IH., Fenselau, C., Jeong, J., Xu, J., Ogg, SL. et al. (2009). The PRY/SPRY/B30.2 domain of butyrophilin 1A1 (BTN1A1) binds to xanthine oxidoreductase: implications for the function of BTN1A1 in the mammary gland and other tissues. *J. Biol. Chem.*, 284, 22444-56. [↗](#)

Editions

2016-01-05	Authored, Edited	Garapati, P V.
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