

Glucanotrehalose is hydrolyzed to 1,4-alpha-glucan and trehalose

Jassal, B., Stephan, R., Warner, D.

European Bioinformatics Institute, New York University Langone Medical Center, Ontario Institute for Cancer Research, Oregon Health and Science University.

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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

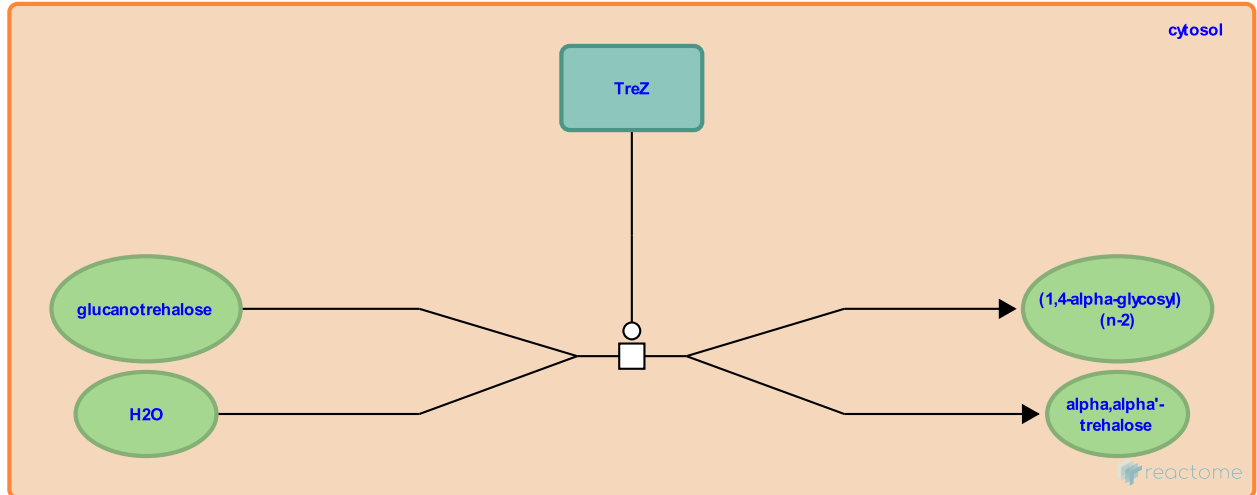
This document contains 1 reaction ([see Table of Contents](#))

Glucanotrehalose is hydrolyzed to 1,4-alpha-glucan and trehalose [↗](#)

Stable identifier: R-MTU-868657

Type: transition

Compartments: cytosol



From the glucanotrehalose, the enzyme TreZ cleaves one molecule of trehalose, leaving a linear glucan that is two sugars shorter than before. This is the rate-limiting step in the TreYZ pathway of trehalose biosynthesis (De Smet et al, 2000).

Literature references

Young, DB., De Smet, KA., Robertson, BD., Brown, IN., Weston, A. (2000). Three pathways for trehalose biosynthesis in mycobacteria. *Microbiology*, 146, 199-208. [↗](#)

Editions

2010-05-29	Authored	Stephan, R.
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