N-Glycan antennae elongation

24/09/2020

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. ↗
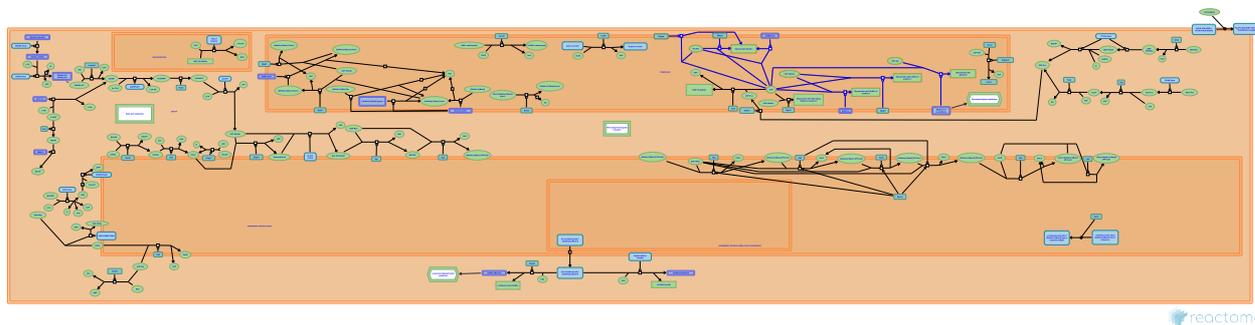
Reactome database release: 73

This document contains 1 pathway and 6 reactions (see Table of Contents)

N-Glycan antennae elongation ↗

Stable identifier: R-MMU-975577

Inferred from: N-Glycan antennae elongation (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

<a href='/electronic_inference_compara.html' target = 'NEW'>More details and caveats of the event inference in Reactome. For details on PANTHER see also: <a href='http://www.pantherdb.org/about.jsp' target='NEW'>http://www.pantherdb.org/about.jsp

Addition of GlcNAc to position 4 by N-acetylglucosaminyltransferase (GnT)-IV ↗
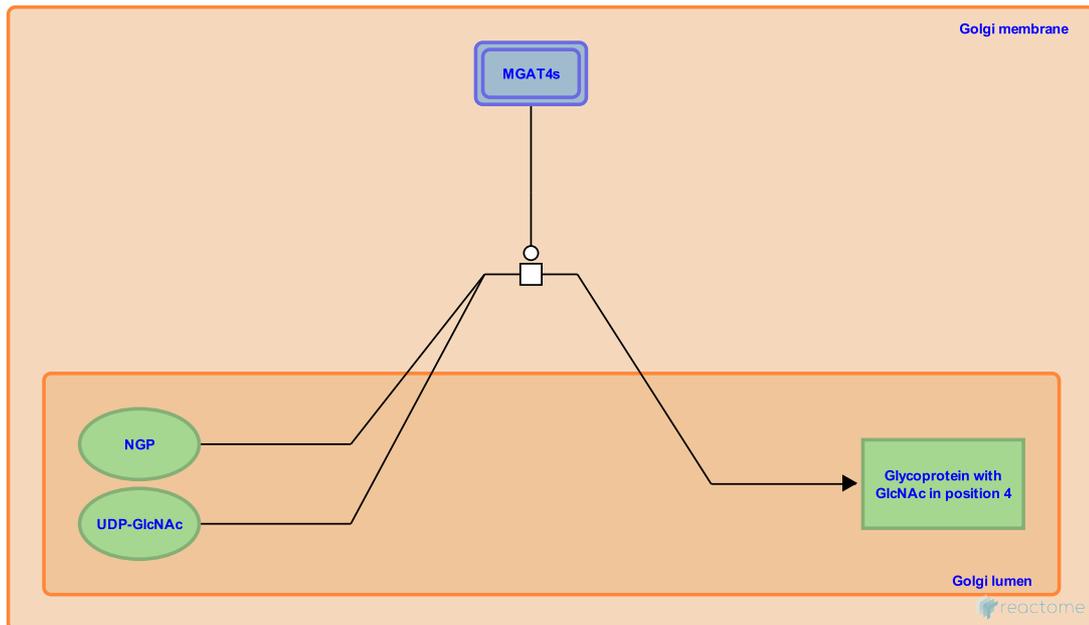
Location: N-Glycan antennae elongation

Stable identifier: R-MMU-975903

Type: transition

Compartments: Golgi membrane, Golgi lumen

Inferred from: Addition of GlcNAc to position 4 by N-acetylglucosaminyltransferase (GnT)-IV (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

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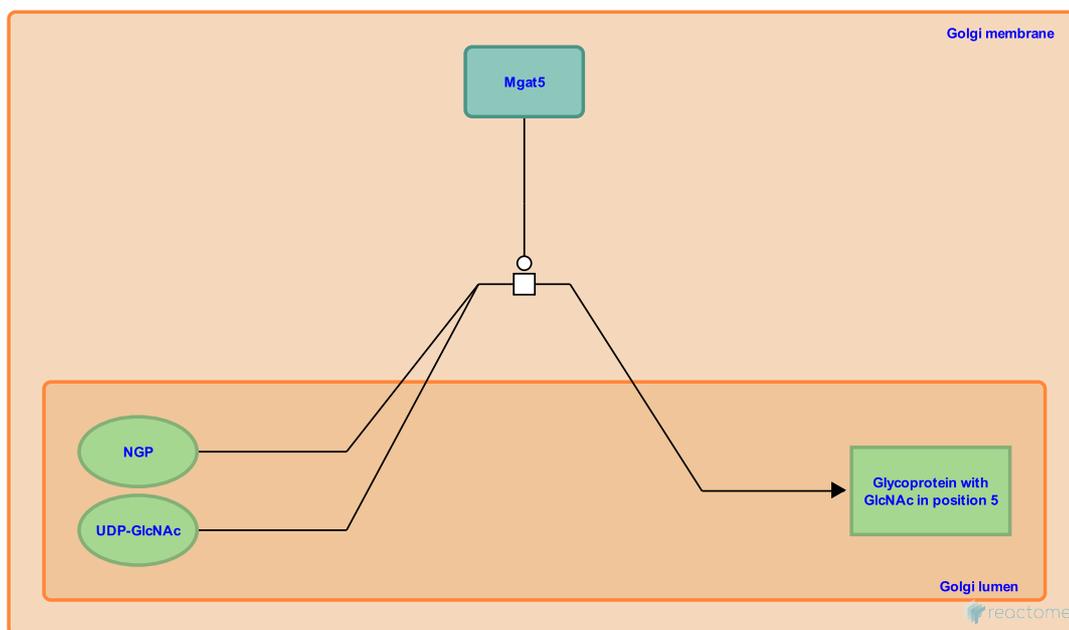## Addition of GlcNAc to position 5 by MGAT5 ↗

Location: N-Glycan antennae elongation

Stable identifier: R-MMU-975916

Type: transition

Compartments: Golgi membrane, Golgi lumen

Inferred from: Addition of GlcNAc to position 5 by MGAT5 (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

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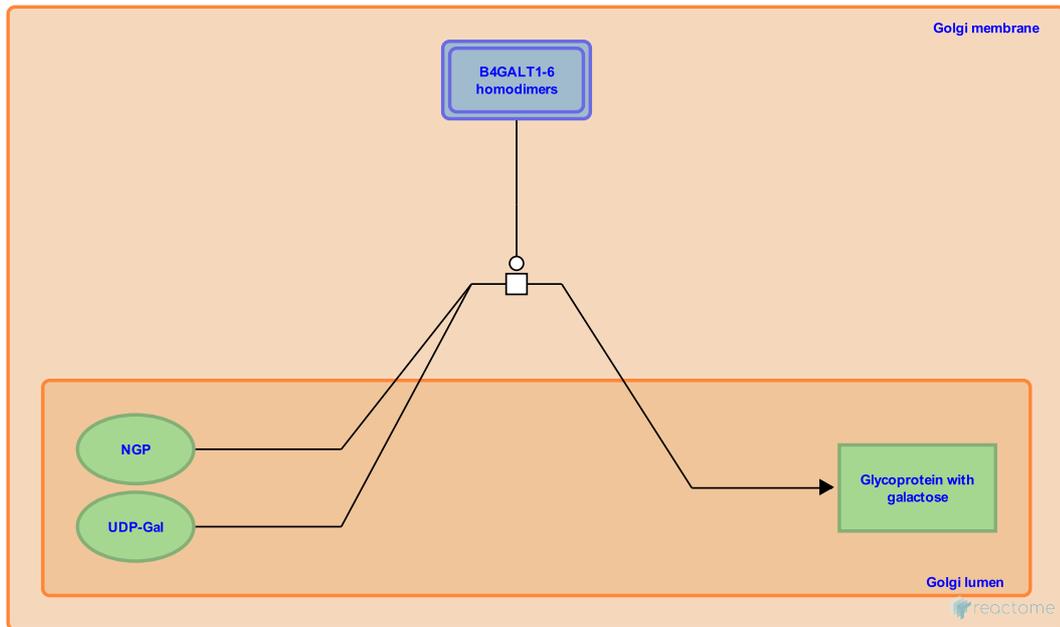## Addition of galactose by beta 4-galactosyltransferases ↗

Location: N-Glycan antennae elongation

Stable identifier: R-MMU-975919

Type: transition

Compartments: Golgi membrane, Golgi lumen

Inferred from: Addition of galactose by beta 4-galactosyltransferases (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

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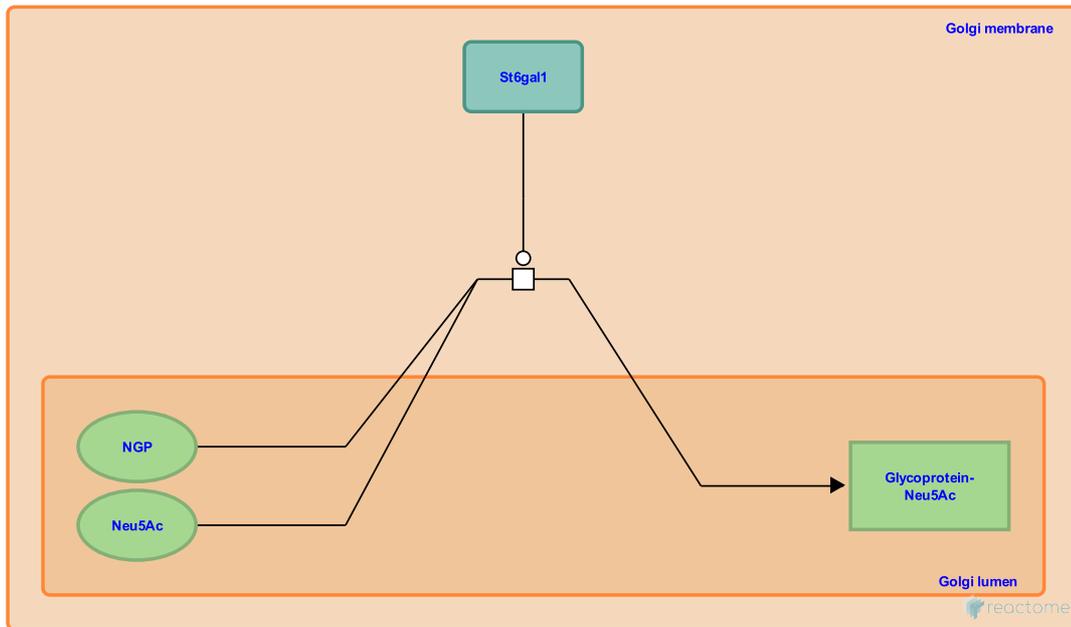# ST6GAL1 transfers Neu5Ac to terminal Gal of N-glycans ↗

Location: N-Glycan antennae elongation

Stable identifier: R-MMU-975902

Type: transition

Compartments: Golgi membrane, Golgi lumen

Inferred from: ST6GAL1 transfers Neu5Ac to terminal Gal of N-glycans (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

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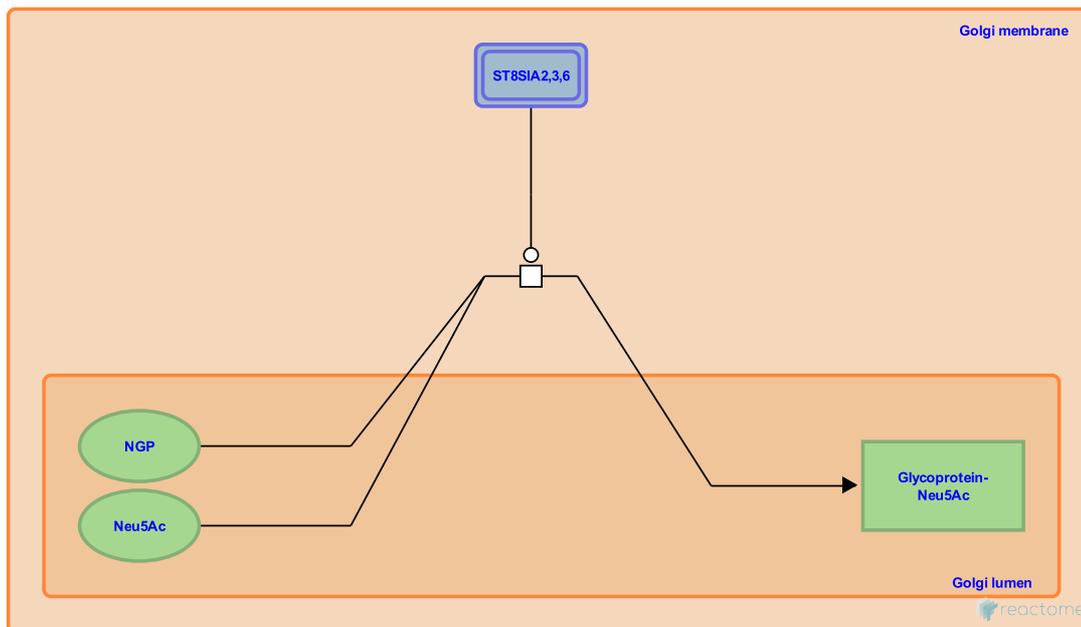# ST8SIA2,3,6 transfer Neu5Ac to terminal Gal of N-glycans ↗

Location: N-Glycan antennae elongation

Stable identifier: R-MMU-1022133

Type: transition

Compartments: Golgi membrane, Golgi lumen

Inferred from: ST8SIA2,3,6 transfer Neu5Ac to terminal Gal of N-glycans (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

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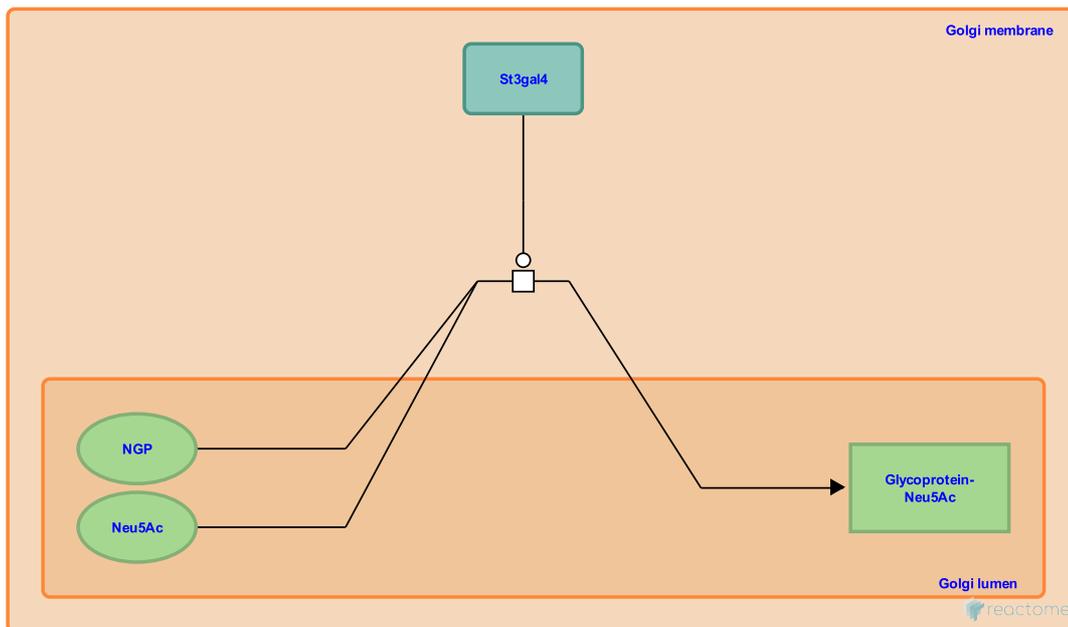## ST3GAL4 transfers Neu5Ac to terminal Gal of N-glycans ↗

Location: N-Glycan antennae elongation

Stable identifier: R-MMU-1022129

Type: transition

Compartments: Golgi membrane, Golgi lumen

Inferred from: ST3GAL4 transfers Neu5Ac to terminal Gal of N-glycans (Homo sapiens)

This event has been computationally inferred from an event that has been demonstrated in another species.

The inference is based on the homology mapping from PANTHER. Briefly, reactions for which all involved PhysicalEntities (in input, output and catalyst) have a mapped orthologue/paralogue (for complexes at least 75% of components must have a mapping) are inferred to the other species. High level events are also inferred for these events to allow for easier navigation.

<a href='/electronic_inference_compara.html' target = 'NEW'>More details and caveats of the event inference in Reactome. For details on PANTHER see also: <a href='http://www.pantherdb.org/about.jsp' target='NEW'>http://www.pantherdb.org/about.jsp

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