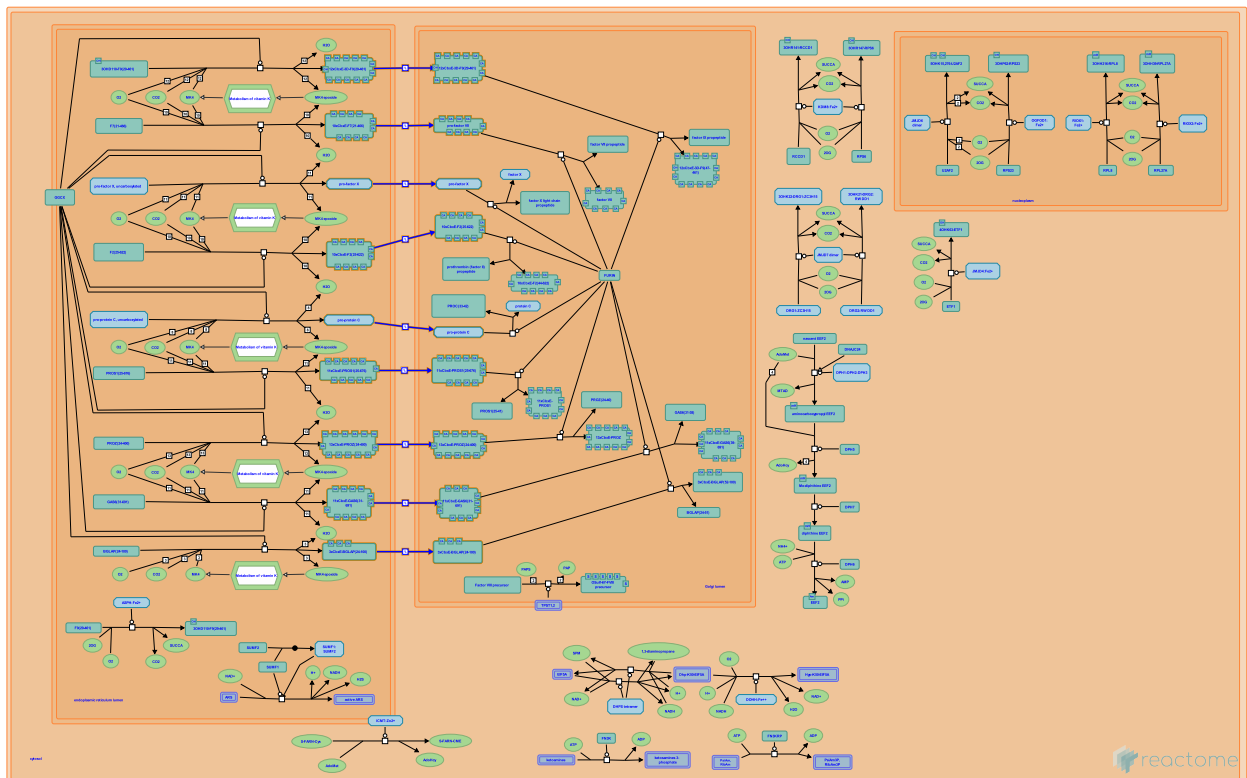


Transport of gamma-carboxylated protein precursors from the endoplasmic reticulum to the Golgi apparatus



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This is just an excerpt of a full-length report for this pathway. To access the complete report, please download it at the [Reactome Textbook](https://reactome.org/textbook/).

03/05/2024

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.

The development of Reactome is supported by grants from the US National Institutes of Health (P41 HG003751), University of Toronto (CFREF Medicine by Design), European Union (EU STRP, EMI-CD), and the European Molecular Biology Laboratory (EBI Industry program).

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. [↗](#)

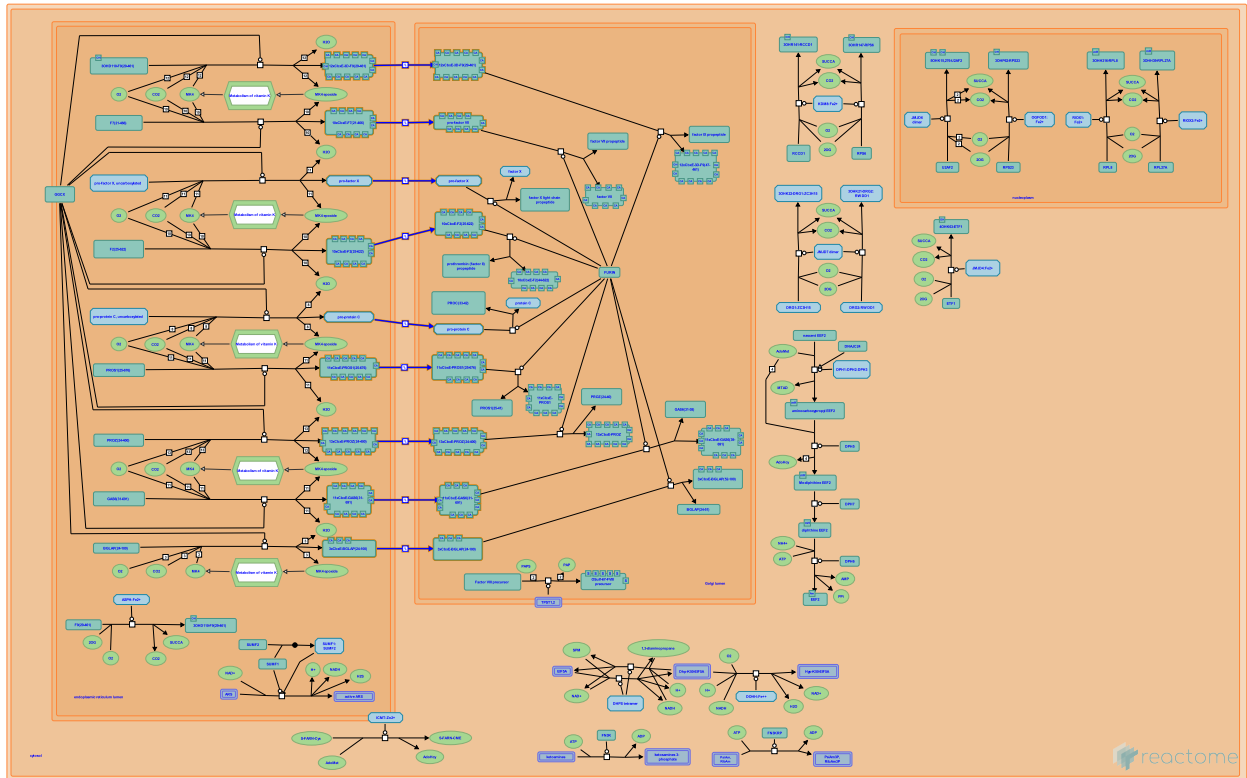
Reactome database release: 88

This document contains 1 pathway and 9 reactions ([see Table of Contents](#))

Transport of gamma-carboxylated protein precursors from the endoplasmic reticulum to the Golgi apparatus ↗

Stable identifier: R-HSA-159763

Compartments: COPII-coated ER to Golgi transport vesicle



Gamma-carboxylated proteins are moved by anterograde transport from the endoplasmic reticulum to the Golgi apparatus (Kirchhausen 2000).

Literature references

Kirchhausen, Tomas. (2000). Three ways to make a vesicle. *Nat Rev Mol Cell Biol*, 1, 187-98. ↗

Editions

2005-03-17	Authored	D'Eustachio, P.
2024-03-06	Edited	D'Eustachio, P.

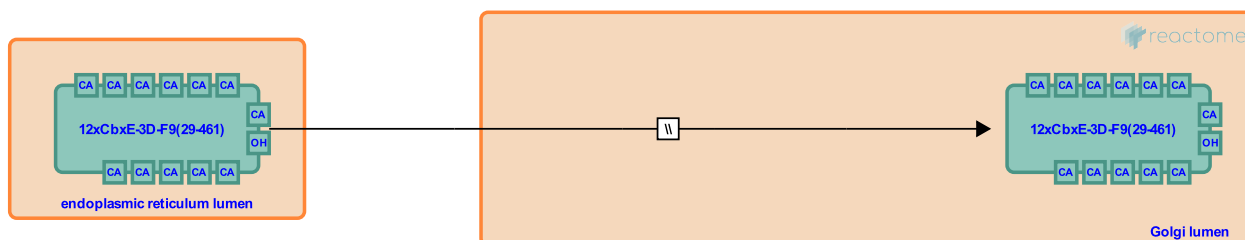
Gamma-carboxy pro-factor IX transport from the endoplasmic reticulum to the Golgi apparatus ↗

Location: Transport of gamma-carboxylated protein precursors from the endoplasmic reticulum to the Golgi apparatus

Stable identifier: R-HSA-159836

Type: omitted

Compartments: Golgi lumen, COPII-coated ER to Golgi transport vesicle, endoplasmic reticulum lumen



Gamma-carboxylated pro-factor IX is transported from the endoplasmic reticulum to the Golgi apparatus (Kirchhausen 2000).

Literature references

Kirchhausen, Tomas. (2000). Three ways to make a vesicle. *Nat Rev Mol Cell Biol*, 1, 187-98. ↗

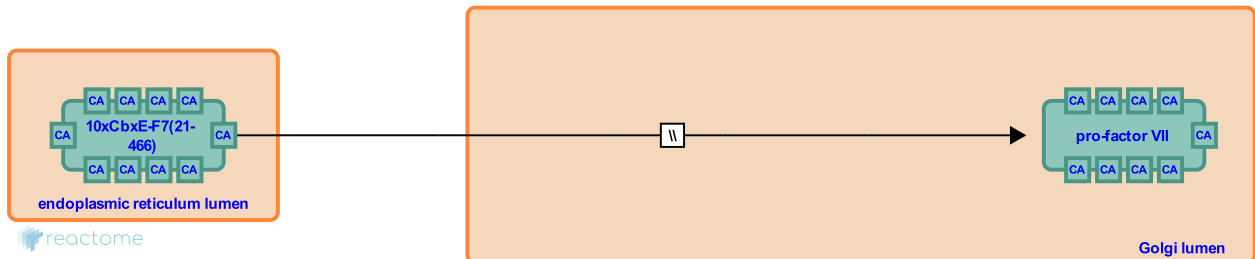
Gamma-carboxy pro-factor VII transport from the endoplasmic reticulum to the Golgi apparatus ↗

Location: Transport of gamma-carboxylated protein precursors from the endoplasmic reticulum to the Golgi apparatus

Stable identifier: R-HSA-159783

Type: omitted

Compartments: Golgi lumen, COPII-coated ER to Golgi transport vesicle, endoplasmic reticulum lumen



Gamma-carboxylated pro-factor VII is transported from the endoplasmic reticulum to the Golgi apparatus (Kirchhausen 2000).

Literature references

Kirchhausen, Tomas. (2000). Three ways to make a vesicle. *Nat Rev Mol Cell Biol*, 1, 187-98. ↗

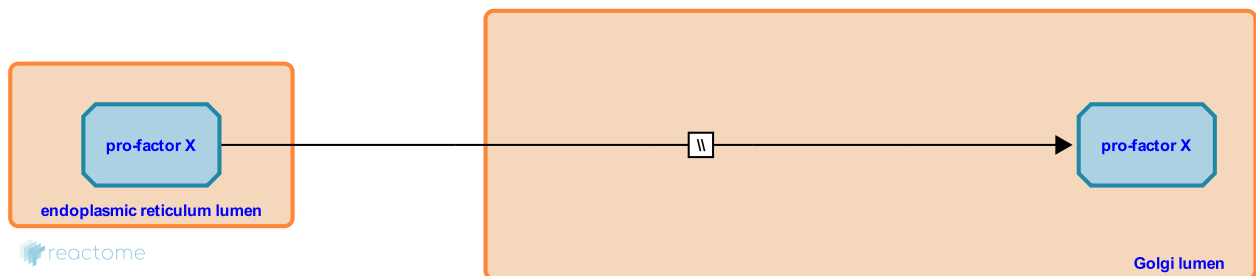
Gamma-carboxy pro-factor X transport from the endoplasmic reticulum to the Golgi apparatus ↗

Location: Transport of gamma-carboxylated protein precursors from the endoplasmic reticulum to the Golgi apparatus

Stable identifier: R-HSA-159757

Type: omitted

Compartments: Golgi lumen, COPII-coated ER to Golgi transport vesicle, endoplasmic reticulum lumen



Gamma-carboxylated pro-factor X is transported from the endoplasmic reticulum to the Golgi apparatus (Kirchhausen 2000).

Literature references

Kirchhausen, Tomas. (2000). Three ways to make a vesicle. *Nat Rev Mol Cell Biol*, 1, 187-98. ↗

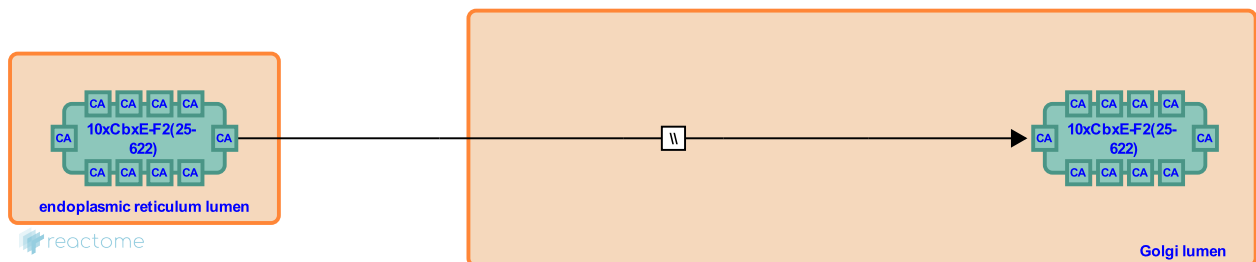
Gamma-carboxy pro-thrombin transport from the endoplasmic reticulum to the Golgi apparatus ↗

Location: Transport of gamma-carboxylated protein precursors from the endoplasmic reticulum to the Golgi apparatus

Stable identifier: R-HSA-159843

Type: omitted

Compartments: Golgi lumen, COPII-coated ER to Golgi transport vesicle, endoplasmic reticulum lumen



Gamma-carboxylated pro-prothrombin (factor II) is transported from the endoplasmic reticulum to the Golgi apparatus (Kirchhausen 2000).

Literature references

Kirchhausen, Tomas. (2000). Three ways to make a vesicle. *Nat Rev Mol Cell Biol*, 1, 187-98. ↗

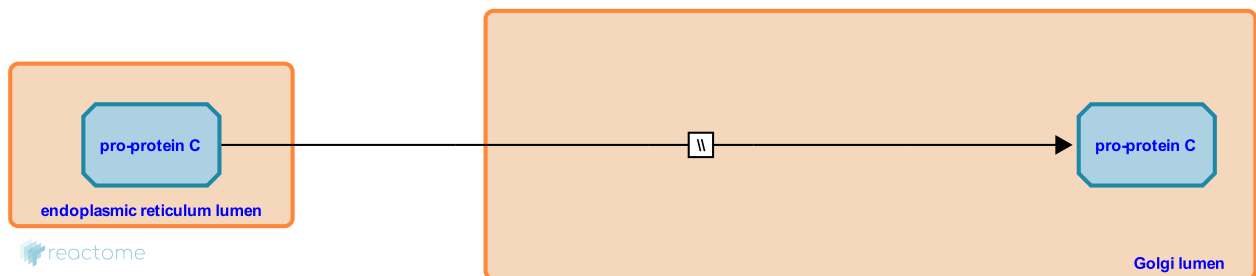
Gamma-carboxy pro-protein C transport from the endoplasmic reticulum to the Golgi apparatus ↗

Location: [Transport of gamma-carboxylated protein precursors from the endoplasmic reticulum to the Golgi apparatus](#)

Stable identifier: R-HSA-159762

Type: omitted

Compartments: Golgi lumen, COPII-coated ER to Golgi transport vesicle, endoplasmic reticulum lumen



Gamma-carboxylated pro-protein C is transported from the endoplasmic reticulum to the Golgi apparatus (Kirchhausen 2000).

Literature references

Kirchhausen, Tomas. (2000). Three ways to make a vesicle. *Nat Rev Mol Cell Biol*, 1, 187-98. ↗

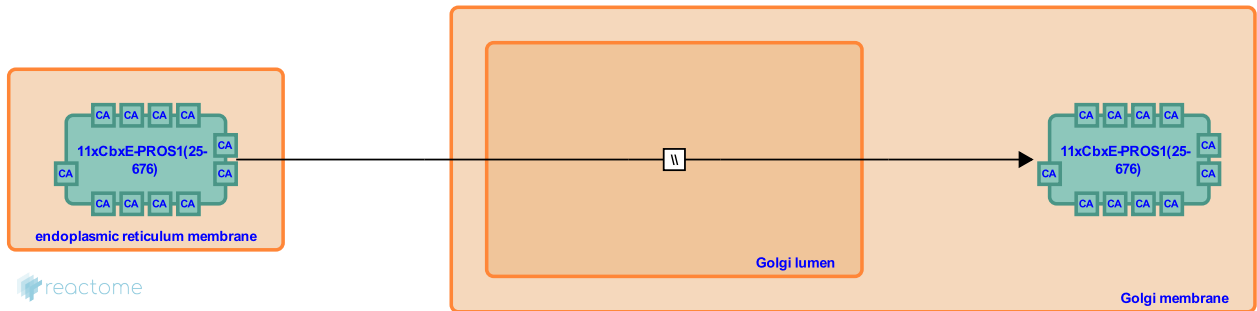
Gamma-carboxy pro-protein S transport from the endoplasmic reticulum to the Golgi apparatus ↗

Location: Transport of gamma-carboxylated protein precursors from the endoplasmic reticulum to the Golgi apparatus

Stable identifier: R-HSA-159729

Type: omitted

Compartments: Golgi lumen, COPII-coated ER to Golgi transport vesicle, endoplasmic reticulum lumen



Gamma-carboxylated pro-protein S is transported from the endoplasmic reticulum to the Golgi apparatus (Kirchhausen 2000).

Literature references

Kirchhausen, Tomas. (2000). Three ways to make a vesicle. *Nat Rev Mol Cell Biol*, 1, 187-98. ↗

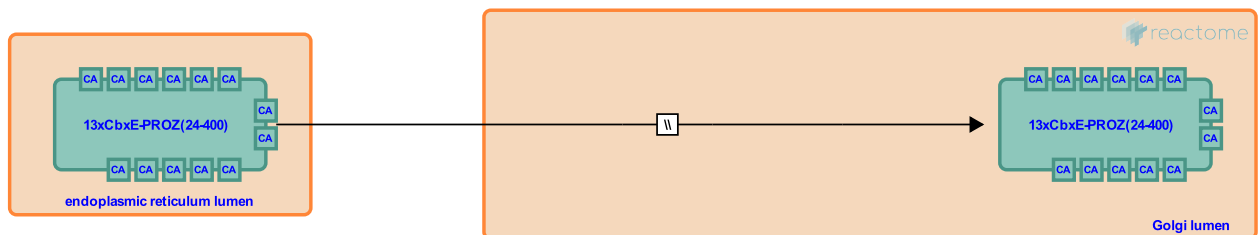
Gamma-carboxy pro-protein Z transport from the endoplasmic reticulum to the Golgi apparatus ↗

Location: Transport of gamma-carboxylated protein precursors from the endoplasmic reticulum to the Golgi apparatus

Stable identifier: R-HSA-163825

Type: omitted

Compartments: Golgi lumen, COPII-coated ER to Golgi transport vesicle, endoplasmic reticulum lumen



Gamma-carboxylated pro-protein Z is transported from the endoplasmic reticulum to the Golgi apparatus (Kirchhausen 2000).

Literature references

Kirchhausen, Tomas. (2000). Three ways to make a vesicle. *Nat Rev Mol Cell Biol*, 1, 187-98. ↗

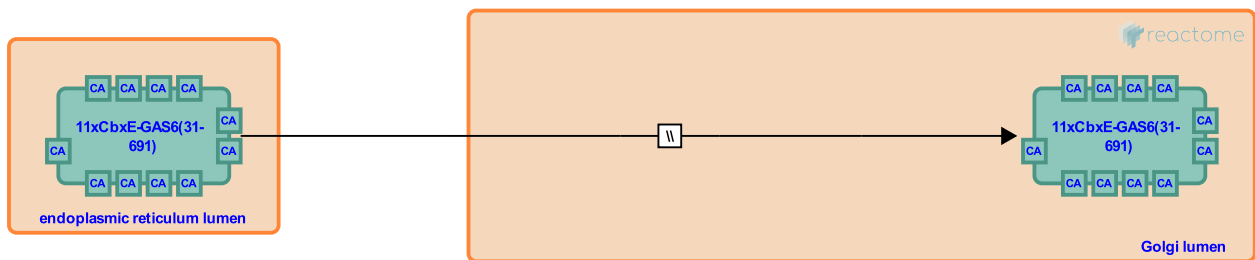
Gamma-carboxy pro-GAS6 transport from the endoplasmic reticulum to the Golgi apparatus ↗

Location: Transport of gamma-carboxylated protein precursors from the endoplasmic reticulum to the Golgi apparatus

Stable identifier: R-HSA-163809

Type: omitted

Compartments: Golgi lumen, COPII-coated ER to Golgi transport vesicle, endoplasmic reticulum lumen



Gamma-carboxylated pro-GA6 is transported from the endoplasmic reticulum to the Golgi apparatus (Kirchhausen 2000).

Literature references

Kirchhausen, Tomas. (2000). Three ways to make a vesicle. *Nat Rev Mol Cell Biol*, 1, 187-98. ↗

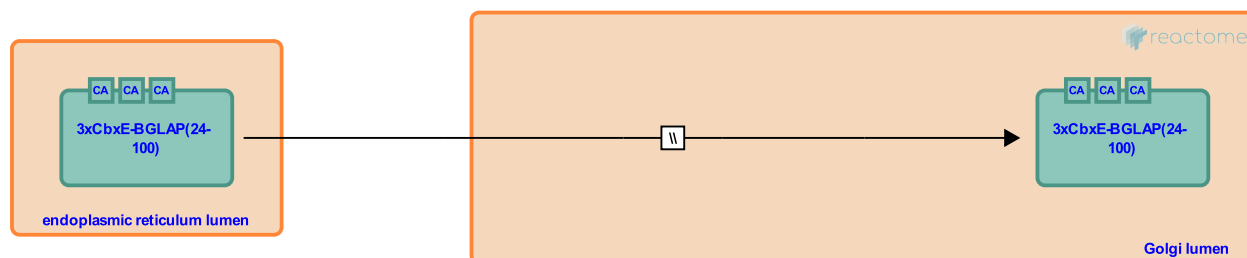
Gamma-carboxy pro-BGLAP transport from the endoplasmic reticulum to the Golgi apparatus ↗

Location: Transport of gamma-carboxylated protein precursors from the endoplasmic reticulum to the Golgi apparatus

Stable identifier: R-HSA-6807229

Type: omitted

Compartments: Golgi lumen, COPII-coated ER to Golgi transport vesicle, endoplasmic reticulum lumen



Gamma-carboxylated pro-BGLAP is transported from the endoplasmic reticulum to the Golgi apparatus (Kirchhausen 2000).

Literature references

Kirchhausen, Tomas. (2000). Three ways to make a vesicle. *Nat Rev Mol Cell Biol*, 1, 187-98. ↗

Editions

2015-11-09	Authored, Edited	D'Eustachio, P.
2015-11-09	Reviewed	Jassal, B.

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