botD LC cleaves target cell VAMP2

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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

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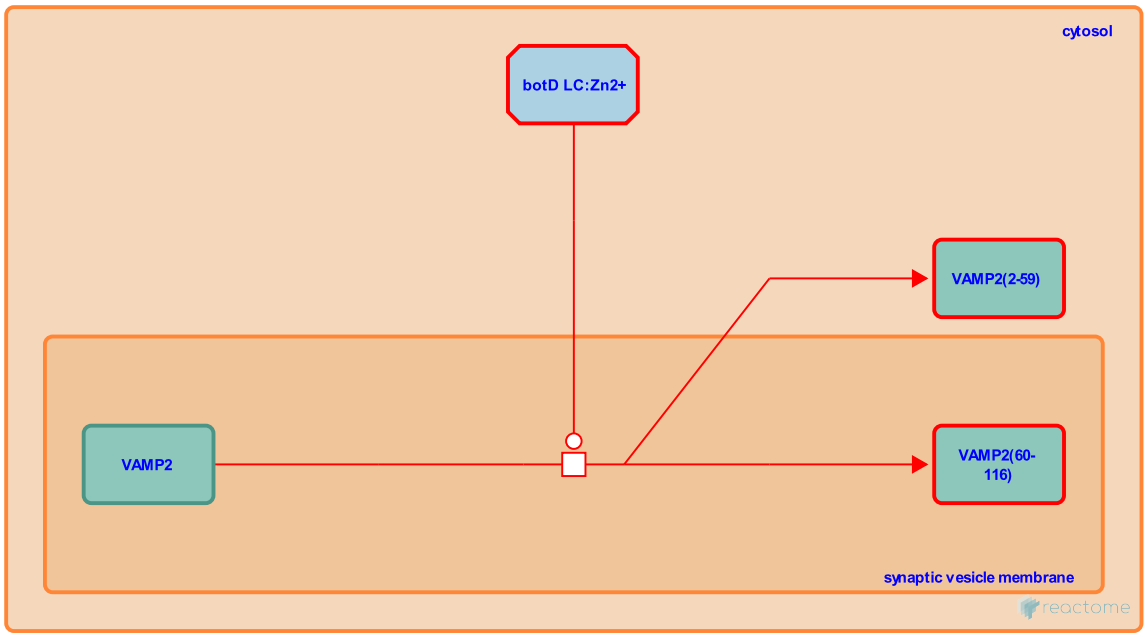
Stable identifier: R-HSA-5250606

Type: transition

Compartments: cytosol, synaptic vesicle membrane

Diseases: botulism



Botulinum toxin type D light chain (botD LC), in the cytosol of a target cell, catalyzes the removal of an aminoterminal peptide from vesicle-associated membrane protein 2 (VAMP2). botD LC is a zinc metalloprotease (Arndt et al. 2006; Schiavo et al. 1993; Yamasaki et al. 1994). VAMP2 is associated with the cytosolic face of the target cell synaptic vesicle and is required for vesicle docking and exocytosis. Its cleavage by botulinum toxin blocks synaptic vesicle fusion with the plasma membrane and neurotransmitter release (Sudhof et al, 1993; Sudhof 2004).

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Editions

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