CAST binds Ca2+ bound calpain

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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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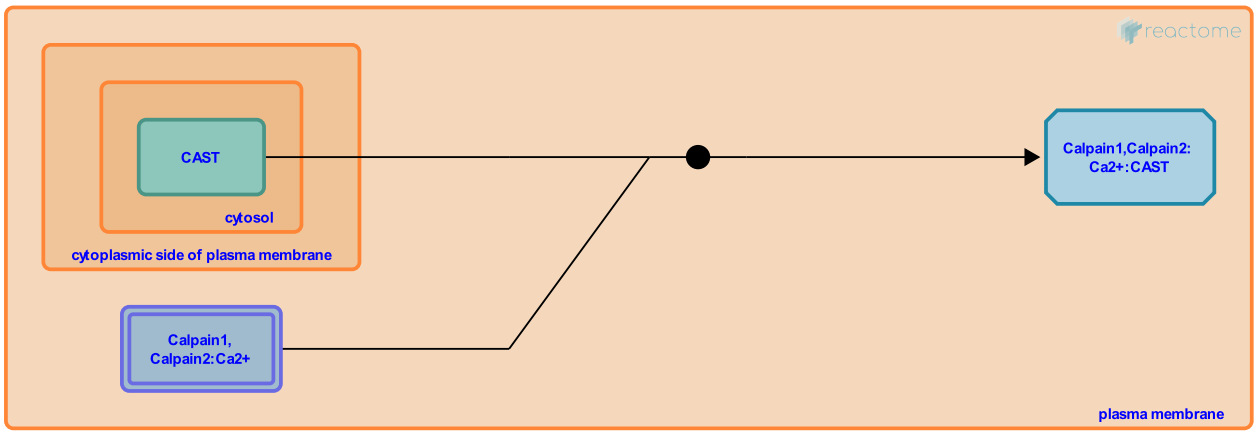
Stable identifier: R-HSA-8868134

Type: binding

Compartments: cytosol, plasma membrane



The proteolytic activity of calpain complexes is inhibited by binding to calpastatin (CAST) (Takano et al. 1995). Based on detailed structural studies of recombinant rat proteins, CAST associates with calcium-bound calpain heterodimers and occupies both sides of the calpain active site cleft (Hanna et al. 2008). CAST levels are reduced in Alzheimer disease (Sato et al. 2011).

Literature references

Mäki, M., Ma, H., Takano, E., Hatanaka, M., Yang, HQ. (1995). Preference of calcium-dependent interactions between calmodulin-like domains of calpain and calpastatin subdomains. *FEBS Lett., 362*, 93-7.

Editions

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