Initial activation of proMMP7 by trypsin

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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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Sidiropoulos, K., Viteri, G., Sevilla, C., Jupe, S., Webber, M., Orlic-Milacic, M. et al. (2017). Reactome enhanced pathway visualization. *Bioinformatics, 33*, 3461-3467. ↗

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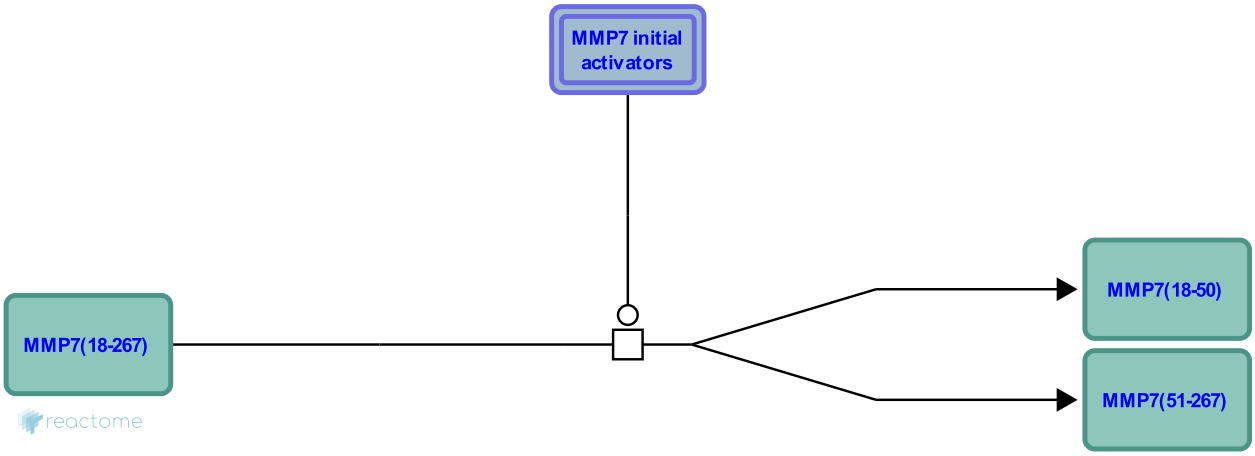
Stable identifier: R-HSA-1604712

Type: transition

Compartments: extracellular region



proMMP7 (proMatrilysin-1) activation by trypsin occurs via an intermediate cleaved at Lys50-Asn51 which undergoes autocatalysis (Crabbe et al. 1992). Leukocyte elastase and plasmin partially activate MMP7 by an uncharacterized mechanism. Highly sulfated glycosaminoglycans (GAG), such as heparin, chondroitin-4,6-sulfate (CS-E), and dermatan sulfate, markedly enhance (>50-fold) the intermolecular autolytic activation of promatrilysin and the activity of fully active matrilysin (Ra et al. 2009).

Literature references

Docherty, AJ., Carne, AF., Eaton, D., Hynds, P., Crabbe, T., Willenbrock, F. et al. (1992). Biochemical characterization of matrilysin. Activation conforms to the stepwise mechanisms proposed for other matrix metalloproteinases. *Biochemistry, 31*, 8500-7. ↗

Editions

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