MET Receptor Activation

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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


Reactome database release: 79

This document contains 1 pathway and 5 reactions (see Table of Contents)
Hepatocyte growth factor (HGF), the ligand for MET receptor tyrosine kinase (RTK), is secreted into the extracellular matrix (ECM) as an inactive single chain precursor (pro-HGF). The biologically active HGF is the heterodimer of alpha and beta chains that are produced via proteolytic cleavage of pro-HGF by the plasma membrane bound serine protease Hepsin (HPN) (Kirchhofer et al. 2005, Owen et al. 2010) or the ECM-associated serine protease Hepatocyte growth factor activator (HGFAC, commonly known as HGFA) (Shia et al. 2005). HGF binds to the extracellular SEMA and PSI domains of MET RTK, inducing a conformational change that enables MET dimerization or oligomerization (Kirchhofer et al. 2004, Stamos et al. 2004, Hays and Watowich 2004, Gherardi et al. 2006). MET dimers trans-autophosphorylate on tyrosine residues in the activation loop, leading to increased kinase activity, and on tyrosine residues at the cytoplasmic tail that serve as docking sites for adapter proteins involved in MET signal transduction (Fertracini et al. 1991, Longati et al. 1994, Rodrigues and Park 1994, Ponzetto et al. 1994).

CD44v6 was implicated as a MET co-receptor, but its role has been disputed (Orian-Rousseau et al. 2002, Dortet et al. 2010, Olaku et al. 2011, Hasenauer et al. 2013, Elliot et al. 2014).

**Literature references**


**Editions**

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HPN heterodimer cleaves pro-HGF to form HGF dimer

Location: MET Receptor Activation

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