M protein oligomerization

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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: 77

This document contains 1 reaction (see Table of Contents)
M protein oligomerization

Stable identifier: R-HSA-9684218

Type: binding

Compartments: endoplasmic reticulum-Golgi intermediate compartment membrane

Diseases: severe acute respiratory syndrome

M protein is the most abundant component of the mature virion and contributes to the shape of the virus. It consists of three transmembrane domains with an N-terminus outside the virus and an internal C-terminus (N-exo, C-endo conformation). Homotypic interactions between M proteins contribute to the initial formation of a nascent virus by forming a lattice, consistent with what is seen in other coronavirus systems (Tseng et al, 2010; de Hann et al, 1998; de Haan et al, 2000; Locker et al, 1995). Multiple segments of M are required for oligomerization (Tseng et al, 2010; de Hann et al, 1998; de Haan et al, 2000; reviewed in Masters, 2006). Both glycosylated and non-glycosylated forms of M are incorporated into the virion, and the significance of the N-linked glycosylation is not clear (Voss et al, 2006; Voss et al, 2009).

Despite its importance, expression of M alone is not sufficient to drive formation of a mature virus (reviewed in Masters, 2006). Protein-protein interactions between M and S, N and E, among other components, are required for assembly of a mature virus and for membrane curvature. Many studies have examined the minimal system required for release of viral-like particles (VLPs) with sometimes contradictory results, but interactions between M, N and E are sufficient to promote release of significant numbers of VLPs (Ho et al, 2004; Huang et al, 2004; Mortola and Roy, 2004; Hsieh et al, 2005; Siu et al, 2008; Hatakeyama et al, 2008; Tseng et al, 2013; reviewed in Masters, 2006)

Literature references


Editions

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