RTC completes synthesis of the minus strand genomic RNA complement

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26/09/2021
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.

The development of Reactome is supported by grants from the US National Institutes of Health (P41 HG003751), University of Toronto (CFREF Medicine by Design), European Union (EU STRP, EMI-CD), and the European Molecular Biology Laboratory (EBI Industry program).

Literature references


Reactome database release: 77

This document contains 1 reaction (see Table of Contents)
RTC completes synthesis of the minus strand genomic RNA complement

**Stable identifier:** R-HSA-9694549

**Type:** omitted

**Compartments:** cytosol, double membrane vesicle viral factory outer membrane

**Diseases:** COVID-19

**Inferred from:** RTC completes synthesis of the minus strand genomic RNA complement (Homo sapiens)

This COVID-19 event has been created by a combination of computational inference (see https://reactome.org/documentation/inferred-events) from SARS-CoV-1 data and manual curation, as described in the summation for the overall SARS-CoV-2 infection pathway.

The replication-transcription complex (RTC) completes synthesis of the genomic RNA complement (minus strand). The complex of nsp7 and nsp8 confers processivity to nsp12, the virally encoded RNA-dependent RNA polymerase that replicates the viral genomic RNA, enabling the RTC to complete the RNA synthesis with a very low dissociation rate. nsp7 plays a crucial role in maintaining binding of the RTC to the RNA. nsp14 subunit of the RTC does not affect the processivity (Subissi et al. 2014).

**Editions**

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