

# Viral Polymerase Assembly

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03/05/2024

## 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

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Reactome database release: 88

This document contains 1 reaction ([see Table of Contents](#))

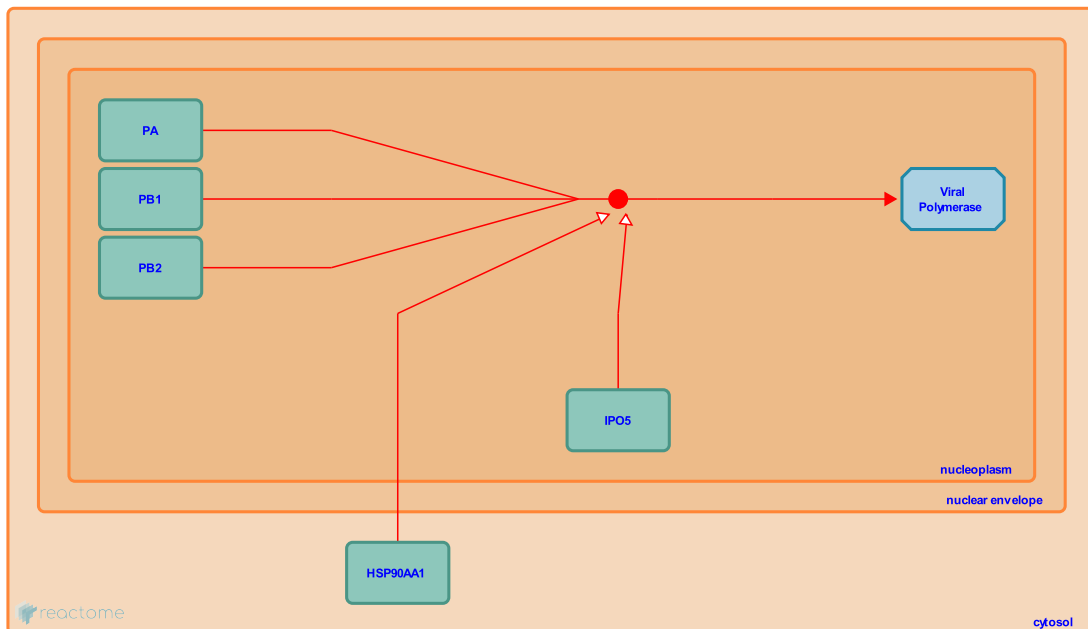
## Viral Polymerase Assembly [↗](#)

**Stable identifier:** R-HSA-192830

**Type:** binding

**Compartments:** nucleoplasm

**Diseases:** influenza



The mature ternary influenza viral polymerase complex consists of PB1, PB2, and PA. The N-terminus of PB1 (residues 1-48) interacts with PB2, and amino acids 506-659 in PB1 interact with the PA subunit (Gonzalez, 1996; Perez, 2001). Although monomeric PB1, PB2 and PA, as well as PB1-PB2 and PB1-PA dimers are likely to exist in infected cells, it is believed that most of the polymerase proteins are assembled into the trimeric PB1-PB2-PA complex (Detjen, 1987). Newly synthesized subunits of the polymerase are imported into the nucleus through nuclear localization signals (NLS), which interact with cellular importin family proteins (Jones, 1986; Buolo, 2006). Importin beta-3 (Ran binding protein 5) facilitates nuclear import of PB1 and a PB1-PA dimer (Deng, 2006); coexpression of PA with PB1 was shown to enhance the import of PB1 (Fodor, 2004). A PB1-PB2 dimer has been found to interact with the molecular chaperone heat shock protein 90 (HSP90) to facilitate import (Naito, 2007). The three subunits assembled in the nucleus form a mature ternary polymerase complex that binds viral vRNA or cRNA (Jones, 1986; Buolo, 2006).

## Literature references

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## Editions

2007-02-13

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2007-02-13

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