

Export of Spliced Viral mRNA

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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

- Fabregat, A., Sidiropoulos, K., Viteri, G., Forner, O., Marin-Garcia, P., Arnau, V. et al. (2017). Reactome pathway analysis: a high-performance in-memory approach. *BMC bioinformatics*, 18, 142. [↗](#)
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- Fabregat, A., Korninger, F., Viteri, G., Sidiropoulos, K., Marin-Garcia, P., Ping, P. et al. (2018). Reactome graph database: Efficient access to complex pathway data. *PLoS computational biology*, 14, e1005968. [↗](#)

Reactome database release: 88

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

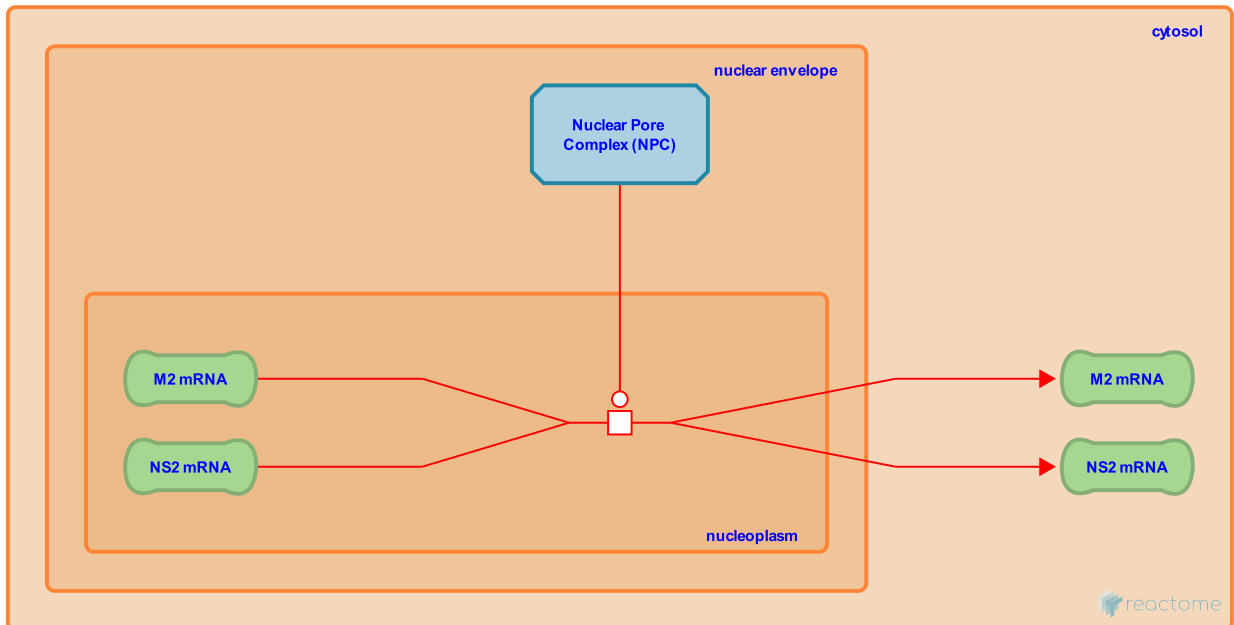
Export of Spliced Viral mRNA ↗

Stable identifier: R-HSA-192925

Type: transition

Compartments: nucleoplasm

Diseases: influenza



In the cases of spliced, polyadenylated mRNA transcribed from M (segment 7) and NS (segment 8) vRNA templates (producing the spliced mRNA for M2 and NS2/NEP, respectively), export may be coupled to aspects of the cellular splicing and export mechanisms (Chen, 2000; Alonso-Caplan et al, 1992; Amorim, 2006). Simultaneously, the export of cellular mRNA appear to be inhibited by the viral NS1 protein, which binds to the cellular cleavage and polyadenylation specificity factor (CPSF), preventing polyadenylation and completion of pre-mRNA processing (Nemerof et al., 1998; Fortes, 1994; Lu, 1994; Li, 2001).

Literature references

Qiu, Y., Krug, RM., Alonso-Caplan, FV., Nemeroff, ME. (1992). Nucleocytoplasmic transport: the influenza virus NS1 protein regulates the transport of spliced NS2 mRNA and its precursor NS1 mRNA. *Genes Dev*, 6, 255-67. ↗

Chen, Z., Krug, RM. (2000). Selective nuclear export of viral mRNAs in influenza-virus-infected cells. *Trends Microbiol*, 8, 376-83. ↗

Editions

2007-02-13	Authored	Garcia-Sastre, A., Bortz, E.
2007-02-13	Reviewed	Squires, B.