

Formation of DSIF:NELF:HIV-1 early elongation complex

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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. [↗](#)

Sidiropoulos, K., Viteri, G., Sevilla, C., Jupe, S., Webber, M., Orlic-Milacic, M. et al. (2017). Reactome enhanced pathway visualization. *Bioinformatics*, 33, 3461-3467. [↗](#)

Fabregat, A., Jupe, S., Matthews, L., Sidiropoulos, K., Gillespie, M., Garapati, P. et al. (2018). The Reactome Pathway Knowledgebase. *Nucleic Acids Res*, 46, D649-D655. [↗](#)

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](#))

Formation of DSIF:NELF:HIV-1 early elongation complex ↗

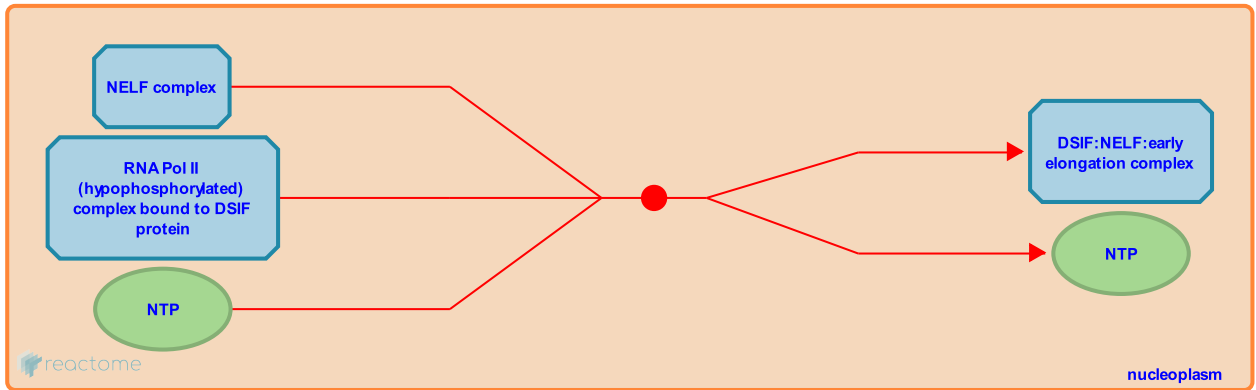
Stable identifier: R-HSA-167085

Type: binding

Compartments: nucleoplasm

Diseases: Human immunodeficiency virus infectious disease

Inferred from: [Formation of DSIF:NELF:early elongation complex \(Homo sapiens\)](#)



This HIV-1 event was inferred from the corresponding human RNA Pol II transcription event. NELF complex is a ~300 kDa multiprotein complex composed of 5 peptides (A - E): ~66,61,59,58 and 46 kDa (Yamaguchi et al 1999). All these peptides are required for NELF-mediated inhibition of Pol II elongation. NELF complex has been reported to bind to the pre-formed DSIF:RNA Pol II complex that may act as a scaffold for its binding. NELF-A is suspected to be involved in Wolf-Hirschhorn syndrome. Binding of DSIF:NELF to RNA Pol II CTD results in abortive termination of early elongation steps by the growing transcripts.

Literature references

Takagi, T., Yano, K., Furuya, A., Wada, T., Handa, H., Hasegawa, J. et al. (1999). NELF, a multisubunit complex containing RD, cooperates with DSIF to repress RNA polymerase II elongation. *Cell*, 97, 41-51. ↗

Editions

2005-07-27	Authored	Matthews, L., Rice, AP.
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