

Formation of the Spliceosomal B 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: 82

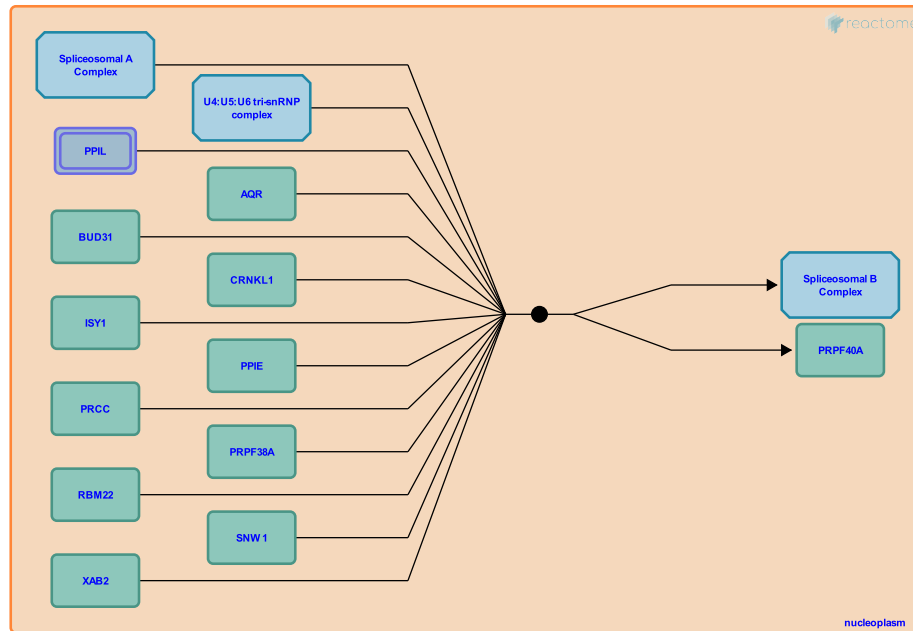
This document contains 1 reaction ([see Table of Contents](#))

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Stable identifier: R-HSA-72127

Type: binding

Compartments: nucleoplasm



The formation of the B complex is ATP-dependent, and both the 5' and 3' splice sites are essential for B complex assembly. The U4 and U6 snRNPs are extensively base-paired, and this U4:U6 complex associates with the U5 snRNP to form a tri-snRNP particle. This tri-snRNP particle then binds to the spliceosomal A complex, to form the spliceosomal B complex.

Literature references

- Hartmuth, K., Urlaub, H., Lührmann, R., Gentzel, M., Wilm, M., Vornlocher, HP. et al. (2002). Protein composition of human prespliceosomes isolated by a tobramycin affinity-selection method. *Proc Natl Acad Sci U S A*, 99, 16719-24. [↗](#)
- Lamond, AI., Mann, M., Rappsilber, J., Ryder, U. (2002). Large-scale proteomic analysis of the human spliceosome. *Genome Res*, 12, 1231-45. [↗](#)
- Will, CL., Lührmann, R., Deckert, J., Boehringer, D., Urlaub, H., Stark, H. et al. (2006). Protein composition and electron microscopy structure of affinity-purified human spliceosomal B complexes isolated under physiological conditions. *Mol. Cell. Biol.*, 26, 5528-43. [↗](#)

Editions

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