Formation of the Flap Intermediate on the C-strand

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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. ↗

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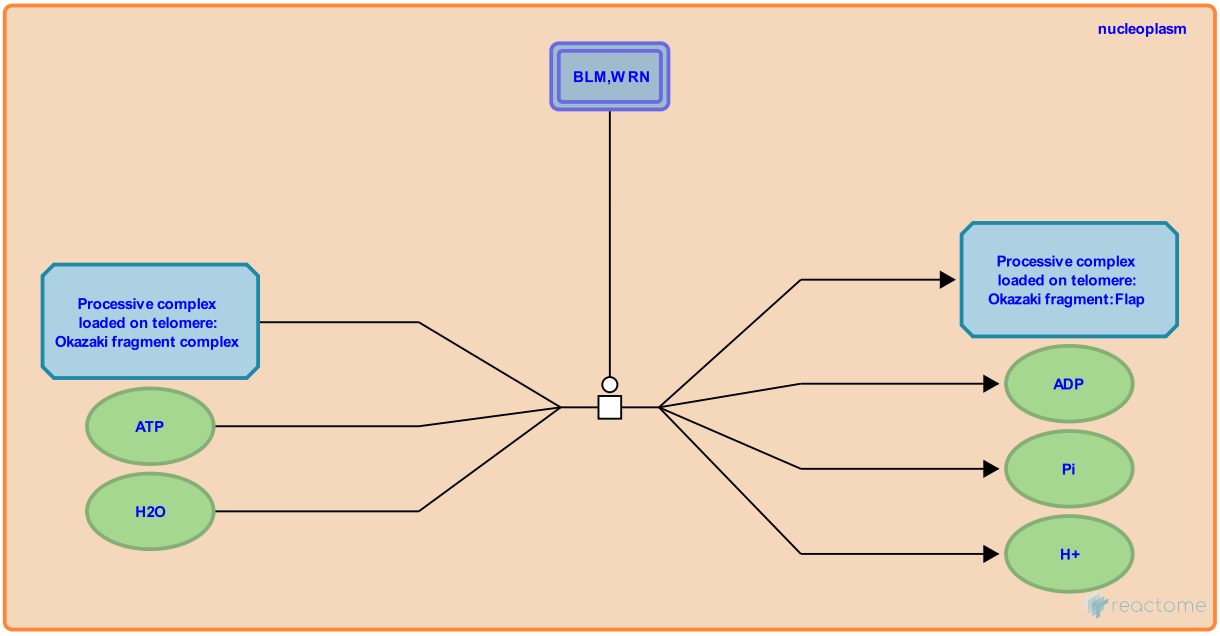
Stable identifier: R-HSA-174438

Type: transition

Compartments: nucleoplasm



When the polymerase delta:PCNA complex reaches a downstream Okazaki fragment, strand displacement synthesis occurs. The primer containing 5'-terminus of the downstream Okazaki fragment is folded into a single-stranded flap (Podust et al. 1995, Bae et al. 2001, Maga et al. 2001). The helicase activity of either WRN (Werner syndrome protein) or BLM (Bloom syndrome helicase) is needed for DNA polymerase delta progression and strand displacement synthesis across G-rich telomeric repeats during lagging strand (C-strand) synthesis (Li et al. 2017).

Literature references

Reddy, S., Li, B., Comai, L. (2017). The Werner Syndrome Helicase Coordinates Sequential Strand Displacement and FEN1-Mediated Flap Cleavage during Polymerase δ Elongation. *Mol. Cell. Biol., 37*. ↗

Editions

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