

Excision of FapyG by OGG1 glycosylase

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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

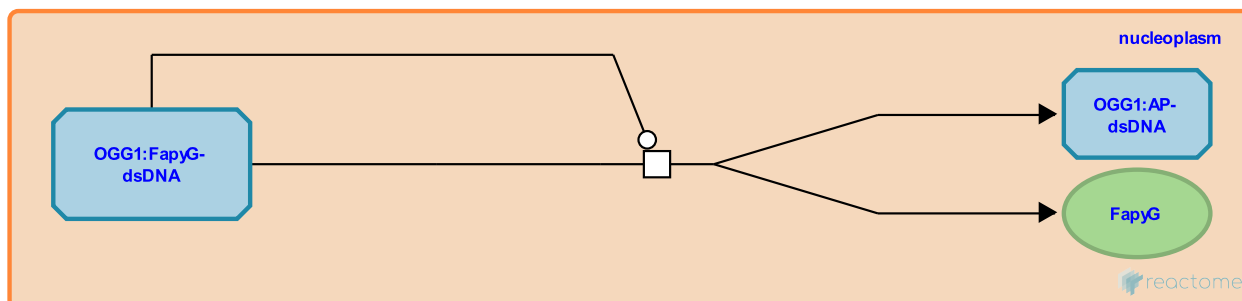
This document contains 1 reaction ([see Table of Contents](#))

Excision of FapyG by OGG1 glycosylase [↗](#)

Stable identifier: R-HSA-110244

Type: transition

Compartments: nucleoplasm



OGG1 acts as an N-glycosylase and a DNA beta-lyase to excise 2,6-diamino-4-hydroxy-5-formamidopyrimidine (FapyG), a one electron reduction product of guanine, from the DNA and to nick the sugar-phosphate backbone 5' to the created apurinic/apyrimidinic (AP) site (Hu et al. 2005).

Literature references

Dizdaroglu, M., Hogue, BA., Bohr, VA., de Souza-Pinto, NC., Jaruga, P., Haraguchi, K. et al. (2005). Repair of formamidopyrimidines in DNA involves different glycosylases: role of the OGG1, NTH1, and NEIL1 enzymes. *J. Biol. Chem.*, 280, 40544-51. [↗](#)

Editions

| | | |
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| 2004-02-03 | Authored, Edited | Matthews, L. |
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