

Oxidative dealkylation of 1-etA damaged DNA By ALKBH2

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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

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

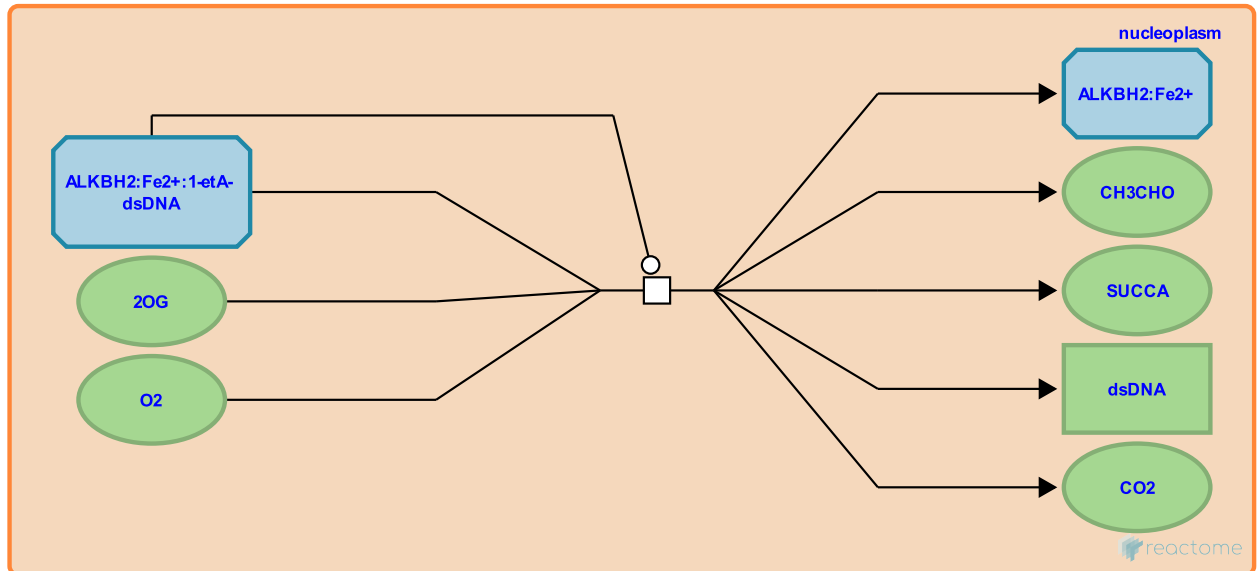
This document contains 1 reaction ([see Table of Contents](#))

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Stable identifier: R-HSA-112121

Type: transition

Compartments: nucleoplasm



ALKBH2 catalyzes removal of the ethyl group from 1-ethyladenine (1-etA) in a reaction that depends on oxygen, alpha-ketoglutarate and Fe²⁺. ALKBH2 thus directly reverses alkylation damage of DNA in the form of 1-etA, releasing acetaldehyde (Duncan et al. 2002).

Literature references

Lindahl, T., Duncan, T., Bates, PA., Sedgwick, B., Treweek, SC., Koivisto, P. (2002). Reversal of DNA alkylation damage by two human dioxygenases. *Proc Natl Acad Sci U S A*, 99, 16660-5. ↗

Editions

2004-02-04	Edited, Reviewed	Joshi-Tope, G.
2004-02-04	Authored	Pegg, AE.
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