

NEIL3 cleaves spiroiminodihydantoin

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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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Reactome database release: 88

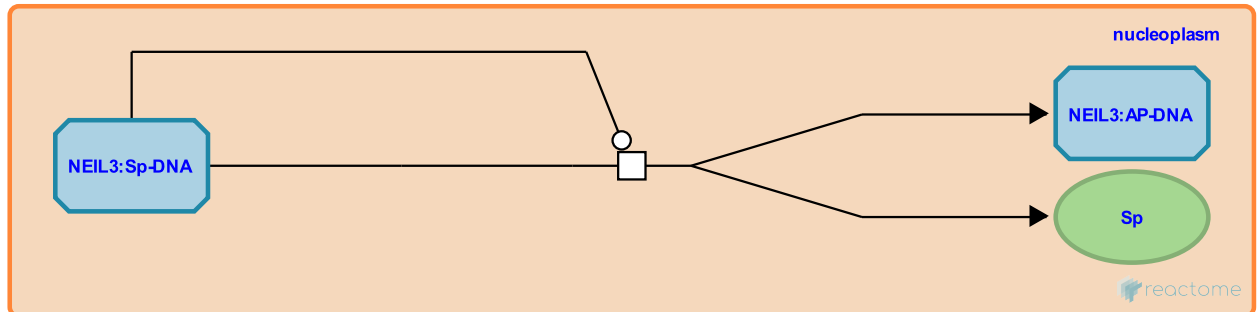
This document contains 1 reaction ([see Table of Contents](#))

NEIL3 cleaves spiroiminodihydantoin [↗](#)

Stable identifier: R-HSA-9629492

Type: transition

Compartments: nucleoplasm



NEIL3 cleaves oxidatively damaged guanine in the form of spiroiminodihydantoin (Sp) with a preference for single-strand DNA (ssDNA) over double-strand DNA (dsDNA), producing an abasic (AP) site (Krokeide et al. 2013). The preference of NEIL3 for ssDNA was structurally explained using mouse Neil3 (Liu et al. 2013).

Literature references

Salah, M., Dalhus, B., Cederkvist, FH., Bjørås, M., Burrows, CJ., Luna, L. et al. (2013). Human NEIL3 is mainly a monofunctional DNA glycosylase removing spiroimindiohydantoin and guanidinohydantoin. *DNA Repair (Amst.)*, 12, 1159-64. [↗](#)

Editions

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