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NEIL3 Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP51383

Product Information

Application	WB
Primary Accession	Q8TAT5
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	67769

Additional Information

Gene ID	55247
Other Names	Endonuclease 8-like 3, 322-, DNA glycosylase FPG2, DNA glycosylase/AP lyase Neil3, Endonuclease VIII-like 3, Nei-like protein 3, NEIL3
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the C-term region of human NEIL3. The exact sequence is proprietary.
Dilution	WB~~ 1:1000
Format	0.01M PBS, pH 7.2, 0.09% (W/V) Sodium azide, Glycerol 50%
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

Name	NEIL3
Function	DNA glycosylase which prefers single-stranded DNA (ssDNA), or partially ssDNA structures such as bubble and fork structures, to double-stranded DNA (dsDNA) (PubMed:12433996, PubMed:19170771, PubMed:22569481, PubMed:23755964). Mediates interstrand cross-link repair in response to replication stress: acts by mediating DNA glycosylase activity, cleaving one of the two N-glycosyl bonds comprising the interstrand cross-link, which avoids the formation of a double-strand break but generates an abasic site that is bypassed by translesion synthesis polymerases (By similarity). In vitro, displays strong glycosylase activity towards the hydantoin lesions spiroiminodihydantoin (Sp) and guanidinohydantoin (Gh) in both ssDNA and dsDNA; also recognizes FapyA, FapyG, 5-OHU, 5-OHC, 5-OHMH, Tg and 8-oxoA lesions in ssDNA (PubMed:12433996, PubMed:19170771, PubMed:22569481, PubMed:23755964). No activity on 8-oxoG detected (PubMed:12433996, PubMed:19170771, PubMed:22569481, PubMed:23755964). Also shows weak DNA-(apurinic or apyrimidinic site) lyase activity (PubMed:12433996,

	PubMed:19170771, PubMed:22569481, PubMed:23755964). In vivo, appears to be the primary enzyme involved in removing Sp and Gh from ssDNA in neonatal tissues (PubMed:12433996, PubMed:19170771, PubMed:22569481, PubMed:23755964).
Cellular Location	Nucleus. Chromosome {ECO:0000250|UniProtKB:A0A1L8HU22}. Note=Recruited to replication stress sites via interaction with ubiquitinated CMG helicase {ECO:0000250|UniProtKB:A0A1L8HU22}
Tissue Location	Expressed in keratinocytes and embryonic fibroblasts (at protein level). Also detected in thymus, testis and fetal lung primary fibroblasts.

Background

DNA glycosylase which prefers single-stranded DNA (ssDNA), or partially ssDNA structures such as bubble and fork structures, to double-stranded DNA (dsDNA). In vitro, displays strong glycosylase activity towards the hydantoin lesions spiroiminodihydantoin (Sp) and guanidinohydantoin (Gh) in both ssDNA and dsDNA; also recognizes FapyA, FapyG, 5-OHU, 5-OHC, 5- OHMH, Tg and 8-oxoA lesions in ssDNA. No activity on 8-oxoG detected. Also shows weak DNA-(apurinic or apyrimidinic site) lyase activity. In vivo, appears to be the primary enzyme involved in removing Sp and Gh from ssDNA in neonatal tissues. Seems to be an important facilitator of cell proliferation in certain populations, for example neural stem/progenitor cells and tumor cells, suggesting a role in replication-associated DNA repair.

References

Takao M.,et al.J. Biol. Chem. 277:42205-42213(2002).
Ota T.,et al.Nat. Genet. 36:40-45(2004).
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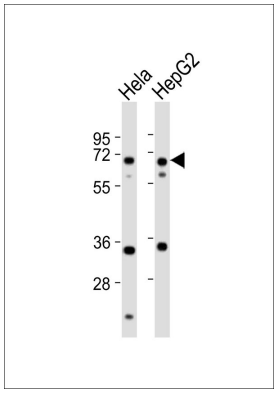
Morland I.,et al.Nucleic Acids Res. 30:4926-4936(2002).
Torisu K.,et al.J. Biochem. 138:763-772(2005).

Images



All lanes : Anti-NEIL3 Antibody at 1:1000 dilution Lane 1: Hela whole cell lysates Lane 2: HepG2 whole cell lysates Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L),Peroxidase conjugated at 1/10000 dilution Predicted band size : 68 kDa Blocking/Dilution buffer: 5% NFDM/TBST.