NEIL1 Protein, Human (His)

Cat. No.:	HY-P74734
Synonyms:	Endonuclease 8-like 1; Endonuclease VIII-like 1; FPG1; NEH1; NEIL1
Species:	Human
Source:	E. coli
Accession:	Q96FI4 (M1-S390)
Gene ID:	79661
Molecular Weight:	Approximately 45 kDa

PROPERTIES

AA Sequence	M P E G P E L H L A S Q F V N E A C R A L V F G G C V E K S S V S R N P E V P F E S S A Y R I S A S A R G K E L R L I L S P L P G A Q P Q Q E P L A L V F R F G M S G S F Q L V P R E E L P R H A H L R F Y T A P P G P R L A L C F V D I R R F G R W D L G G K W Q P G R G P C V L Q E Y Q Q F R E N V L R N L A D K A F D R P I C E A L L D Q R F F N G I G N Y L R A E I L Y R L K I P P F E K A R S V L E A L Q Q H R P S P E L T L S Q K I R T K L Q N P D L L E L C H S V P K E V V Q L G G K G Y G S E S G E E D F A A F R A W L R C Y G M P G M S S L Q D R H G R T I W F Q G D P G P L A P K G R K S R K K K S K A T Q L S P E D R V E D A L P P S K A P S R T R R A K R D L P K R T A T Q R P E G T S L Q Q D P E A P T V P K K G R R K G R Q A A S G H C R P R K V K A D I P S L E P E G T S A S
Biological Activity	Measured by its binding ability in a functional ELISA. Immobilized Human NEIL1 at 2 μg/mL (100 μL/well) can bind Anti-NEIL1 antibody, The ED_{50} for this effect is 25.76 ng/mL.
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 μm filtered solution of 50 mM Tris-HCL, 300 mM NaCl, pH 8.0.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	NEIL1, a crucial participant in base excision repair, plays a pivotal role in addressing DNA damage induced by oxidation or exposure to mutagenic agents. Functioning as a DNA glycosylase, NEIL1 recognizes and eliminates damaged bases, exhibiting a preference for oxidized pyrimidines such as thymine glycol, formamidopyrimidine (Fapy), and 5-hydroxyuracil. Although it shows marginal activity towards 8-oxoguanine, NEIL1 excels in AP (apurinic/apyrimidinic) lyase activity, introducing nicks in the DNA strand. Through beta-delta elimination, it cleaves the DNA backbone, generating a single-strand break at the site of the removed base, encompassing both 3'- and 5'-phosphates. Notably, NEIL1 demonstrates DNA glycosylase/lyase activity towards mismatched uracil and thymine, particularly in U:C and T:C mismatches. Moreover, its specific binding to 5-hydroxymethylcytosine (5hmC) suggests that NEIL1 serves as a specialized reader of this modified DNA base.

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