

Human NEIL1 Protein (His Tag)

Catalog Number: 12695-H08E



Sino Biological Inc.
Biological Solution Specialist

General Information

Gene Name Synonym:

FPG1; hFPG1; NEI1; 2810450N13Rik; Nei1

Protein Construction:

A DNA sequence encoding the human NEIL1 (AAH10876.1) (Met 1-Ser 390) was fused with a polyhistidine tag at the C-terminus and an initial Met at the N-terminus.

Source: Human

Expression Host: E. coli

QC Testing

Purity: > 84 % as determined by SDS-PAGE

Endotoxin:

Please contact us for more information.

Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

Predicted N terminal: Met 1

Molecular Mass:

The recombinant human NEIL1 comprises 400 amino acids and migrates as an approximately 45 kDa band as predicted in SDS-PAGE under reducing conditions.

Formulation:

Lyophilized from sterile 50mM Tris, 150mM NaCl, pH 8.0

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

Usage Guide

Storage:

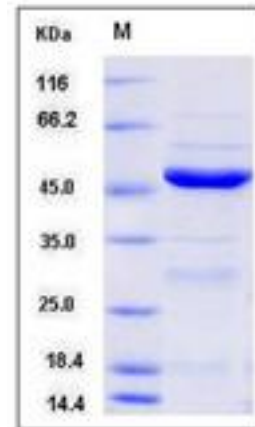
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

Avoid repeated freeze-thaw cycles.

Reconstitution:

Detailed reconstitution instructions are sent along with the products.

SDS-PAGE:



Protein Description

NEIL1 is a member of DNA glycosylases. DNA glycosylases are a family homologous to the bacterial Fpg/Nei family. They play a role in base excision repair which is the mechanism by which damaged bases in DNA are removed and replaced. The first step of this process is catalyzed by DNA glycosylases. They remove the damaged nitrogenous base while leaving the sugar-phosphate backbone intact, creating an apurinic/apyrimidinic site, commonly referred to as an AP site. NEIL1 functions in base excision repair of DNA damaged by oxidation or by mutagenic agents. It acts as DNA glycosylase that recognizes and removes damaged bases. NEIL1 prefers to oxidized pyrimidines, such as thymine glycol, formamidopyrimidine (Fapy) and 5-hydroxyuracil. Has marginal activity towards 8-oxoguanine. It has AP (apurinic/apyrimidinic) lyase activity and introduces nicks in the DNA strand and cleaves the DNA backbone by beta-delta elimination to generate a single-strand break at the site of the removed base with both 3'- and 5'-phosphates.

References

- 1.Zhang QM, *et al.* (2005) DNA glycosylase activities for thymine residues oxidized in the methyl group are functions of the hNEIL1 and hNTH1 enzymes in human cells. *DNA Repair*. 4 (1): 71-9.
- 2.Mokkapati SK, *et al.* (2004) Stimulation of DNA glycosylase activity of OGG1 by NEIL1: functional collaboration between two human DNA glycosylases. *Biochemistry*. 43 (36): 11596-604.
- 3.Shinmura K, *et al.* (2005) Inactivating mutations of the human base excision repair gene NEIL1 in gastric cancer. *Carcinogenesis*. 25 (12): 2311-7.

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Fax :+86-10-51029969 • Tel:+86-400-890-9989 • <http://www.sinobiological.com>