

NEIL1 (B-1): sc-271167

BACKGROUND

NEIL1, NEIL2 and NEIL3, also known as Endonuclease VIII-like 1, 2 and 3 or DNA-(apurinic or apyrimidinic site) lyase NEIL 1, 2 and 3, are nuclear proteins involved in the repair of DNA damaged by oxidation. The NEIL proteins belong to the FPG family of proteins. They act as DNA glycosylases that can recognize and remove damaged bases, leaving an abasic site. NEIL3, however, lacks the proline residue at the N-terminus which acts as the active site residue found in NEIL1 and NEIL2. NEIL1 is a ubiquitously expressed protein that is upregulated during S-phase. NEIL2 is expressed primarily in testis, heart, skeletal muscle, placenta, brain, kidney and liver while NEIL3 is detected primarily in thymus and testis.

REFERENCES

1. Hazra, T.K., et al. 2002. Identification and characterization of a novel human DNA glycosylase for repair of cytosine-derived lesions. *J. Biol. Chem.* 277: 30417-30420.
2. Dou, H., et al. 2003. Repair of oxidized bases in DNA bubble structures by human DNA glycosylases NEIL1 and NEIL2. *J. Biol. Chem.* 278: 49679-49684.
3. Shinmura, K., et al. 2004. Inactivating mutations of the human base excision repair gene NEIL1 in gastric cancer. *Carcinogenesis* 25: 2311-2317.
4. Das, A., et al. 2004. Identification of a zinc finger domain in the human NEIL2 protein. *J. Biol. Chem.* 279: 47132-47138.
5. Mokkapatil, S.K., et al. 2004. Stimulation of DNA glycosylase activity of OGG1 by NEIL1: functional collaboration between two human DNA glycosylases. *Biochemistry* 43: 11596-11604.
6. Hailer, M.K., et al. 2005. Recognition of the oxidized lesions spiroiminodihydantoin and guanidinohydantoin in DNA by the mammalian base excision repair DNA. *DNA Repair* 4: 41-50.

CHROMOSOMAL LOCATION

Genetic locus: NEIL1 (human) mapping to 15q24.2.

SOURCE

NEIL1 (B-1) is a mouse monoclonal antibody raised against amino acids 1-49 mapping at the N-terminus of NEIL1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-271167 X, 200 µg/0.1 ml.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

NEIL1 (B-1) is recommended for detection of NEIL1 of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for NEIL1 siRNA (h): sc-61166, NEIL1 shRNA Plasmid (h): sc-61166-SH and NEIL1 shRNA (h) Lentiviral Particles: sc-61166-V.

NEIL1 (B-1) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

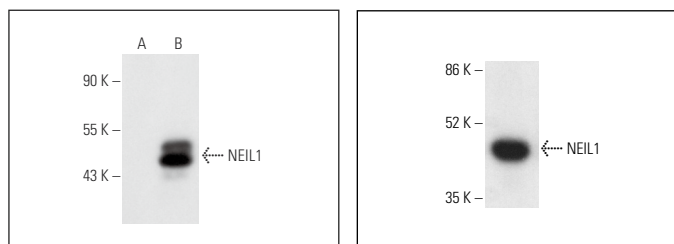
Molecular Weight of NEIL1: 47 kDa.

Positive Controls: NEIL1 (h): 293 Lysate: sc-111234.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



NEIL1 (B-1): sc-271167. Western blot analysis of NEIL1 expression in non-transfected: sc-110760 (A) and human NEIL1 transfected: sc-111234 (B) 293 whole cell lysates.

NEIL1 (B-1): sc-271167. Western blot analysis of NEIL1 expression in SP2/O whole cell lysate. Detection reagent used: m-IgG₁ BP-HRP: sc-525408.

SELECT PRODUCT CITATIONS

1. Chaisaingmongkol, J., et al. 2012. Epigenetic screen of human DNA repair genes identifies aberrant promoter methylation of NEIL1 in head and neck squamous cell carcinoma. *Oncogene* 31: 5108-5116.

RESEARCH USE

For research use only, not for use in diagnostic procedures.