SANTA CRUZ BIOTECHNOLOGY, INC.

NEIL3 (F-6): sc-393531

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. 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. Thus, reports of NEIL3 DNA glycosylase activity are contradictory. NEIL3 localizes to the nucleus and only demonstrates expression in thymus and testis tissues. The deduced 605 amino acid NEIL3 protein contains both one FPG-type zinc finger and one RanBP2-type zinc finger.

REFERENCES

1. Morland, I., et al. 2002. Human DNA glycosylases of the bacterial Fpg/MutM superfamily: an alternative pathway for the repair of 8-oxoguanine and other oxidation products in DNA. Nucleic Acids Res. 30: 4926-4936.
2. Takao, M., et al. 2002. A back-up glycosylase in NTH1 knock-out mice is a functional NEI (endonuclease VIII) homologue. J. Biol. Chem. 277: 42205-42213.
3. Rosenquist, T.A., et al. 2003. The novel DNA glycosylase, NEIL1, protects mammalian cells from radiation-mediated cell death. DNA Repair 2: 581-591.
4. Inoue, M., et al. 2004. Expression of the oxidative base excision repair enzymes is not induced in TK6 human lymphoblastoid cells after low doses of ionizing radiation. Radiat. Res. 161: 409-417.
5. Colley, J., et al. 2005. Rapid recognition of aberrant dHPLC elution profiles using the Transgenomic Navigator software. Hum. Mutat. 26: 165.
6. Torisu, K., et al. 2006. Hematopoietic tissue-specific expression of mouse NEIL3 for endonuclease VIII-like protein. J. Biochem. 138: 763-772.
7. LocusLink Report (LocusID: 55247). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: Neil3 (mouse) mapping to 8 B1.3.

SOURCE

NEIL3 (F-6) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 27-48 near the N-terminus of NEIL3 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_3 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-393531 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-393531 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

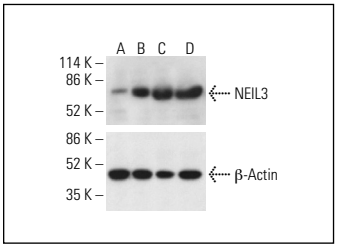
NEIL3 (F-6) is recommended for detection of NEIL3 of mouse origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for NEIL3 siRNA (m): sc-61171, NEIL3 shRNA Plasmid (m): sc-61171-SH and NEIL3 shRNA (m) Lentiviral Particles: sc-61171-V.

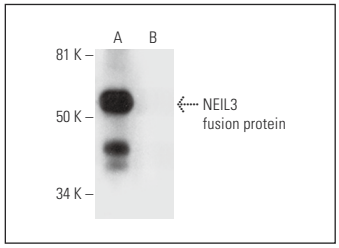
Molecular Weight of NEIL3: 68 kDa.

Positive Controls: chemically-treated NIH/3T3 whole cell lysate.

DATA



NEIL3 (F-6): sc-393531. Western blot analysis of NEIL3 expression in untreated (**A**) and chemically-treated (**B**, **C**, **D**) NIH/3T3 whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102. β-Actin (C4): sc-47778 used as loading control. Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



NEIL3 (F-6): sc-393531. Western blot analysis of mouse recombinant NEIL3 fusion protein (**A**) and human recombinant NEIL3 fusion protein (**B**). Note lack of reactivity with human NEIL3 in lane **B**.

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.