

# NEIL3 (D-15): sc-50745

## 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 resi-due 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. Takao, M., Kanno, S., Kobayashi, K., Zhang, Q.M., Yonei, S., van der Horst, G.T. and Yasui, A. 2002. A back-up glycosylase in Nth1 knock-out mice is a functional Nei (endonuclease VIII) homologue. *J. Biol. Chem.* 277: 42205-42213.
2. Morland, I., Rolseth, V., Luna, L., Rognes, T., Bjørås, M. and Seeberg, E. 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.
3. Rosenquist, T.A., Zaika, E., Fernandes, A.S., Zharkov, D.O., Miller, H. and Grollman, A.P. 2003. The novel DNA glycosylase, NEIL1, protects mammalian cells from radiation-mediated cell death. *DNA Repair* 2: 581-591.
4. Inoue, M., Shen, G.P., Chaudhry, M.A., Galick, H., Blaisdell, J.O. and Wallace, S.S. 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.

## CHROMOSOMAL LOCATION

Genetic locus: NEIL3 (human) mapping to 4q34.3; Neil3 (mouse) mapping to 8 B1.3.

## SOURCE

NEIL3 (D-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of NEIL3 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-50745 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

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

## APPLICATIONS

NEIL3 (D-15) is recommended for detection of NEIL3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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 (h): sc-61170, NEIL3 siRNA (m): sc-61171, NEIL3 siRNA (r): sc-108086, NEIL3 shRNA Plasmid (h): sc-61170-SH, NEIL3 shRNA Plasmid (m): sc-61171-SH, NEIL3 shRNA Plasmid (r): sc-108086-SH, NEIL3 shRNA (h) Lentiviral Particles: sc-61170-V, NEIL3 shRNA (m) Lentiviral Particles: sc-61171-V and NEIL3 shRNA (r) Lentiviral Particles: sc-108086-V.

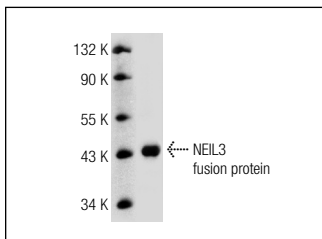
NEIL3 (D-15) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of NEIL3: 70 kDa.

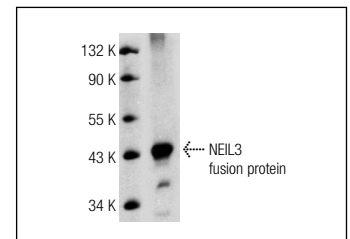
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



NEIL3 (D-15): sc-50745. Western blot analysis of mouse recombinant NEIL3 fusion protein.



NEIL3 (D-15): sc-50745. Western blot analysis of human recombinant NEIL3 fusion protein.

## RESEARCH USE

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

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Try **NEIL3 (A-1): sc-393703** or **NEIL3 (F-6): sc-393531**, our highly recommended monoclonal alternatives to NEIL3 (D-15).