SANTA CRUZ BIOTECHNOLOGY, INC.

SMUG1 (C-12): sc-26880

BACKGROUND

The base excision repair (BER) pathway removes incorrect bases (uracil) or damaged bases (3-methyladenine) from chromatin. Each BER enzyme system addresses a specific type of base damage. Uracil-DNA glycosylases, UNG2 and SMUG1 (single-strand selective monofunctional uracil DNA glycosylase) remove uracil from both double- and single-stranded DNA in nucleosomes (chromatin core particle). The uracil-excising enzyme family shares structural and functional conservation with minimal sequence conservation. The human SMUG1 gene maps to chromosome 12q13.13.

REFERENCES

1. Haushalter, K.A., et al. 1999. Identification of a new uracil-DNA glycosylase family by expression cloning using synthetic inhibitors. Curr. Biol. 9: 174-185.
2. Nilsen, H., et al. 2001. Excision of deaminated cytosine from the vertebrate genome: role of the SMUG1 uracil-DNA glycosylase. EMBO J. 20: 4278-4286.
3. Nilsen, H., et al. 2002. DNA base excision repair of uracil residues in reconstituted nucleosome core particles. EMBO J. 21: 12411511
4. Kavli, B., et al. 2002. hUNG2 is the major repair enzyme for removal of uracil from U:A matches, U:G mismatches, and U in single-stranded DNA, with hSMUG1 as a broad specificity backup. J. Biol. Chem. 277: 39926-39936.
5. LocusLink Report (LocusID: 2243). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: SMUG1 (human) mapping to 12q13.13; Smug1 (mouse) mapping to 15 F3.

SOURCE

SMUG1 (C-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of SMUG1 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-26880 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.

PROTOCOLS

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

APPLICATIONS

SMUG1 (C-12) is recommended for detection of SMUG1 of mouse 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 SMUG1 siRNA (h): sc-106768, SMUG1 siRNA (m): sc-153643, SMUG1 shRNA Plasmid (h): sc-106768-SH, SMUG1 shRNA Plasmid (m): sc-153643-SH, SMUG1 shRNA (h) Lentiviral Particles: sc-106768-V and SMUG1 shRNA (m) Lentiviral Particles: sc-153643-V.

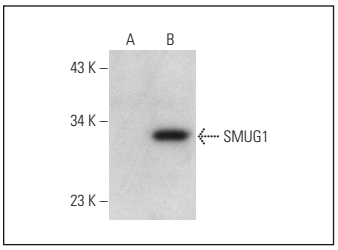
Molecular Weight of SMUG1: 34 kDa.

Positive Controls: SMUG1 (m): 293T Lysate: sc-123667.

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



SMUG1 (C-12): sc-26880. Western blot analysis of SMUG1 expression in non-transfected: sc-117752 (**A**) and mouse SMUG1 transfected: sc-123667 (**B**) 293T whole cell lysates.

RESEARCH USE

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