SANTA CRUZ BIOTECHNOLOGY, INC.

ENDOGL1 (N-12): sc-99394

BACKGROUND

DNA nucleases catalyze the cleavage of phosphodiester bonds. These enzymes play crucial roles in various DNA repair processes, which involve DNA replication, base excision repair, nucleotide excision repair, mismatch repair, and double strand break repair. Endonuclease G (ENDOG), a nuclear encoded protein, localizes to the mitochondrial inner membrane space. This sugar-nonspecific nuclease, responsible for major mitochondrial nuclease activity, preferentially cleaves single-stranded DNA (ssDNA). A related protein, ENDOGL1, also designated EXOG or ENGL, exhibits the same mitochondrial location and preference for ssDNA, but differs from ENDOG in substrate specificity. It functions primarily as a homodimer and is ubiquitously expressed. A Japanese population with type 2 diabetes share a single nucleotide polymorphism in intron 5 of ENDOGL1, suggesting that it is a candidate disease-susceptibility gene.

REFERENCES

1. Daigo, Y., et al. 1999. Characterization of a 1200-kb genomic segment of chromosome 3p22-p21.3. DNA Res. 6: 37-44.
2. Nishino, T., et al. 2002. Structure and function of nucleases in DNA repair: shape, grip and blade of the DNA scissors. Oncogene 21: 9022-9032.
3. Ikeda, S., et al. 2002. Mitochondrial factors modulate the activity of endonuclease G, the major nuclease of Mammalian mitochondria. J. Biochem. Mol. Biol. Biophys. 1: 17-21.
4. Ohsato, T., et al. 2002. Mammalian mitochondrial endonuclease G. Digestion of R-loops and localization in intermembrane space. Eur. J. Biochem. 23: 5765-5770.
5. Moritani, M., et al. 2007. Genetic association of single nucleotide polymorphisms in endonuclease G-like 1 gene with type 2 diabetes in a Japanese population. Diabetologia 50: 1218-1227.
6. Ahn, C.H., et al. 2008. Decreased expression of endonuclease G (EndoG), a pro-apoptotic protein, in hepatocellular carcinomas. APMIS. 116: 534-537.
7. Cymerman, I.A., et al. 2008. EXOG, a novel paralog of Endonuclease G in higher eukaryotes. Nucleic Acids Res. 36: 1369-1379.
8. Nielsen, M., et al. 2009. Nuclear translocation of endonuclease G in degenerating neurons after permanent middle cerebral artery occlusion in mice. Exp. Brain Res. 94: 17-27.

CHROMOSOMAL LOCATION

Genetic locus: EXOG (human) mapping to 3p21.3.

SOURCE

ENDOGL1 (N-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of ENDOGL1 of human origin.

STORAGE

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

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-99394 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

ENDOGL1 (N-12) is recommended for detection of ENDOGL1 of 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 ENDOGL1 siRNA (h): sc-77953, ENDOGL1 shRNA Plasmid (h): sc-77953-SH and ENDOGL1 shRNA (h) Lentiviral Particles: sc-77953-V.

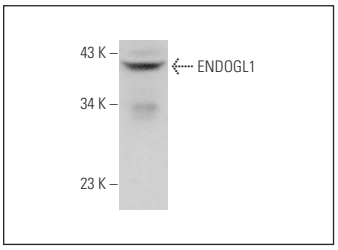
Molecular Weight of ENDOGL1: 41/26/17 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

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



ENDOGL1 (N-12): sc-99394. Western blot analysis of ENDOGL1 expression in Jurkat whole cell lysate.

RESEARCH USE

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

PROTOCOLS

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