SANTA CRUZ BIOTECHNOLOGY, INC.

ENDOG (B-2): sc-365359

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Endonuclease G (ENDOG), a nuclear encoded protein, localizes to the mitochondria. This sugar-nonspecific nuclease, responsible for major mitochondrial nuclease activity, preferentially cleaves single-stranded DNA(ssDNA). Synthesized as a propeptide with an amino-terminal presequence that targets the nuclease to mitochondria, ENDOG translocates to neuclei on apoptotic stimulation and act as a nuclease without sequence specificity. Both exonucleases and DNase I stimulate the ability of ENDOG to generate double-stranded DNA cleavage products at physiological ionic strengths, suggesting that these activities work in concert with ENDOG in apoptotic cells to ensure efficient DNA breakdown. In addition to deoxyribonuclease activities, ENDOG also has ribonuclease (RNase) and RNase H activities. ENDOG is capable of generating the RNA primers required by DNA polymerase γ to initiate replication of mitochondrial DNA. ENDOG exists in the mitochondrial intermembrane space, but not in the matrix where mtDNA replication occurs. This enzyme provides an important nicking function for mitochondrial DNA specifically cleaving DNA at GC tracts. Human ENDOG maps to chromosome 9q34.11.

CHROMOSOMAL LOCATION

Genetic locus: ENDOG (human) mapping to 9q34.11; Endog (mouse) mapping to 2 B.

SOURCE

ENDOG (B-2) is a mouse monoclonal antibody raised against amino acids 145-297 mapping at the C-terminus of ENDOG of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

ENDOG (B-2) is available conjugated to agarose (sc-365359 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365359 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365359 PE), fluorescein (sc-365359 FITC), Alexa Fluor® 488 (sc-365359 AF488), Alexa Fluor® 546 (sc-365359 AF546), Alexa Fluor® 594 (sc-365359 AF594) or Alexa Fluor® 647 (sc-365359 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365359 AF680) or Alexa Fluor® 790 (sc-365359 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

ENDOG (B-2) is recommended for detection of Endonuclease G of mouse, rat and 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).

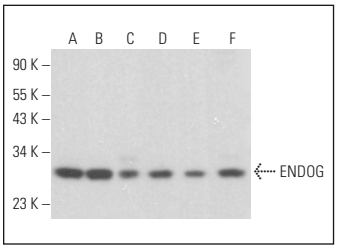
Suitable for use as control antibody for ENDOG siRNA (h): sc-105330, ENDOG siRNA (m): sc-144651, ENDOG shRNA Plasmid (h): sc-105330-SH, ENDOG shRNA Plasmid (m): sc-144651-SH, ENDOG shRNA (h) Lentiviral Particles: sc-105330-V and ENDOG shRNA (m) Lentiviral Particles: sc-144651-V.

Molecular Weight of ENDOG: 33 kDa.

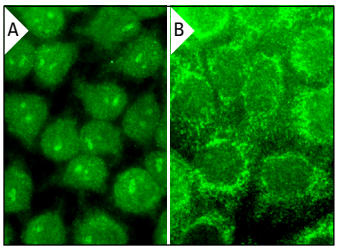
STORAGE

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

DATA



ENDOG (B-2): sc-365359. Western blot analysis of ENDOG expression in K-562 (**A**), RD (**B**), SJRH30 (**C**), C2C12 (**D**), L6 (**E**) and NIH/3T3 (**F**) whole cell lysates.



ENDOG (B-2): sc-365359. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (**A**). Immunofluorescence staining of formalin-fixed A-431 cells showing mitochondrial localization (**B**).

SELECT PRODUCT CITATIONS

1. Chou, H.Y., et al. 2017. Bufalin induced apoptosis in SCC-4 human tongue cancer cells by decreasing Bcl-2 and increasing Bax expression via the mitochondria-dependent pathway. Mol. Med. Rep. 16: 7959-7966.
2. Wiehe, R.S., et al. 2018. Endonuclease G promotes mitochondrial genome cleavage and replication. Oncotarget 9: 18309-18326.
3. Cho, H.D., et al. 2019. Auriculasin sensitizes primary prostate cancer cells to TRAIL-mediated apoptosis through up-regulation of the DR5-dependent pathway. Food Chem. Toxicol. 126: 223-232.
4. Won, Y.S. and Seo, K.I. 2020. Lupiwighteone induces caspase-dependent and -independent apoptosis on human breast cancer cells via inhibiting PI3K/Akt/mTOR pathway. Food Chem. Toxicol. 135: 110863.
5. Won, Y.S. and Seo, K.I. 2020. Sanggenol L promotes apoptotic cell death in melanoma skin cancer cells through activation of caspase cascades and apoptosis-inducing factor. Food Chem. Toxicol. 138: 111221.
6. Won, Y.S. and Seo, K.I. 2020. Sanggenol L induces apoptosis and cell cycle arrest via activation of p53 and suppression of PI3K/Akt/mTOR signaling in human prostate cancer cells. Nutrients 12: 488.
7. Eberle, J., et al. 2021. A Fibrinogen α fragment mitigates chemotherapy-induced MLL rearrangements. Front. Oncol. 11: 689063.
8. Gil, H.S., et al. 2021. AKF-D52, a synthetic phenoxypyrimidine-urea derivative, triggers extrinsic/intrinsic apoptosis and cytoprotective autophagy in human non-small cell lung cancer cells. Cancers 13: 5849.
9. Zhang, H., et al. 2021. A subcellular map of the human kinome. Elife 10: e64943.

RESEARCH USE

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