SANTA CRUZ BIOTECHNOLOGY, INC.

BNIP-3 (C-18): sc-1715

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The adenovirus E1B protein is a viral homolog of the Bcl-2 family of proteins that are involved in regulating cell death. A family of interacting proteins, which are designated Nip or Bnip and include BNIP-1, BNIP-2, BNIP-3 and Nix, associate with both the E1B protein and Bcl-2 proteins to mediate apoptotic signaling. BNIP-1 contains a hydrophobic transmembrane domain, which enables its localization to the nuclear envelope, endoplasmic recticulum and mitochondria. BNIP-2, (previously designated Nip2 and Nip21 in human and mouse respectively), shares homology with the non-catalytic domain of Cdc42 GTPase-activating protein (Cdc42GAP). Through binding to Cdc42GAP, BNIP-2 enhances the GTPase activity of Cdc42GAP, facilitating the hydrolysis of GTP bound to Cdc42 and thereby, mediating the signaling pathways involving receptor kinases, small GTPases and apoptotic proteins. Nix, which is also designated Nip3L or Bnip3L, is highly related to BNIP-3, and both proteins localize to the mitochondria where they associate with Bcl-2 proteins. BNIP-3 preferentially binds to Bcl-x_L and induces apoptosis by suppressing the anti-apoptosis activity of Bcl-x_L.

REFERENCES

1. Chiou, S.K., et al. 1994. Functional complementation of the adenovirus E1B 19 kilodalton protein with Bcl-2 in the inhibition of apoptosis in infected cells. J. Virol. 68: 6553-6566.
2. Boyd, J.M., et al. 1994. Adenovirus E1B 19 kDa and Bcl-2 proteins interact with a common set of cellular proteins. Cell 79: 341-351.
3. Subramanian, T., et al. 1995. Functional substitution identifies a cell survival promoting domain common to adenovirus E1B 19 kDa and Bcl-2 proteins. Oncogene 11: 2403-2409.

CHROMOSOMAL LOCATION

Genetic locus: BNIP3 (human) mapping to 10q26.3; Bnip3 (mouse) mapping to 7 F4.

SOURCE

BNIP-3 (C-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of BNIP-3 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-1715 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.

RESEARCH USE

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

APPLICATIONS

BNIP-3 (C-18) is recommended for detection of BNIP-3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

BNIP-3 (C-18) is also recommended for detection of BNIP-3 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for BNIP-3 siRNA (h): sc-37451, BNIP-3 siRNA (m): sc-37452, BNIP-3 shRNA Plasmid (h): sc-37451-SH, BNIP-3 shRNA Plasmid (m): sc-37452-SH, BNIP-3 shRNA (h) Lentiviral Particles: sc-37451-V and BNIP-3 shRNA (m) Lentiviral Particles: sc-37452-V.

Molecular Weight (predicted) of BNIP-3: 22 kDa.

Molecular Weight (observed) of BNIP-3: 22/30/60 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) 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.

SELECT PRODUCT CITATIONS

1. Yan, J., et al. 2006. 2-methoxyestradiol reduces cerebral vasospasm after 48 hours of experimental subarachnoid hemorrhage in rats. Exp. Neurol. 202: 348-356.
2. Banga, S., et al. 2007. *Legionella pneumophila* inhibits macrophage apoptosis by targeting pro-death members of the Bcl2 protein family. Proc. Natl. Acad. Sci. USA 104: 5121-5126.
3. Cheng, Y., et al. 2011. eEF-2 kinase dictates crosstalk between autophagy and apoptosis induced by Akt inhibition, thereby modulating cytotoxicity of novel Akt inhibitor MK-2206. Cancer Res. 71: 2654-2663.
4. Tan, C., et al. 2015. Curcumin inhibits hypoxia-induced migration in K1 papillary thyroid cancer cells. Exp. Biol. Med. 240: 925-935.
5. Cho, S., 2015. Syringaresinol protects against hypoxia/reoxygenation-induced cardiomyocytes injury and death by destabilization of HIF-1 in a FOXO3-dependent mechanism. Oncotarget 6: 43-55.