

BNIP3 Antibody (BH3 Domain Specific)

Purified Rabbit Polyclonal Antibody (Pab)

Catalog # AP1321a

Product Information

Application	IF, WB, IHC-P, E
Primary Accession	Q12983
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	21541
Antigen Region	215-252

Additional Information

Gene ID	664
Other Names	BCL2/adenovirus E1B 19 kDa protein-interacting protein 3, BNIP3, NIP3
Target/Specificity	This BNIP3 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 215-252 amino acids from human BNIP3.
Dilution	IF~~1:50~100 WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	BNIP3 Antibody (BH3 Domain Specific) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	BNIP3 (HGNC:1084)
Synonyms	NIP3
Function	Apoptosis-inducing protein that can overcome BCL2 suppression. May play a role in repartitioning calcium between the two major intracellular calcium stores in association with BCL2. Involved in mitochondrial quality control via

its interaction with SPATA18/MIEAP: in response to mitochondrial damage, participates in mitochondrial protein catabolic process (also named MALM) leading to the degradation of damaged proteins inside mitochondria. The physical interaction of SPATA18/MIEAP, BNIP3 and BNIP3L/NIX at the mitochondrial outer membrane regulates the opening of a pore in the mitochondrial double membrane in order to mediate the translocation of lysosomal proteins from the cytoplasm to the mitochondrial matrix. Plays an important role in the calprotectin (S100A8/A9)-induced cell death pathway.

Cellular Location

Mitochondrion. Mitochondrion outer membrane; Single-pass membrane protein. Note=Coexpression with the E1B 19-kDa protein results in a shift in NIP3 localization pattern to the nuclear envelope. Colocalizes with ACAA2 in the mitochondria. Colocalizes with SPATA18 at the mitochondrion outer membrane

Background

NIP3 is a member of the BCL2/adenovirus E1B 19 kd-interacting protein (BNIP) family. It interacts with the E1B 19 kDa protein which is responsible for the protection of virally-induced cell death, as well as E1B 19 kDa-like sequences of BCL2, also an apoptotic protector. NIP3 contains a BH3 domain and a transmembrane domain, which have been associated with pro-apoptotic function. The dimeric mitochondrial protein is known to induce apoptosis, even in the presence of BCL2.

References

References for protein:

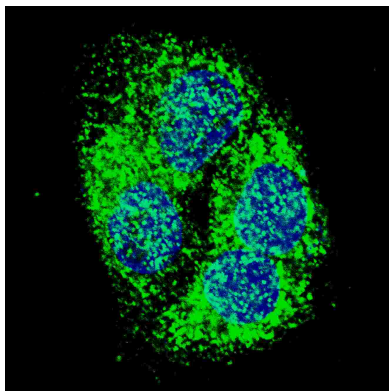
- 1.Kothari, S., et al., *Oncogene* 22(30):4734-4744 (2003).
- 2.Lee, S.M., et al., *Life Sci.* 71(19):2267-2277 (2002).
- 3.Ray, R., et al., *J. Biol. Chem.* 275(2):1439-1448 (2000).
- 4.Chen, G., et al., *J. Biol. Chem.* 274(1):7-10 (1999).
- 5.Yasuda, M., et al., *J. Biol. Chem.* 273(20):12415-12421 (1998).

References for HepG2 cell line:

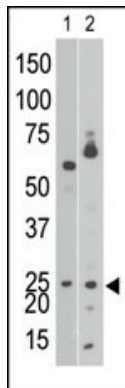
1. Knowles BB, et al. (1980). Human hepatocellular carcinoma cell lines secrete the major plasma proteins and hepatitis B surface antigen. *Science* 209: 497-499.[PubMed: 6248960].
2. Darlington GJ, et al. (1987). Growth and hepatospecific gene expression of human hepatoma cells in a defined medium. *In Vitro Cell. Dev. Biol.* 23: 349-354.[PubMed: 3034851].
3. Ihrke, G; Neufeld, EB; Meads, T; Shanks, MR; Cassio, D; Laurent, M; Schroer, TA; Pagano, RE et al. (1993). "WIF-B cells: an in vitro model for studies of hepatocyte polarity". *Journal of Cell Biology* 123 (6): 1761-1775. [PubMed:7506266].
4. Mersch-Sundermann, V.; Knasmüller, S.; Wu, X. J.; Darroudi, F.; Kassie, F. (2004). "Use of a human-derived liver cell line for the detection of cytoprotective, antigenotoxic and cogenotoxic agents". *Toxicology* 198 (1-3): 329-340. [PubMed:15138059].

Images

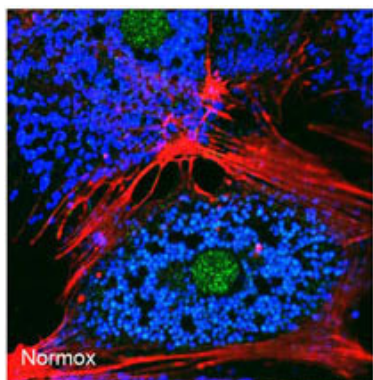
Fluorescent confocal image of HepG2 cells stained with BNIP3 (BH3 Domain Specific) antibody. HepG2 cells were fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.2%, 30 min). Cells were then incubated with AP1321a BNIP3 (BH3 Domain Specific) primary antibody (1:500, 2 h at room temperature). For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:1000, 1h). Nuclei were counterstained with Hoechst 33342 (blue) (10 µg/ml, 5



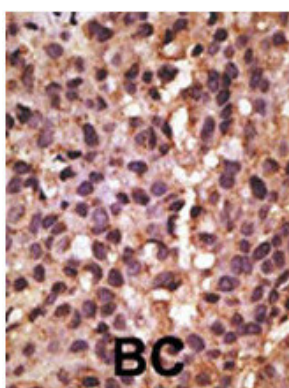
min). BNIP3 immunoreactivity is localized to the cytoplasm of HepG2 cells.



The anti-NIP3 BH3 domain Pab (Cat. #AP1321a) is used in Western blot to detect NIP3 BH3 in Ramos cell lysate (lane 1) and in mouse brain tissue lysate (lane 2).



Freshly isolated mouse hepatocytes plated on coverslips (2×10^5 cells/22-mm glass coverslip) were cultured under normoxic conditions for 6 hr. The cells were then fixed in 2% paraformaldehyde in PBS for 1 hr, and processed for confocal immunofluorescence (red: F-actin, blue: ATP-synthase, green: BNIP3). Fluorescence labeling of BNIP3 accomplished with anti-BNIP3 antibody Cat # AP1321a. Data courtesy of Ruben Zamora, University of Pittsburgh.



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

Citations

- [Chronic autophagy is a cellular adaptation to tumor acidic pH microenvironments.](#)
- [Autophagy and Bcl-2/BNIP3 death regulatory pathway in non-small cell lung carcinomas.](#)
- [Expression and subcellular localization of BNIP3 in hypoxic hepatocytes and liver stress.](#)

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