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BNIP3 Antibody (BH3 Domain Specific)
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1321a

Specification

BNIP3 Antibody (BH3 Domain Specific) - Product Information

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

BNIP3 Antibody (BH3 Domain Specific) - 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
WB~~1:1000
IHC-P~~1:50~100
IF~~1:50~100
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.

BNIP3 Antibody (BH3 Domain Specific) - 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.

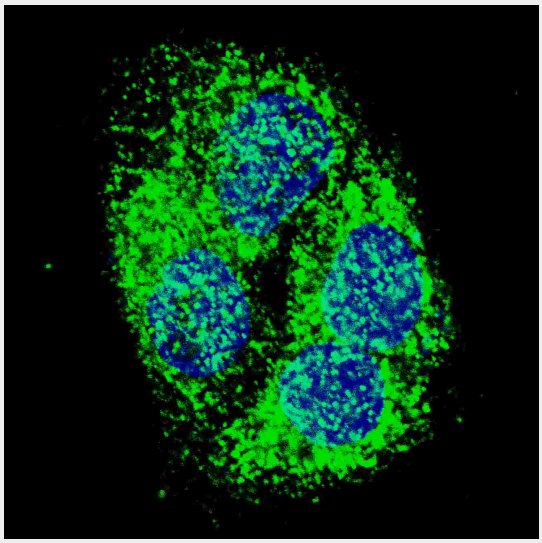
Cellular Location
Mitochondrion. Mitochondrion outer membrane; Single-pass membrane protein.
Note=Coexpression with the EIB 19-kDa protein results in a shift in NIP3 localization pattern to the nuclear envelope. Colocalizes with ACAA2 in the mitochondria. Colocalizes with SPATA18 at the mitochondrion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

BNIP3 Antibody (BH3 Domain Specific) - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

BNIP3 Antibody (BH3 Domain Specific) - 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.

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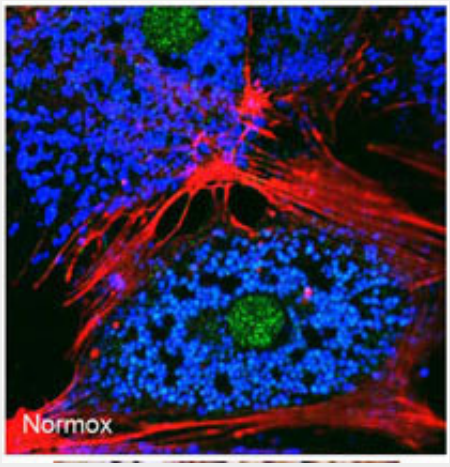
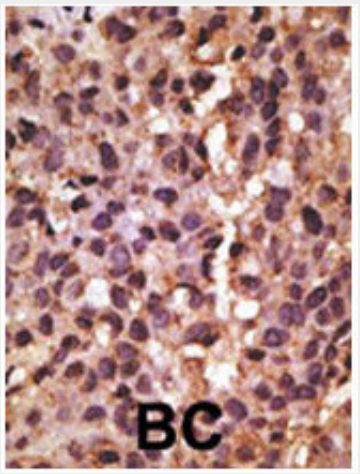


Freshly isolated mouse hepatocytes plated on coverslips (2 x105 cells/22-mm glass coverslip) were cultured under normoxic conditions for 6 hr. The cells were then fixed in 2% paraformaldehyde in PBS for 1 hr, and processed for confocal immunofluorescence (red: F-actin, blue: ATP-synthase, green: BNIP3). 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.

BNIP3 Antibody (BH3 Domain Specific) - 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.

BNIP3 Antibody (BH3 Domain Specific) - 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].

BNIP3 Antibody (BH3 Domain Specific) - Citations

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