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BNIP3 (D7U1T) Rabbit mAb



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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP, IHC-P, IF-IC	H	Endogenous	22-28, 50-55	Rabbit IgG	#Q12983	664

Product Usage Information

Application

Western Blotting
Immunoprecipitation
Immunohistochemistry (Paraffin)
Immunofluorescence (Immunocytochemistry)

Dilution

1:1000
1:100
1:100
1:800

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity / Sensitivity

BNIP3 (D7U1T) Rabbit mAb recognizes endogenous levels of total BNIP3 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human BNIP3 protein.

Background

BNIP3 (Bcl-2/E1B-19kDa interacting protein 3) is a pro-apoptotic mitochondrial protein and Bcl-2 family member that contains a Bcl-2 homology 3 (BH3) domain and a carboxyl-terminal transmembrane (TM) domain (1-3). While BNIP3 has a predicted molecular weight of about 22 kDa, it runs anomalously on SDS-PAGE and includes a band of around 60 kDa that may be a dimeric form that is not reduced (2). BNIP3 associates with anti-apoptotic family members Bcl-2, Bcl-xL, and the adenovirus homologue E1B-19kDa. BNIP3 is distinct from other Bcl-2 family members that contain only the BH3 domain in that the TM domain, and not the BH3 domain, is required for mitochondrial targeting and pro-apoptotic activity (4). In addition to apoptosis, BNIP3 has been implicated in necrosis (5) and autophagy (6-11). In hypoxic conditions, BNIP3 can induce mitochondrial autophagy (mitophagy) by disrupting the Bcl-2-Beclin-1 complex (9). BNIP3 can also promote mitophagy by triggering the translocation of the E3 ubiquitin ligase Parkin to the mitochondria (10) or by directly binding LC3 on the autophagosome (11). BNIP3 may also localize to the endoplasmic reticulum (ER) where it can selectively induce the autophagic clearance of ER (ERphagy) (11). Increased expression of BNIP3 under hypoxic conditions is mainly regulated by the transcription factor HIF-1α (12-14). Silencing of the BNIP3 promoter by methylation has been observed in several types of cancer cells and may play an important role in their survival (14-18).

Background References

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Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting **IP:** Immunoprecipitation **IHC-P:** Immunohistochemistry (Paraffin)
IF-IC: Immunofluorescence (Immunocytochemistry)

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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