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BNIP3 Antibody



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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB	M R	Endogenous	22-28, 50-55	Rabbit	#O55003	12176

Product Usage Information	Application Western Blotting	Dilution 1:1000
Storage	Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.	
Specificity / Sensitivity	BNIP3 Antibody detects endogenous levels of total BNIP3 protein from mouse and rat.	
Source / Purification	Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ser60 of BNIP3 from mouse/rat. Antibodies were purified by peptide affinity chromatography.	
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-Bcln-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	1. Boyd, J.M. et al. (1994) <i>Cell</i> 79, 341-51. 2. Chen, G. et al. (1997) <i>J Exp Med</i> 186, 1975-83. 3. Yasuda, M. et al. (1998) <i>J Biol Chem</i> 273, 12415-21. 4. Ray, R. et al. (2000) <i>J Biol Chem</i> 275, 1439-48. 5. Vande Velde, C. et al. (2000) <i>Mol Cell Biol</i> 20, 5454-68. 6. Daido, S. et al. (2004) <i>Cancer Res</i> 64, 4286-93. 7. Tracy, K. et al. (2007) <i>Mol Cell Biol</i> 27, 6229-42. 8. Quinsay, M.N. et al. (2010) <i>Autophagy</i> 6, 855-62. 9. Bellot, G. et al. (2009) <i>Mol Cell Biol</i> 29, 2570-81. 10. Lee, Y. et al. (2011) <i>Am J Physiol Heart Circ Physiol</i> 301, H1924-31. 11. Hanna, R.A. et al. (2012) <i>J Biol Chem</i> 287, 19094-104. 12. Bruick, R.K. (2000) <i>Proc Natl Acad Sci USA</i> 97, 9082-7. 13. Guo, K. et al. (2001) <i>Cell Death Differ</i> 8, 367-76. 14. Sowter, H.M. et al. (2001) <i>Cancer Res</i> 61, 6669-73. 15. de Angelis, P.M. et al. (2004) <i>Int J Oncol</i> 24, 1279-88. 16. Okami, J. et al. (2004) <i>Cancer Res</i> 64, 5338-46. 17. Murai, M. et al. (2005) <i>Clin Cancer Res</i> 11, 1021-7. 18. Murai, M. et al. (2005) <i>Br J Cancer</i> 92, 1165-72.	

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

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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