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Bax Monoclonal Antibody (2D2)

Catalog Number 33-6400

Product data sheet

Details

Size	100 µg
Host/Isotope	Mouse / IgG1
Class	Monoclonal
Type	Antibody
Clone	2D2
Immunogen	Synthetic peptide corresponding to a sequence at the N-terminal of the human protein.
Conjugate	Unconjugated
Form	Liquid
Concentration	0.5 mg/mL
Purification	Protein A
Storage buffer	PBS, pH 7.4
Contains	0.1% sodium azide
Storage Conditions	-20°C

Species Reactivity

Species reactivity	Human, Mouse, Non-human primate
Published species	Rat, Bacteria, Human, Mouse, Not Applicable

Tested Applications	Dilution *
ELISA (ELISA)	Assay-dependent
Immunohistochemistry (Paraffin) (IHC (P))	1:50-1:500
Immunoprecipitation (IP)	Assay-dependent
Western Blot (WB)	1:100-1:1,000

Published Applications

Western Blot (WB)	See 11 publications below
Immunohistochemistry (IHC)	See 3 publications below
Immunocytochemistry (ICC/IF)	See 1 publications below
ELISA (ELISA)	See 1 publications below
Immunohistochemistry (Paraffin) (IHC (P))	See 4 publications below
Miscellaneous PubMed (Misc)	See 5 publications below

* Suggested working dilutions are given as a guide only. It is recommended that the user titrate the product for use in their own experiment using appropriate negative and positive controls.

Background/Target Information

BAX is a members of the Bcl-2 Family and plays an important role in regulation of apoptosis. Whereas Bcl-2 is commonly regarded as an anti-apoptotic protein, BAX is considered to have a pro-apoptotic function. Regulation of apoptosis is supposed to involve both homo- and heterodimerization of different isoforms of BAX and Bcl-2. The Bax gene encodes different isoforms including Bax alpha (21 kDa) and Bax beta (24 kDa), whereas both isoforms contain the BH1, BH2 and BH3 domains, Bax beta has a unique carboxyl terminus and does not contain a hydrophobic transmembrane domain. Bcl-2 is also expressed in different Isoforms. Bcl-2 beta differs in the 3' UTR and coding region compared to variant alpha. Bcl-2 beta is shorter (22 kDa) and has a distinct C-terminus compared to Bcl-2 alpha (26 kDa). BAX is a member of the BCL-2 family of proteins, which function as regulators of apoptosis. Overexpression of BAX functions to promote cell death. BAX can form homodimers and is also able to heterodimerize with other BCL-2 related proteins.

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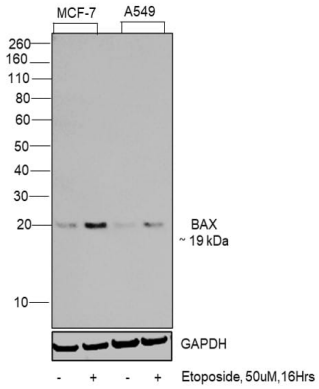
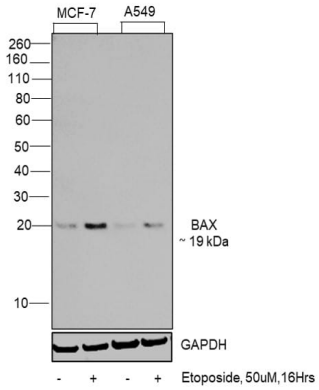
Product Images For Bax Monoclonal Antibody (2D2)



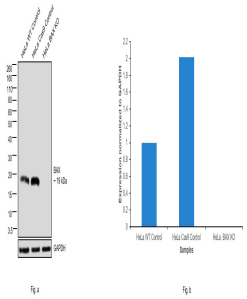
Bax Antibody (33-6400)

Altered expression of proteins upon cell treatment demonstrates antibody specificity. Western blot using Bax Monoclonal Antibody (2D2)(Product #33-6400), shows expression of BAX was found to be up regulated upon etoposide treatment in A549 and MCF-7 cells. {TM}



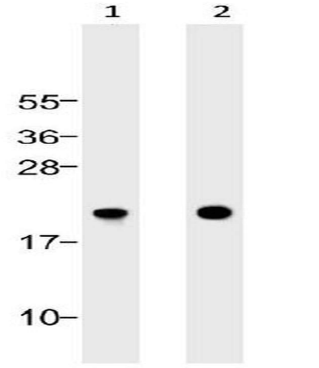
Bax Antibody (33-6400) in WB

Western blot was performed using Anti-Bax Monoclonal Antibody (2D2)(Product # 33-6400) and a 19kDa band corresponding to Bax was observed across cell lines tested. Whole cell extracts (30 µg lysate) of MCF7 (Lane 1), MCF7 treated with Etoposide (50uM, 16 Hrs.) (Lane 2), A549 (Lane 3), A549 treated with Etoposide (50uM, 16 Hrs.) (Lane 4) were electrophoresed using NuPAGE™ 4-12% Bis-Tris Protein Gel (Product # NP0322BOX). Resolved proteins were then transferred onto a Nitrocellulose membrane (Product # IB23001) by iBlot® 2 Dry Blotting System (Product # IB21001). The blot was probed with the primary antibody (1:1000 Dilution) and detected by chemiluminescence with Goat anti-Mouse IgG (H+L) Superclonal™ Recombinant Secondary Antibody, HRP (Product # A28177,1:4000) using the iBright FL 1000 (Product # A32752). Chemiluminescent detection was performed using Novex® ECL Chemiluminescent Substrate Reagent Kit (Product # WP20005).Expression of BAX was found to be up regulated upon etoposide treatment in A549 and MCF-7 cells.



Bax Antibody (33-6400)

Antibody specificity was demonstrated by CRISPR-Cas9 mediated knockout of target protein. A loss of signal was observed for target protein in Bax KO cell line compared to control cell line using Anti-Bax Monoclonal Antibody (2D2) (Product # 33-6400). {KO}



Bax Antibody (33-6400) in WB

Western blot analysis of BAX in A549 whole cell lysate (lane 1) and Daudi whole cell lysate (lane 2) using a BAX monoclonal antibody (Product # 33-6400) at a dilution of 1:100. Secondary detection was performed using an HRP-Goat anti-Mouse IgG, IgM (H+L) cross-adsorbed secondary antibody (Product # 31446) at a dilution of 1:5000. Data provided courtesy of Antibody Resource.

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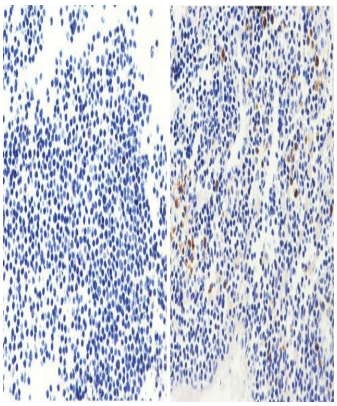
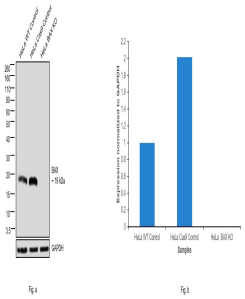


Bax Antibody (33-6400) in IHC (P)

Immunohistochemistry analysis of Bax showing staining in the cytoplasm of paraffin-embedded mouse lymph node tissue (right) compared to a negative control without primary antibody (left). To expose target proteins, antigen retrieval was performed using 10 mM sodium citrate (pH 6.0), microwaved for 8-15 min. Following antigen retrieval, tissues were blocked in 3% H2O2-methanol for 15 min at room temperature, washed with ddH2O and PBS, and then probed with Bax Monoclonal antibody (Product # 33-6400) diluted in 3% BSA-PBS at a dilution of 1:100 overnight at 4° C in a humidified chamber. Tissues were washed extensively in PBST and detection was performed using a HRP-conjugated secondary antibody followed by colorimetric detection using a DAB kit. Tissues were counterstained with hematoxylin and dehydrated with ethanol and xylene to prep for mounting.



Bax Antibody (33-6400) in WB

Knockout of BAX was achieved by CRISPR-Cas9 genome editing using LentiArray™ Lentiviral sgRNA (Product # A32042, Assay ID CRISPR612938_LV) and LentiArray Cas9 Lentivirus (Product # A32064). Western blot analysis of BAX was performed by loading 50 µg of HeLa Wild Type (Lane 1), HeLa Cas9 (Lane 2) andHeLa BAX KO (Lane 3) whole cell extracts. The samples were electrophoresed using Novex™ 16%, Tricine, 1.0 mm, Mini Protein Gel (Product # EC66952BOX). Resolved proteins were then transferred onto a nitrocellulose membrane (Product # IB23001) by iBlot® 2 Dry Blotting System (Product # IB21001). The blot was probed with Anti-Bax Monoclonal Antibody (2D2) (Product # 33-6400, 1:500 dilution) and Goat anti-Mouse IgG (H+L) Superclonal™ Recombinant Secondary Antibody, HRP (Product # A28177, 1:5,000 dilution) using the iBright FL 1000 (Product # A32752). Chemiluminescent detection was performed using Novex® ECL Chemiluminescent Substrate Reagent Kit (Product # WP20005). Loss of signal upon CRISPR mediated knockout (KO) using the LentiArray™ CRISPR product line confirms that antibody is specific to BAX.

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PubMed References For Bax Monoclonal Antibody (2D2)

11 Western Blot References

Species / Dilution	Summary
Human / 1:1000	33-6400 was used in Western Blot to show keloid progression can be promoted by long non-coding RNA homeobox HOXA11-AS. Biochemical and biophysical research communications (2021; 581: 60) **"LncRNA HOXA11-AS aggravates the keloid formation by targeting miR-148b-3p/IGFBP5 axis."** Author(s):Wang J,Shen J PubMed Article URL:http://dx.doi.org/10.1016/j.bbrc.2021.09.074
Human / Not Cited	33-6400 was used in western blot to study the contribution of APN/CD13 to the growth and survival of acute myeloid leukemia cells in vitro. FASEB journal : official publication of the Federation of American Societies for Experimental Biology (2011; 25: 2831) **"Aminopeptidase-N/CD13 is a potential proapoptotic target in human myeloid tumor cells."** Author(s):Piedfer M,Dauzonne D,Tang R,N'Guyen J,Billard C,Bauvois B PubMed Article URL:http://dx.doi.org/10.1096/fj.11-181396
Human / Not Cited	The Journal of biological chemistry (2002; 277: 16448) **"The novel triterpenoid 2-cyano-3,12-dioxooleana-1,9-dien-28-oic acid (CDDO) potently enhances apoptosis induced by tumor necrosis factor in human leukemia cells."** Author(s):Stadheim TA,Suh N,Ganju N,Sporn MB,Eastman A PubMed Article URL:http://dx.doi.org/10.1074/jbc.M108974200
Human / 1:500	33-6400 was used in Western Blotting to propose a biological in vitro assessment of betulinic acid (BA)-functionalized GNP. Pharmaceuticals (Basel, Switzerland) (2022; 15:) **"The Anti-Melanoma Effect of Betulinic Acid Functionalized Gold Nanoparticles: A Mechanistic In Vitro Approach."** Author(s):Ghiulai R,Mioc A,Racoviceanu R,Mioc M,Milan A,Prodea A,Semenescu A,Dehelean C,Barbu Tudoran L,Avram ¿,Trandafirescu C,¿oica C PubMed Article URL:http://dx.doi.org/10.3390/ph15111362
Human / Not Cited	The Journal of biological chemistry (2003; 278: 18022) **"Glucocorticoids inhibit apoptosis during fibrosarcoma development by transcriptionally activating Bcl-xL."** Author(s):Gascoyne DM,Kypta RM,Vivanco Md PubMed Article URL:http://dx.doi.org/10.1074/jbc.M301812200
Human / Not Cited	33-6400 was used in Western Blotting to suggest that our data on the mechanisms of action and the created nanocomplex are promising as a platform for the creation of highly selective and effective drugs with targeted delivery to tumors. International journal of molecular sciences (2022; 23:) **"Comparative Analysis of the Cytotoxic Effect of a Complex of Selenium Nanoparticles Doped with Sorafenib, "Naked" Selenium Nanoparticles, and Sorafenib on Human Hepatocyte Carcinoma HepG2 Cells."** Author(s):Varlamova EG,Goltyaev MV,Simakin AV,Gudkov SV,Turovsky EA PubMed Article URL:http://dx.doi.org/10.3390/ijms23126641
Rat / 1:1000	33-6400 was used in Western Blotting to suggest that treatment with NOR potentiated the nephroprotective effects of propofol in rats with I/R-induced renal injury by ameliorating oxidative stress and apoptosis pathway. Journal of biochemical and molecular toxicology (2022; 36:) **"The protective effects of propofol against renal ischemia-reperfusion injury are potentiated by norisoboldine treatment via inhibition of oxidative stress pathways."** Author(s):Xing D,Li Q,Lin G,Lin H,Kang W,Zhang M,Ding R,Li N PubMed Article URL:http://dx.doi.org/10.1002/jbt.22937
Human / 1:1000	33-6400 was used in Western Blotting to show that the ELFN1-AS1/miR-4270/AURKB axis facilitates colon cancer (CC) tumorigenesis; therefore, targeting this axis might be a promising intervention in preventing CC progression. Open medicine (Warsaw, Poland) (2022; 17: 1999) **"lncRNA ELFN1-AS1 enhances the progression of colon cancer by targeting miR-4270 to upregulate AURKB."** Author(s):Peng S,Luo Y,Chen L,Dai K,Wang Q PubMed Article URL:http://dx.doi.org/10.1515/med-2022-0582
Human / Not Cited	33-6400 was used in Western Blotting and ELISA to study the apoptotic efficacy of multifaceted biosynthesised silver nanoparticles on human adenocarcinoma cells. Scientific reports (2018; 8:) **"Apoptotic efficacy of multifaceted biosynthesized silver nanoparticles on human adenocarcinoma cells."** Author(s):Plackal Adimuriyil George B,Kumar N,Abrahamse H,Ray SS PubMed Article URL:http://dx.doi.org/10.1038/s41598-018-32480-5

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	33-6400 was used in Western Blotting to evaluate the effect of melittin on non-small cell lung cancer.
Human / 1:100	OncoTargets and therapy (2022; 11: 4511) **"Melittin induces NSCLC apoptosis via inhibition of miR-183."** Author(s):Gao D,Zhang J,Bai L,Li F,Dong Y,Li Q PubMed Article URL:http://dx.doi.org/10.2147/OTT.S169806
Human / 1:1000	33-6400 was used in Western Blot to examine the role of myeloblastosis viral oncogene homolog-like 2 (MYBL2) in gastric cancer progression and investigate the underlying mechanisms.
	Advances in clinical and experimental medicine : official organ Wroclaw Medical University (2021; 30: 957) **"MYBL2 in synergy with CDC20 promotes the proliferation and inhibits apoptosis of gastric cancer cells."** Author(s):Deng Q,Wu L,Li Y,Zou L PubMed Article URL:http://dx.doi.org/10.17219/acem/135938

3 Immunohistochemistry References

Species / Dilution	Summary
Human / Not Cited	Journal of clinical oncology : official journal of the American Society of Clinical Oncology (2003; 21: 2247) **"Repeated intravesical instillations of an adenoviral vector in patients with locally advanced bladder cancer: a phase I study of p53 gene therapy."** Author(s):Pagliaro LC,Keyhani A,Williams D,Woods D,Liu B,Perrotte P,Slaton JW,Merritt JA,Grossman HB,Dinney CP PubMed Article URL:http://dx.doi.org/10.1200/JCO.2003.09.138
Bacteria / Not Cited	Clinical cancer research : an official journal of the American Association for Cancer Research (2002; 8: 488) **"BAX expression in Hodgkin and Reed-Sternberg cells of Hodgkin's disease: correlation with clinical outcome."** Author(s):Rassidakis GZ,Medeiros LJ,McDonnell TJ,Viviani S,Bonfante V,Nadali G,Vassilakopoulos TP,Giardini R,Chilosi M,Kittas C,Gianni AM,Bonadonna G,Pizzolo G,Pangalis GA,Cabanillas F,Sarris AH PubMed Article URL:http://www.ncbi.nlm.nih.gov/pubmed/11839668
Not Applicable / 1:100	33-6400 was used in immunohistochemistry to report on a case of pilomatrix carcinoma with lymph node metastases
	Journal of cutaneous pathology (2004; 31: 330) **"Pilomatrix carcinoma with lymph node metastases."** Author(s):Bassarova A,Nesland JM,Sedloev T,Danielsen H,Christova S PubMed Article URL:http://dx.doi.org/10.1111/j.0303-6987.2004.0178.x

1 Immunocytochemistry References

Species / Dilution	Summary
Not Applicable / Not Cited	33-6400 was used in immunocytochemistry to research tBID receptors served by MTCH2 or Cardiolipin during apoptosis
	Cell death and differentiation (2016; 23: 1165) **"Cardiolipin or MTCH2 can serve as tBID receptors during apoptosis."** Author(s):Raemy E,Montessuit S,Pierredon S,van Kampen AH,Vaz FM,Martinou JC PubMed Article URL:http://dx.doi.org/10.1038/cdd.2015.166

1 ELISA References

Species / Dilution	Summary
Human / Not Cited	33-6400 was used in Western Blotting and ELISA to study the apoptotic efficacy of multifaceted biosynthesised silver nanoparticles on human adenocarcinoma cells.
	Scientific reports (2018; 8:) **"Apoptotic efficacy of multifaceted biosynthesized silver nanoparticles on human adenocarcinoma cells."** Author(s):Plackal Adimuriyil George B,Kumar N,Abrahamse H,Ray SS PubMed Article URL:http://dx.doi.org/10.1038/s41598-018-32480-5

4 Immunohistochemistry (Paraffin) References

Species / Dilution	Summary
Human / 1:200	33-6400 was used in Immunohistochemistry-immunofluorescence to evaluate the associations of selected biomarkers with biochemical or clinical disease failure in men with T1-T3 prostate cancer on a randomised hypofractionation trial.
	Journal of the National Cancer Institute (2017; 109: 1) **"Prospective Validation of Diagnostic Tumor Biomarkers in Men Treated With Radiotherapy for Prostate Cancer."** Author(s):Pollack A,Kwon D,Walker G,Khor LY,Horwitz EM,Buyyounouski MK,Stoyanova R PubMed Article URL:http://dx.doi.org/10.1093/jnci/djw232
Not Applicable / 1:50	33-6400 was used in immunohistochemistry - paraffin section to examine apoptosis and cell proliferation in synovial sarcoma
	European journal of cancer prevention : the official journal of the European Cancer Prevention Organisation (ECP) (2006; 15: 258) **"Extent, relationship and prognostic significance of apoptosis and cell proliferation in synovial sarcoma."** Author(s):Sun B,Sun Y,Wang J,Zhao X,Wang X,Hao X PubMed Article URL:http://dx.doi.org/10.1097/01.cej.0000198896.02185.68

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	33-6400 was used in immunohistochemistry - paraffin section to assess the expression of the Bcl-2 family of proteins in classical Hodgkin's lymphoma and correlate their expression with proliferation, apoptosis, and the presence of Epstein-Barr virus
Not Applicable / 1:50	Histopathology (2004; 44: 257) **"Expression of Bcl-2 family members and presence of Epstein-Barr virus in the regulation of cell growth and death in classical Hodgkin's lymphoma."** Author(s):Kim LH,Nadarajah VS,Peh SC,Poppema S PubMed Article URL:http://dx.doi.org/10.1111/j.0309-0167.2004.01829.x
	33-6400 was used in immunohistochemistry - paraffin section to observe the structural characteristics of cell death in the myocardium following transmyocardial revascularization
Not Applicable / 1:50	Journal of molecular histology (2005; 36: 275) **"Cellular destruction following transmyocardial laser revascularization (TMR)."** Author(s):Cherian SM,Bobryshev YV,Tran D,Sivaraman A,Lord RS,Cherian KM PubMed Article URL:http://dx.doi.org/10.1007/s10735-005-5343-7

5 Miscellaneous PubMed References

Species / Dilution	Summary
	33-6400 was used in immunohistochemistry to study the role of various bcl-2 family molecules in the regulation of apoptosis and the progression of urothelial cancer.
Human / 1:150	European urology (2002; 41: 274) **"Differential expression of bcl-2 family proteins in bladder carcinomas. Relationship with apoptotic rate and survival."** Author(s):Korkolopoulou P,Lazaris ACh,Konstantinidou AE,Kavantzas N,Patsouris E,Christodoulou P,Thomas-Tsagli E,Davaris P PubMed Article URL:http://dx.doi.org/10.1016/s0302-2838(02)00003-9
	33-6400 was used in western blot to explore the effects and mechanisms of the novel flavone 3,3'-diamino-4'-methoxyflavone on acute myeloid leukemia dysfunction.
Human / Not Cited	Biochimica et biophysica acta (2013; 1833: 1316) **"p70S6 kinase is a target of the novel proteasome inhibitor 3,3'-diamino-4'-methoxyflavone during apoptosis in human myeloid tumor cells."** Author(s):Piedfer M,Bouchet S,Tang R,Billard C,Dauzonne D,Bauvois B PubMed Article URL:http://dx.doi.org/10.1016/j.bbamcr.2013.02.016
	33-6400 was used in immunohistochemistry to investigate anti-apoptotic proteins in patients with peripheral T-cell lymphomas.
Human / 1:40	The Journal of pathology (2003; 200: 240) **"BCL-2 family proteins in peripheral T-cell lymphomas: correlation with tumour apoptosis and proliferation."** Author(s):Rassidakis GZ,Jones D,Lai R,Ramalingam P,Sarris AH,McDonnell TJ,Medeiros LJ PubMed Article URL:http://dx.doi.org/10.1002/path.1346
	33-6400 was used in western blot to report that LPA and S1P-mediated protection from apoptosis involves Edg GPCRs.
Human / Not Cited	Journal of immunology (Baltimore, Md. : 1950) (1999; 162: 2049) **"Lysophosphatidic acid and sphingosine 1-phosphate protection of T cells from apoptosis in association with suppression of Bax."** Author(s):Goetzl EJ,Kong Y,Mei B PubMed Article URL:http://www.ncbi.nlm.nih.gov/pubmed/9973477
	33-6400 was used in immunohistochemistry (paraffin) to assess fas and fasL as predictive indicators for chemotherapy response in advanced breast cancer.
Human / 1:100	Clinical cancer research : an official journal of the American Association for Cancer Research (2002; 8: 811) **"The predictive value of bcl-2, bax, bcl-xL, bag-1, fas, and fasL for chemotherapy response in advanced breast cancer."** Author(s):Sjöström J,Blomqvist C,von Boguslawski K,Bengtsson NO,Mjaaland I,Malmström P,Ostenstadt B,Wist E,Valvere V,Takayama S,Reed JC,Saksela E PubMed Article URL:http://www.ncbi.nlm.nih.gov/pubmed/11895913

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