10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Bok BH3 Domain Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1310a

Product Information

Application	WB, IHC-P, E
Primary Accession	Q9UMX3
Other Accession	Q6KAQ7, Q8IYH5, Q5SSH7, O43149, A5H447, Q62523, Q15942, Q04584, G5EEM5, Q9GT24, A0JMZ3, Q5TYQ1, P21541, Q3UFS0, Q9C0D3, A2BFL2, Q6WRX3, Q8C8V1, Q2QGD7, P98169, P98168, A2CE44, Q8VIL3, Q9CQU5, O95229, Q2TBH8, Q6IRM9, Q8R060, Q9H900, Q9VA00, A5WWB6, Q95XP9
Reactivity	Human, Rat, Mouse
Predicted	Drosophila, C.Elegans, Bovine, Chicken, Human, Monkey, Mouse, Rat, Rabbit, Xenopus, Zebrafish, Yeast, Pig, Vaccinia Virus, Hamster, Neisseria Gonorrhoeae, SARS
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	23280
Antigen Region	60-90

Additional Information

Gene ID	666
Other Names	Bcl-2-related ovarian killer protein, hBOK, Bcl-2-like protein 9, Bcl2-L-9, BOK, BCL2L9
Dilution	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	Bok BH3 Domain Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	BOK (HGNC:1087)
Synonyms	BCL2L9

Function	[Isoform 1]: Apoptosis regulator that functions through different apoptotic signaling pathways (PubMed:15102863, PubMed:20673843, PubMed:27076518). Plays a roles as pro-apoptotic protein that positively regulates intrinsic apoptotic process in a BAX- and BAK1-dependent manner or in a BAX- and BAK1-independent manner (PubMed:15102863, PubMed:27076518). In response to endoplasmic reticulum stress promotes mitochondrial apoptosis through downstream BAX/BAK1 activation and positive regulation of PERK-mediated unfolded protein response (By similarity). Activates apoptosis independently of heterodimerization with survival-promoting BCL2 and BCL2L1 through induction of mitochondrial outer membrane permeabilization, in a BAX- and BAK1-independent manner, in response to inhibition of ERAD- proteasome degradation system, resulting in cytochrome c release (PubMed:27076518). In response to DNA damage, mediates intrinsic apoptotic process in a TP53-dependent manner (PubMed:15102863). Plays a role in granulosa cell apoptosis by CASP3 activation (PubMed:20673843). Plays a roles as anti-apoptotic protein during neuronal apoptotic process, by negatively regulating poly ADP-ribose polymerase-dependent cell death through regulation of neuronal calcium homeostasis and mitochondrial bioenergetics in response to NMDA excitation (By similarity). In addition to its role in apoptosis, may regulate trophoblast cell proliferation during the early stages of placental development, by acting on G1/S transition through regulation of CCNE1 expression (PubMed:19942931). May also play a role as an inducer of autophagy by disrupting interaction between MCL1 and BECN1 (PubMed:24113155).
Cellular Location	[Isoform 1]: Mitochondrion membrane {ECO:0000250|UniProtKB:O35425}; Single-pass membrane protein {ECO:0000250|UniProtKB:O35425}. Endoplasmic reticulum membrane; Single-pass membrane protein {ECO:0000250|UniProtKB:O35425}. Mitochondrion inner membrane. Cytoplasm. Nucleus. Mitochondrion. Endoplasmic reticulum. Mitochondrion outer membrane. Early endosome membrane {ECO:0000250|UniProtKB:O35425}. Recycling endosome membrane {ECO:0000250|UniProtKB:O35425}. Nucleus outer membrane {ECO:0000250|UniProtKB:O35425}. Golgi apparatus, cis-Golgi network membrane {ECO:0000250|UniProtKB:O35425}. Golgi apparatus, trans-Golgi network membrane {ECO:0000250|UniProtKB:O35425}. Membrane. Note=Nuclear and cytoplasmic compartments in the early stages of apoptosis and during apoptosis it associates with mitochondria (PubMed:19942931). In healthy cells, associates loosely with the membrane in a hit-and-run mode. The insertion and accumulation on membranes is enhanced through the activity of death signals, resulting in the integration of the membrane-bound protein into the membrane (PubMed:15868100). The transmembrane domain controls subcellular localization; constitutes a tail-anchor. Localizes in early and late endosome upon blocking of apoptosis. Must localize to the mitochondria to induce mitochondrial outer membrane permeabilization and apoptosis (By similarity) {ECO:0000250|UniProtKB:O35425, ECO:0000269|PubMed:15868100, ECO:0000269|PubMed:19942931}
Tissue Location	Expressed mainly in oocytes; weak expression in granulosa cells of the developing follicles. In adult human ovaries, expressed in granulosa cells at all follicular stages, but expression in primordial/primary follicles granulosa cell is stronger than in secondary and antral follicles.

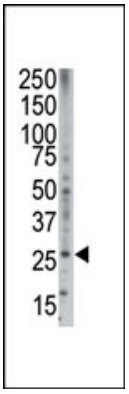
Background

Bok belongs to the BCL-2 protein family. BCL-2 family members form hetero- or homodimers and act as anti- and pro-apoptotic regulators that are involved in a wide variety of cellular activities. This protein contains all four BCL-2 like domains (BH1, 2, 3 and 4) and is a pro-apoptotic BCL-2 protein identified in the ovary.

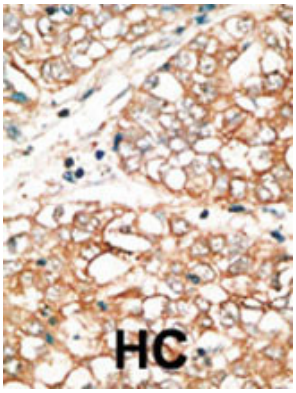
References

Hsu, S.Y., et al., Proc. Natl. Acad. Sci. U.S.A. 94(23):12401-12406 (1997). Zhang, H., et al., FEBS Lett. 480 (2-3), 311-313 (2000).

Images



Western blot analysis of anti-Bok BH3 domain Pab (Cat. #AP1310a) in HL-60 cell lysate. Bok BH3 domain (arrow) was detected using purified Pab. Secondary HRP-anti-rabbit was used for signal visualization with chemiluminescence.



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

- Stress via p53 pathway causes apoptosis by mitochondrial Noxa upregulation in doxorubicin-treated neuroblastoma cells.
- Membrane translocation and oligomerization of hBok are triggered in response to apoptotic stimuli and Bnip3.
- BOK and NOXA are essential mediators of p53-dependent apoptosis.

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