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BOK Antibody

Catalog # ASC10257

Product Information

Application	E, IHC-P
Primary Accession	Q9UMX3
Other Accession	AAH06203, 14210524
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	23280
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	BOK antibody can be used for detection of BOK by immunohistochemistry at 5 □g/mL.

Additional Information

Gene ID	666
Other Names	BOK Antibody: BOKL, BCL2L9, Bcl-2-related ovarian killer protein, Bcl-2-like protein 9, hBOK, BCL2-related ovarian killer
Target/Specificity	BOK; At least three isoforms of BOK are known to exist; this antibody will not detect the smallest isoform. BOK antibody is predicted to not cross-react with other Bcl-2 protein family members
Reconstitution & Storage	BOK antibody can be stored at 4℃ for three months and -20℃, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	BOK 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.

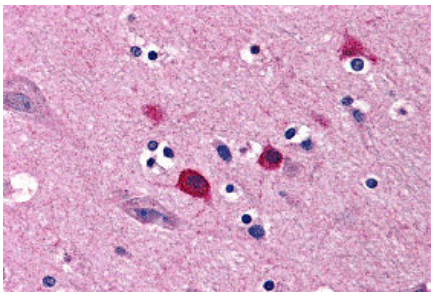
Background

BOK Antibody: Apoptosis plays a major role in normal organism development, tissue homeostasis, and removal of damaged cells. Disruption of this process has been implicated in a variety of diseases such as cancer. The Bcl-2 family of proteins is comprised of critical regulators of apoptosis that can be divided into two classes: those that inhibit apoptosis and those that promote cell death. BOK, a pro-apoptotic Bcl-2 family member, was initially identified in the ovary, and was found to interact with other Bcl-2 family members such as Mcl-1 and Bfl-1. BOK expression is high during early placental development, suggesting that it may also play a role in regulating trophoblast cell proliferation.

References

Lockshin RA, Osborne B, and Zakeri Z. Cell death in the third millennium. Cell Death Differ. 2000; 7:2-7.
Cory S, Huang DCS, and Adams JM. The Bcl-2 family: roles in cell survival and oncogenesis. Oncogene 2003; 22:8590-607.
Hsu SY, Kaipia A, McGee E, et al. bok is a pro-apoptotic Bcl-2 protein with restricted expression in reproductive tissues and heterodimerizes with selective anti-apoptotic Bcl-2 family members. Proc. Natl. Acad. Sci. USA 1997; 94:12401-6
Soleymanlou N, Wu Y, Wang JX, et al. A novel Mtd splice isoform is responsible for trophoblast cell death in pre-eclampsia. Cell Death Differ. 2005; 12:441-52.

Images



Immunohistochemistry of BOK in human brain tissue with BOK antibody at 5 µg/mL.

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