

Bok (D7V2N) Rabbit mAb

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W	H	Endogenous	22	Rabbit IgG	#Q9UMX3	666

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, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Bok (D7V2N) Rabbit mAb recognizes endogenous levels of total Bok protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Val88 of human Bok protein.

Background

The Bcl-2 family consists of a number of evolutionarily conserved proteins containing Bcl-2 homology domains (BH) that regulate apoptosis through control of mitochondrial membrane permeability and release of cytochrome c (1-3). Four BH domains have been identified (BH1-4) that mediate protein interactions. The family can be separated into three groups based upon function and sequence homology: pro-survival members include Bcl-2, Bcl-xL, Mcl-1, A1 and Bcl-w; pro-apoptotic proteins include Bax, Bak and Bok; and "BH3 only" proteins Bad, Bik, Bid, Puma, Bim, Bmf, Noxa and Hrk. Interactions between death-promoting and death-suppressing Bcl-2 family members has led to a rheostat model in which the ratio of pro-apoptotic and anti-apoptotic proteins controls cell fate (4). Thus, pro-survival members exert their behavior by binding to and antagonizing death-promoting members. In general, the "BH3-only members" can bind to and antagonize the pro-survival proteins leading to increased apoptosis (5). While some redundancy of this system likely exists, tissue specificity, transcriptional and post-translational regulation of many of these family members can account for distinct physiological roles.

Like other family members Bok was identified based on sequence homology and interaction with select anti-apoptotic family members (6,7). Although Bok was originally described to be predominantly expressed in reproductive tissues such as ovary, testis and uterus (6), subsequent studies have found selective expression of Bok in a number of adult and development tissues (7). The *Bok* gene is frequently mutated in human tumors, suggesting a tumor suppressor activity (8). While Bok is structurally similar to the pro-apoptotic proteins Bax and Bak, it appears to be functionally distinct. Loss of Bok in mice did not have an overt effects phenotype (9). However, additional studies have shown that Bok plays a distinct role in apoptosis in response to endoplasmic reticulum stress (10,11). The stability of Bok is regulated by the endoplasmic-reticulum-associated degradation (ERAD) pathway (11). Bok expression is induced by proteasome inhibitors and triggers apoptosis by these agents (11).

Background References

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3. Sharpe, J.C. et al. (2004) *Biochim Biophys Acta* 1644, 107-13.
4. Korsmeyer, S.J. et al. (1993) *Semin Cancer Biol* 4, 327-32.
5. Bouillet, P. and Strasser, A. (2002) *J Cell Sci* 115, 1567-74.
6. Hsu, S.Y. et al. (1997) *Proc Natl Acad Sci U S A* 94, 12401-6.
7. Inohara, N. et al. (1998) *J Biol Chem* 273, 8705-10.
8. Beroukhi, R. et al. (2010) *Nature* 463, 899-905.
9. Ke, F. et al. (2012) *Cell Death Differ* 19, 915-25.
10. Carpio, M.A. et al. (2015) *Proc Natl Acad Sci U S A* 112, 7201-6.
11. Llambi, F. et al. (2016) *Cell* 165, 421-33.

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

W: Western Blotting

Cross-Reactivity Key

H: Human

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