Revision 1

Phospho-Bim (Ser55) Antibody

#4550 Store at -20C

Cell Signaling TECHNOLOGY®

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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	M	Endogenous	26	Rabbit	#O54918	12125

Product Usage Information

Application	Dilution
Western Blotting	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

Phospho-Bim (Ser55) Antibody detects endogenous levels of mouse Bim protein only when phosphorylated at Ser55. This site is conserved in rat (Ser55) and human (Ser59) but phosphorylation has not been detected in these species.

Species predicted to react based on 100% sequence homology

Human, Rat

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Ser55 of mouse Bim. Antibodies were purified by protein A and peptide affinity chromatography.

Background

Bim/Bod is a pro-apoptotic protein belonging to the BH3-only group of Bcl-2 family members including Bad, Bid, Bik, Hrk, and Noxa that contain a BH3 domain but lack other conserved BH1 or BH2 domains (1,2). Bim induces apoptosis by binding to and antagonizing anti-apoptotic members of the Bcl-2 family. Interactions have been observed with Bcl-2, Bcl-xL, Mcl-1, Bcl-w, Bfl-1, and BHRF-1 (1,2). Bim functions in regulating apoptosis associated with thymocyte negative selection and following growth factor withdrawal, during which Bim expression is elevated (3-6). Three major isoforms of Bim are generated by alternative splicing: Bim_{EL}, Bim_{L}, and Bim_{S} (1). The shortest form, Bim_{S}, is the most cytotoxic and is generally only transiently expressed during apoptosis. The Bim_{EL} and Bim_{L} isoforms may be sequestered to the dynein motor complex through an interaction with the dynein light chain and released from this complex during apoptosis (7). Apoptotic activity of these longer isoforms may be regulated by phosphorylation (8,9). Environmental stress triggers Bim phosphorylation by JNK and results in its dissociation from the dynein complex and increased apoptotic activity.
Survival factor induced ERK activation leads to phosphorylation of mouse Bim at Ser55, which inhibits its pro-apoptotic activity and association with Bax (10).

Background References

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2. Hsu, S.Y. et al. (1998) *Mol Endocrinol* 12, 1432-40.
3. Bouillet, P. et al. (2002) *Nature* 415, 922-6.
4. Whitfield, J. et al. (2001) *Neuron* 29, 629-43.
5. Dijkers, P.F. et al. (2000) *Curr Biol* 10, 1201-4.
6. Ley, R. et al. (2003) *J Biol Chem* 278, 18811-6.
7. Puthalakath, H. et al. (1999) *Mol Cell* 3, 287-96.
8. Lei, K. and Davis, R.J. (2003) *Proc Natl Acad Sci U S A* 100, 2432-7.
9. Putcha, G.V. et al. (2003) *Neuron* 38, 899-914.
10. Harada, H. et al. (2004) *Proc Natl Acad Sci USA* 101, 15313-15317.

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

M: Mouse

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