

# p-Bad (Ser 136): sc-12969

## BACKGROUND

Phosphorylation of Bad, a pro-apoptotic member of the Bcl-2 protein family, on either Serine 112 or Serine 136 is thought to be necessary and sufficient for growth factors to promote cell survival. Serine 155 is a major site of phosphorylation by protein kinase A (PKA) and serum-induced kinases. Serine 155 phosphorylation requires the prior phosphorylation of Serine 136, which recruits 14-3-3 proteins that then function to increase the accessibility of Serine 155 to survival-promoting kinases. Like Serine 112 and Serine 136, phosphorylation of Serine 155 inhibits the pro-apoptotic function of Bad. Serine 155 phosphorylation disrupts the binding of Bad to pro-survival Bcl-2 proteins and thereby promotes cell survival.

## REFERENCES

1. Salomoni, P., et al. 2000. Versatility of Bcr/Abl-expressing leukemic cells in circumventing proapoptotic Bad effects. *Blood* 96: 676-684.
2. Lawson, A.E., et al. 2000. Phosphatase inhibition promotes antiapoptotic but not proliferative signaling pathways in erythropoietin-dependent HCD57 cells. *Blood* 96: 2084-2092.
3. Virdee, K., et al. 2000. Phosphorylation of the pro-apoptotic protein Bad on Serine 155, a novel site, contributes to cell survival. *Curr. Biol.* 10: 1151-1154.
4. Bertolotto, C., et al. 2000. Protein kinase C  $\theta$  and  $\epsilon$  promote T-cell survival by a Rsk-dependent phosphorylation and inactivation of BAD. *J. Biol. Chem.* 275: 37246-37250.
5. Datta, S.R., et al. 2000. 14-3-3 proteins and survival kinases cooperate to inactivate Bad by BH3 domain phosphorylation. *Mol. Cell.* 6: 41-51.
6. Malissein, E., et al. 2006. Activation of Bad trafficking is involved in the Bcr-mediated apoptosis of immature B cells. *Apoptosis* 11:1003-1012.
7. Kim, H., et al. 2006. Hierarchical regulation of mitochondrion-dependent apoptosis by Bcl-2 subfamilies. *Nat. Cell. Biol.* 8:1348-58.
8. Kimura, S., et al. 2006. Bim and Bad mediate imatinib-induced killing of Bcr/Abl<sup>+</sup> leukemic cells, and resistance due to their loss is overcome by a BH3 mimetic. *Proc. Natl. Acad. Sci. USA* 103: 14907-14912.

## CHROMOSOMAL LOCATION

Genetic locus: BAD (human) mapping to 11q13.1; Bad (mouse) mapping to 19 A.

## SOURCE

p-Bad (Ser 136) is available as either goat (sc-12969) or rabbit (sc-12969-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing phosphorylated Ser 136 of Bad of mouse origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-12969 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

p-Bad (Ser 136)-R is recommended for detection of Ser 136 phosphorylated Bad of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Bad siRNA (h): sc-29778, Bad siRNA (m): sc-29779, Bad shRNA Plasmid (h): sc-29778-SH, Bad shRNA Plasmid (m): sc-29779-SH, Bad shRNA (h) Lentiviral Particles: sc-29778-V and Bad shRNA (m) Lentiviral Particles: sc-29779-V.

Molecular Weight of p-Bad (Ser 136): 25 kDa.

Positive Controls: Bad (h3): 293T Lysate: sc-170552 or calyculin-treated HeLa whole cell lysate.

## SELECT PRODUCT CITATIONS

1. Chong, Z.Z., et al. 2003. Erythropoietin fosters both intrinsic and extrinsic neuronal protection through modulation of microglia, Akt1, Bad, and caspase-mediated pathways. *Br. J. Pharmacol.* 138: 1107-1118.
2. Petrangolini, G., et al. 2006. Apoptotic cell death induction and angiogenesis inhibition in large established medullary thyroid carcinoma xenografts by Ret inhibitor RPI-1. *Biochem. Pharmacol.* 72: 405-414.
3. Xiao, D., et al. 2006. Diallyl trisulfide, a constituent of processed garlic, inactivates Akt to trigger mitochondrial translocation of BAD and caspase-mediated apoptosis in human prostate cancer cells. *Carcinogenesis* 27: 533-540.
4. George, R.J., et al. 2007. EP4 mediates PGE2 dependent cell survival through the PI 3-kinase/Akt pathway. *Prostaglandins Other Lipid Mediat.* 83: 112-120.
5. Zhang, Y.W., et al. 2010. Eriocalyxin B induces apoptosis in lymphoma cells through multiple cellular signaling pathways. *Exp. Hematol.* 38: 191-201.

## STORAGE

Store at 4° C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.