3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Monoclonal Anti-Bad, clone 64103
produced in rat, purified immunoglobulin

Catalog Number **B0559**

Product Description

Monoclonal Anti-Mouse Bad (rat IgG2A isotype) is derived from a mouse hybridoma produced by the fusion of mouse myeloma cells and splenocytes from a rat immunized with the N-terminal portion of recombinant mouse Bad. The antibody is purified from the IgG fraction of tissue culture supernatant using Protein G chromatography.

Monoclonal Anti-Mouse Bad recognizes mouse Bad by immunoblotting. It does not detect human Bad. The antibody will also detect a 32 kDa band that co-migrates with recombinant Bad on immunoblots.

In multi-cell organisms the regulation of cell survival is crucial to normal physiology. This mechanism may be linked to excessive cell death or survival, which may play a role in a number of disease processes.[1] The ratio of anti-(Bcl-2, Bcl-X_L, Mcl-1, and A1) to pro-(Bax, Bak, Bcl-Xs, and Bad) apoptotic molecules dictates whether a cell will respond to a proximal apoptotic stimulus.[2, 3]

Bad (Bcl-2-antagonist of cell death), initially identified by its interaction with Bcl-2 and Bcl-X_L, is a distant Bcl-2 family member. Bad bears only the most universally conserved amino acids within BH1 and BH2 domains, and lacks the typical hydrophobic C-terminal signal-anchor. The presence of Bad counters the anti-apoptotic effects of Bcl-X_L or Bcl-2.[4] Bad interconnects signal transduction pathways from extracellular survival factors with the Bcl-2 intracellular checkpoint for cell death.

Bad is phosphorylated on two serine residues embedded in canonical 14-3-3 binding sites in response to IL-3, a survival factor.[2] Phosphorylated Bad does not bind Bcl-X_L and is sequestered in the cytosol bound to 14-3-3, a specific phosphoserine-binding protein. The growth factors that promote cell survival activate the threonine kinase Akt which phosphorylates Bad causing suppression of apoptosis.[3] Substitution of the serine phosphorylation sites indicated that phosphorylation of Bad inactivated the molecule to promote cell survival.[5]

Akt phosphorylates Bad *in vivo* and *in vitro* and blocks the Bad-induced death of primary neurons in a site specific manner.[1]

Reagent

Supplied as a lyophilized powder from a 0.2 μm filtered solution of PBS, pH 7.4, with 5% trehalose.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Reconstitute to desired concentration with PBS containing 0.02% sodium azide.

Storage/Stability

Prior to reconstitution, store at −20 °C. After reconstitution, freeze in working aliquots. Avoid repeated freezing and thawing. Do not store in frost-free freezer.

Product Profile

Immunoblotting: a working antibody concentration of approximately 1 μg/ml is recommended using extracts from 2 x 10^6 mouse cytotoxic T cell line (CTLL2) or L929 fibroblast cells in an enhanced chemiluminescent (ECL) assay.

Note: In order to obtain the best results in various techniques and preparations, we recommend determining optimal working dilutions by titration.

References

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2. Farrow, S. N., and Brown, R., Curr. Opin. Genet. Dev., **6**, 45 (1996).
3. Oltvai, Z. N., et al., Cell, **74**, 609 (1993).
4. Yang, E., et al., Cell, **80**, 285 (1995).
5. Zha, J., *et a*l., Cell, **87**, 619 (1996).

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