

# Bad Control Proteins

✓ 100 µl  
(10 Western mini-blot)

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This product is for *in vitro* research use only and is not intended for use in humans or animals.  
This product is not intended for use as a therapeutic or in diagnostic procedures.

**Background:** Bad is a proapoptotic member of the Bcl-2 family that promotes cell death by displacing Bax from binding to Bcl-2 and Bcl-xL (1,2). Survival factors such as IL-3 inhibit the apoptotic activity of Bad by activating intracellular signaling pathways resulting in the phosphorylation of Bad at Ser112 and Ser136 (2). Phosphorylation at these sites prevents the association between Bad and Bcl-2 and Bcl-xL by promoting the binding of Bad to 14-3-3 protein (2). Akt promotes cell survival via its ability to phosphorylate Bad at Ser136 (3,4). Bad is phosphorylated at Ser112 both *in vivo* and *in vitro* by p90RSK (5,6) and mitochondria-anchored PKA (7). Phosphorylation of Ser155 in the BH3 domain by PKA plays a critical role in blocking the dimerization of Bad and Bcl-xL (8-10).

**Description: Nonphosphorylated Bad Control Proteins:** Nonphosphorylated Bad peptide fusion serves as a negative control. Supplied in SDS Sample Buffer.

**Phosphorylated Bad Control Proteins:** Phosphorylated Bad peptide fusion serves as a positive control. Supplied in SDS Sample Buffer.

**Molecular Weight:** 76 kDa

**Directions for Use:** As controls, we recommend using 10 µl of phosphorylated and nonphosphorylated Bad control proteins. Boil for 2 minutes prior to use.

**Background References:**

- (1) Yang, E. et al. (1995) *Cell* 80, 285-291.
- (2) Zha, J. et al. (1996) *Cell* 87, 619-628.
- (3) Datta, S.R. et al. (1997) *Cell* 91, 231-241.
- (4) Peso, L. et al. (1997) *Science* 278, 687-689.
- (5) Bonni, A. et al. (1999) *Science* 286, 1358-1362.
- (6) Tan, Y. et al. (1999) *J. Biol. Chem.* 274, 34859-34867.
- (7) Harada, H. et al. (1999) *Mol. Cell* 3, 413-422.
- (8) Tan, Y. et al. (2000) *J. Biol. Chem.* 275, 25865-25869.
- (9) Lizcano, J. et al. (2000) *Biochem. J.* 349, 547-557.
- (10) Datta, S. et al. (2000) *Mol. Cell* 6, 41-51.

**Storage:** Supplied in SDS Sample Buffer: 62.5 mM Tris-HCl (pH 6.8 at 25°C), 2% w/v SDS, 10% glycerol, 50 mM DTT, 0.01% w/v bromophenol blue or phenol red. Store at -20°C.

**Companion Products:**

PhosphoPlus® Bad (Ser112/136) Antibody Kit #9290  
Phospho-Bad (Ser112) Antibody #9291  
Bad Antibody #9292  
Phospho-Bad (Ser136) Antibody #9295  
Phospho-Bad (Ser112) (7E11) Mouse mAb #9296  
Anti-rabbit IgG, HRP-linked Antibody #7074  
Anti-mouse IgG, HRP-linked Antibody #7076  
Prestained Protein Marker, Broad Range (Premixed Format) #7720  
Biotinylated Protein Ladder #7727  
20X LumiGLO® Reagent and 20X Peroxide #7003