

# Phospho-β-Arrestin 1 (Ser412) (6-24) Mouse mAb

✓ 100 µl (10 western blots)

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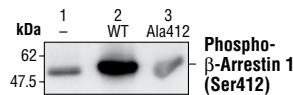
Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IP Endogenous	H, M, R, Mk	50 kDa	Mouse IgG1**

**Background:** Arrestin proteins function as negative regulators of G protein coupled receptor (GPCR) signaling. Cognate ligand binding stimulates GPCR phosphorylation, which is followed by binding of arrestin to the phosphorylated GPCR and the eventual internalization of the receptor and desensitization of GPCR signaling (1). Four distinct mammalian arrestin proteins are known. Arrestin 1 (also known as S-arrestin) and arrestin 4 (or X-arrestin) are localized to retinal rods and cones, respectively. Arrestin 2 (also known as β-arrestin 1) and arrestin 3 (or β-arrestin 2) are ubiquitously expressed and bind to most GPCRs (2). β-arrestin proteins function as adapters and scaffold proteins and play important roles in other processes, such as recruiting c-Src family proteins to GPCRs in ERK activation pathways (3,4). β-arrestins are also involved in some receptor tyrosine kinase signaling pathways (5-8). Additional evidence suggests that β-arrestin proteins translocate to the nucleus and help regulate transcription by binding transcriptional cofactors (9,10).

Erk1/2 constitutively phosphorylates β-arrestin 1 at carboxy-terminal Ser412, which promotes cytosolic localization of the scaffold protein (11). Agonist stimulation of β2-adrenergic receptors results in recruitment of β-arrestin 1 to the plasma membrane and rapid dephosphorylation of arrestin. Dephosphorylation is an essential step of β-arrestin 1-mediated receptor endocytosis, but it is not required for receptor desensitization (12).

**Specificity/Sensitivity:** Phospho-β-Arrestin 1 (Ser412) (6-24) Mouse mAb detects endogenous levels of β-arrestin 1 only when phosphorylated at serine 412. The antibody does not cross-react with beta-arrestin 2.

**Source/Purification:** Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ser412 of human β-arrestin 1.



Western blot analysis of extracts from HEK293 cells alone (-), expressing β-arrestin 1 (wt) or β-arrestin (Ser412Ala) mutant (Ala412), using Phospho-β-Arrestin 1 (Ser412) (6-24) Mouse mAb. Lanes 1 and 3 show endogenous levels of phosphorylated β-arrestin 1.



Immunoprecipitation of β-arrestin 1 from HEK293 cells using a polyclonal antibody to phospho-β-arrestin 1 (Ser412), followed by alkaline phosphatase (CIP) treatment. β-arrestin 1 was detected by Phospho-β-Arrestin 1 (Ser412) (6-24) Mouse mAb. CIP treatment abolished the β-arrestin 1 signal, indicating that the monoclonal antibody is phospho-specific.

Entrez-Gene ID #408  
Swiss-Prot Acc. #P49407

**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.

\*Species cross-reactivity is determined by western blot.

\*\*Anti-mouse secondary antibodies must be used to detect this antibody.

**Recommended Antibody Dilutions:**

Western Blotting	1:1000
Immunoprecipitation	1:50

For application specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).

Please visit [www.cellsignal.com](http://www.cellsignal.com) for a complete listing of recommended companion products.

**Background References:**

- (1) Shenoy, S.K. and Lefkowitz, R.J. (2005) *Sci STKE* 2005, cm10.
- (2) Lefkowitz, R.J. and Shenoy, S.K. (2005) *Science* 308, 512-7.
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- (4) Luttrell, L.M. et al. (1999) *Curr Opin Cell Biol* 11, 177-83.
- (5) Luttrell, L.M. and Lefkowitz, R.J. (2002) *J Cell Sci* 115, 455-65.
- (6) Waters, C. et al. (2004) *Semin Cell Dev Biol* 15, 309-23.
- (7) Lefkowitz, R.J. and Whalen, E.J. (2004) *Curr Opin Cell Biol* 16, 162-8.
- (8) Waters, C.M. et al. (2005) *Cell Signal* 17, 263-77.
- (9) Kang, J. et al. (2005) *Cell* 123, 833-47.
- (10) Ma, L. and Pei, G. (2007) *J Cell Sci* 120, 213-8.
- (11) Lin, F.T. et al. (1999) *J Biol Chem* 274, 15971-4.
- (12) Lin, F.T. et al. (1997) *J Biol Chem* 272, 31051-7.

**IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v BSA, 1X TBS, 0.1% Tween-20 at 4°C with gentle shaking, overnight.**

**Applications Key:** W—Western IP—Immunoprecipitation IHC—Immunohistochemistry ChIP—Chromatin Immunoprecipitation IF—Immunofluorescence F—Flow cytometry E-P—ELISA-Peptide  
**Species Cross-Reactivity Key:** H—human M—mouse R—rat Hm—hamster Mk—monkey Mi—mink C—chicken Dm—D. melanogaster X—Xenopus Z—zebrafish B—bovine  
 Dg—dog Pg—pig Sc—S. cerevisiae Ce—C. elegans Hr—Horse All—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.