Revision 1

Store at -20C

#2416

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

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H M R Mk	Endogenous	50	Mouse IgG1	#P49407	408

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

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.

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.

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 (X-arrestin) are localized to retinal rods and cones, respectively. Arrestin 2 (also known as β-arrestin 1) and arrestin 3 (β-arrestin 2) are ubiquitously expressed and bind to most GPCRs (2). β-arrestins function as adaptor 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-arrestins 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).

Background References

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6. Waters, C. et al. (2004) *Semin Cell Dev Biol* 15, 309-23.
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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.

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 **IP:** Immunoprecipitation

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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