Revision 1

Store at -20C

#84214

Phospho-α-Adducin (Ser12) (E5X8Y) Rabbit mAb

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP	H	Endogenous	120	Rabbit IgG	#P35611	118

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:100

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-α-Adducin (Ser12) (E5X8Y) Rabbit mAb recognizes endogenous levels of α-adducin protein only when phosphorylated at Ser12. In some cell lines, this antibody cross-reacts with a 150 kDa band of unknown origin. This band appears to be upregulated in mitosis.

Species predicted to react based on 100% sequence homology

Mouse, Rat

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ser12 of human α-adducin protein.

Background

The adducins (ADD) are cytoskeleton-associated proteins that help cap the ends of actin filaments, promote association between spectrin and actin, and participate in synapse assembly. The three closely related genes *ADD1*, *ADD2*, and *ADD3* encode the α-adducin, β-adducin, and γ-adducin proteins (1). Research studies indicate that β-adducin is found at high levels in brain and hematopoietic tissues, whereas both α-adducin and γ-adducin are ubiquitously expressed (2). Adducin protein function is regulated by phosphorylation at a number of sites. Both PKA and PKC can phosphorylate α-adducin at Ser726 and β-adducin at Ser713, which inhibits calmodulin binding and adducin activity (3-5). Additionally, PKA (but not PKC) can phosphorylate β-adducin at Ser408, Ser436, and Ser481, which negatively affects spectrin-actin interactions (3). Phosphorylation of α-adducin at Thr445 and Thr480 by Rho-kinase regulates cell motility and membrane ruffling (6). Finally, CDK-1 phosphorylation of α-adducin at Ser12 and Ser355 during mitosis leads to association of α-adducin with the mitotic spindle, suggesting that α-adducin may play a role in mitotic regulation (7). Because α-adducin plays a role in regulating renal sodium reabsorption, it is not surprising that a number of studies show a relationship between *ADD1* genetic polymorphisms and the development of hypertension (8-10).

Background References

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2. Joshi, R. et al. (1991) *J Cell Biol* 115, 665-75.
3. Matsuoka, Y. et al. (1996) *J Biol Chem* 271, 25157-66.
4. Chen, C.L. et al. (2007) *J Cell Sci* 120, 1157-67.
5. Naydenov, N.G. and Ivanov, A.I. (2010) *Mol Biol Cell* 21, 3506-17.
6. Fukata, Y. et al. (1999) *J Cell Biol* 145, 347-61.
7. Chan, P.C. et al. (2014) *J Cell Biol* 204, 19-28.
8. Kalita, J. et al. (2013) *Neurol Res* 35, 429-34.
9. Kundu, A. and Anand, A. (2013) *Cell Biochem Biophys* 65, 13-9.
10. Watanabe, Y. et al. (2010) *Hypertens Res* 33, 129-34.

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

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