Revision 1

Store at -20C

#4027

Phospho-AMPA Receptor 2 (GluA2) (Tyr876) Antibody

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	R	Endogenous	100	Rabbit	#P42262	2891

Product Usage Information

Application	Dilution
Western Blotting	1:1000

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity/Sensitivity

Phospho-AMPA Receptor 2 (GluA2) (Tyr876) Antibody detects endogenous levels of GluA2 only when phosphorylated at Tyr876. It may also detect GluA3 when phosphorylated at the conserved Tyr887. This residue is not conserved in GluA1 or GluA4.

Species predicted to react based on 100% sequence homology

Human, Mouse

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Tyr876 of human AMPA Receptor 2 (GluA2). Antibodies are purified by protein A and peptide affinity chromatography.

Background

AMPA- (α-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid), kainate-, and NMDA- (N-methyl-D-aspartate) receptors are the three main families of ionotropic glutamate-gated ion channels. AMPA receptors (AMPARs) are comprised of four subunits (GluR 1-4), which assemble as homo- or hetero-tetramers to mediate the majority of fast excitatory transmissions in the central nervous system. AMPARs are implicated in synapse formation, stabilization, and plasticity (1). In contrast to GluR 2-containing AMPARs, AMPARs that lack GluR 2 are permeable to calcium (2). Post-transcriptional modifications (alternative splicing, nuclear RNA editing) and post-translational modifications (glycosylation, phosphorylation) result in a very large number of permutations, fine-tuning the kinetic properties of AMPARs. Research studies have implicated activity changes in AMPARs in a variety of diseases including Alzheimer's, amyotrophic lateral sclerosis (ALS), stroke, and epilepsy (1).
Src family tyrosine kinases phosphorylate the GluR 2 subunit of AMPA receptors at Tyr876, which increases the interaction with GRIP1/2 but not PICK1. In addition, Tyr876 is important for AMPA- and NMDA-induced GluR 2 internalization (3).
The phosphorylation site at Tyr876 was also independently identified at Cell Signaling Technology (CST) using PhosphoScan®, CST's MS/MS platform for phosphorylation site discovery. Phosphorylation of GluR at Tyr876 was observed in extracts isolated from ischemic rat brain.

Background References

1. Palmer, C.L. et al. (2005) *Pharmacol Rev* 57, 253-77.
2. Cull-Candy, S. et al. (2006) *Curr Opin Neurobiol* 16, 288-97.
3. Hayashi, T. and Huganir, R.L. (2004) *J. Neurosci.* 24, 6152-6160.

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

Cross-Reactivity Key

R: Rat

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