Store at -20°C

#4027

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

☑ Small 100 µl
(10 western blots)

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not For Use In Diagnostic Procedures.

Entrez-Gene ID #2891
Swiss-Prot Acc. #P42262

Applications	Species Cross-Reactivity*	Molecular Wt.	Source
W Endogenous	R, (M, H)	100 kDa	Rabbit**

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.*

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

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

Recommended Antibody Dilutions:
Western blotting 1:1000

For application specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended companion products.

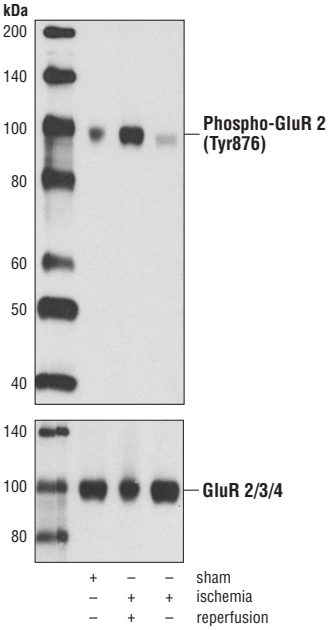
Background: AMPA- (α-amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid), kainite- and NMDA- (N-methyl-D-aspartate) receptors are the three main families of ionotropic glutamate-gated ion channels. AMPA receptors (AMPARs) are comprised of four subunits (GluR 1-4), which assemble as homo- or hetero-tetramers and mediate the majority of fast excitatory transmissions in the CNS. AMPARs are implicated in synapse formation, stabilization and plasticity (1). AMPARs that lack GluR 2 are permeable to calcium, in contrast to GluR 2 containing AMPARs (2). Post-transcriptional modifications (alternative splicing and nuclear RNA editing) and post-translational modifications (glycosylation, phosphorylation) result in a very large number of permutations, fine-tuning the kinetic properties of AMPARs. Activity changes of AMPARs are implicated 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.

Specificity/Sensitivity: Phospho-AMPA Receptor (GluR 2) (Tyr876) Antibody detects endogenous levels of GluR 2 only when phosphorylated at Tyr876. It may also detect GluR 3 when phosphorylated at the conserved Tyr887. This residue is not conserved in GluR 1 or GluR 4.

Source/Purification: Polyclonal antibodies are produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Tyr876 of human GluR 2. Antibodies are purified by protein A and peptide affinity chromatography.



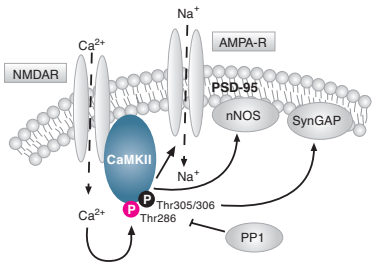
Western blot analysis of extracts from rat brain, either sham-operated, 15 min ischemia followed by 4 h reperfusion or 15 min ischemia only, using Phospho-AMPA Receptor (GluR 2) (Tyr876) Antibody (upper) or AMPA Receptor (GluR 2/3/4) Antibody #2460 (lower).

Background References:

(1) Palmer, C.L. et al. (2005) *Pharmacol. Rev.* 57, 253–277.

(2) Cull-Candy, S. et al. (2006) *Curr. Opin. Neurobiol.* 16, 288–297.

(3) Hayashi, T. and Huganir, R.L. (2004) *J. Neurosci.* 24, 6152–6160.



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.

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