Human/Mouse/Rat/Chicken/Primate/Zebrafish GluR2 Antibody

Antigen Affinity-purified Polyclonal Rabbit IgG

Catalog Number: PPS050

DESCRIPTION

Species Reactivity	Human/Mouse/Rat/Chicken/Primate/Zebrafish
Specificity	This antibody is specific for the 100 kDa GluR2 in Western blots of rat brain lysates.
Source	Polyclonal Rabbit IgG
Purification	Antigen Affinity-purified
Immunogen	GluR2
Formulation	100 µL in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg/mL BSA and 50% glycerol. See Certificate of Analysis for details.

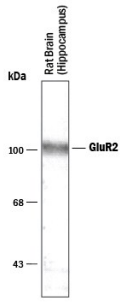
APPLICATIONS

Please Note: *Optimal dilutions should be determined by each laboratory for each application. General Protocols are available in the Technical Information section on our website.*

	Recommended Concentration	Sample
Western Blot	1:1000 dilution	See Below

DATA

Western Blot



Detection of GluR2 by Western Blot. Western blot of rat hippocampal lysate showing the specific immunolabeling of the approximately 100 kDa GluR2 protein.

PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	For long-term storage, ≤ -20° C is recommended. Product is stable at ≤ -20° C for at least 1 year.

BACKGROUND

Rat GluR2 is a 100 kDa, 862 amino acid, 4-transmembrane (TM) glycoprotein that belongs to the ionotrophic/glutamate-gated ion channel family. Due to an impenetrate TM region 2, the N-terminus is extracellular and C-terminus intracellular. GluR2 is the most widely expressed of four AMPA receptor subunits, and contributes to the formation of a functional, presumably heterotetrameric glutamate receptor. AMPA receptors mediate fast excitatory transmission on postsynaptic membranes. The GluR2 subunit in particular regulates Ca, Zn and Na entry into the cell. It is unique among AMPA subunits in that it contains an Arginine in the second transmembrane segment (amino acid 607). This accounts for its ability to regulate ion flow. Upon neuronal insult, the Arginine can be converted to Glutamine, which allows for rapid Ca^{++} influx and the initiation of apoptosis. Alternatively, GluR2 levels may drop, allowing for multiple GluR combinations that allow rapid Ca^{++} influx. GluR2 is regulated both by palmitoylation and phosphorylation. Palmitoylation at C610 results in decreased surface expression. Phosphorylation by PKC on S880, and by Src on Y876, induces internalization. Human and rat GluR2 are 99% aa identical. Rat GluR3 is 866 aa in length and shares 72% overall aa identity with GluR2, with 85% aa identity over the C-terminal 15 amino acids. It is apparently not phosphorylated. GluR3 has a Ca^{++}-permissive Glutamine at amino acid 612, the homolog to GluR2 R607. GluR3 is restricted in its expression pattern and is found on cerebellar Purkinje and Golgi Type II cells, neurons of the lateral amygdala, and cells of the basal ganglia.

References:

1. Keinanen, K. *et al.* (1990) Science **249**:556.
2. Dong, H. *et al.* (1997) Nature **386**:279.
3. Wyszynski, M. *et al.* (1999) J. Neurosci. **19**:6528.
4. Boulter, J. *et al.* (1990) Science **249**:1033.
5. Wang, J.Q. *et al.* (2005) Mol. Neurobiol. **32**:327.
6. Soundarapandian, M.M. *et al.* (2005) Mol. Neurobiol. **32**:145.

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