Technical Data Sheet

Purified Mouse Anti-Glutamate Receptor

Product Information

- **Material Number:** 556341
- **Alternate Name:** GluR2
- **Size:** 0.1 mg
- **Concentration:** 0.5 mg/ml
- **Clone:** 6C4
- **Immunogen:** GluR2 aa.175-430 trpE Recombinant Fusion
- **Isootype:** Mouse IgG2a
- **Reactivity:** QC Testing: Rat
  
  Tested in Development: Mouse
  
  Reported Reactivity: Monkey, Dog
  
  Aqueous buffered solution containing ≤0.09% sodium azide.

Description

Glutamate is a major excitatory neurotransmitter in mammalian brain. Glutamatergic neurotransmission is mediated by a family of glutamate receptors which can be grouped into two classes, ionotropic (GluR) and metabotropic (mGluR) receptors. The ionotropic GluRs can be divided into two subclasses, N-methyl-D-Aspartate (NMDA) and non-NMDA receptors. Five different forms of NMDA receptors (NMDAR1, R2A, R2B, R2C, and R2D) have been isolated. NMDAR1 is always required for the formation of functional NMDA receptors. Non-NMDA receptors can be divided into at least two subtypes, AMPA receptors which bind to methyl-4-isoxazole propionic acid (AMPA) and kainate binding (KA or kainic acid) receptors. Multiple subunits appear to comprise the family of non-NMDA receptors. GluR1-4 receptors (also known as GluR-A, B, C, and D) preferentially bind to AMPA. KA receptors consist of five subunits: GluR5, 6, 7, KA-1, and KA-2.

Functional receptors are formed by various combinations of these subunits and multiple forms of GluR are expressed in the same populations of neurons. GluR2 migrates at a molecular weight of ~102 kDa in SDS-PAGE.

Monoclonal antibody (mAb) 6C4 recognizes rat, macaque monkey, and dog GluR2. It does not cross-react with GluRs 1, 3, 4c, 5, 6, or 7. A recombinant trpE fusion protein containing the putative N-terminal portion (amino acids 175-430) of GluR2 was used as immunogen. The antibody was originally characterized by western blot analysis and immunohistochemical analysis of paraformaldehyde-fixed cells and paraffin-embeded-fixed frozen tissue sections. Its specificity for GluR2 was determined by radioimmunoassay and by western blot analysis. In western blots obtained from cells transiently transfected with different GluRs, the antibody recognized GluR2 but not GluRs 1, 3, 4c, 5, 6, 7. Cross-species western blot reactivity was determined by using homogenates of fresh frozen tissue samples from rat, macaque monkey and dog cerebral cortex. In western blot analysis of tissue homogenates, clone 6C4 recognizes GluR2 as an ~102 kDa protein. Other proteins noted by western blot at 66 kDa and lower molecular weights appear to be breakdown products of GluR2. The specificity of 6C4 for GluR2 in rat brain tissue sections was verified by showing that antibody reactivity was blocked by preincubation with recombinant GluR2 protein but not with recombinant GluR1 or GluR3 protein. Immunohistochemical analysis using 6C4 shows that GluR2 is widely distributed at both the cellular and synaptic levels in rat hippocampus and neocortex, please refer to Vissavajjhala, et al. for additional staining information.

![Western blot analysis of glutamate receptor expression on mouse and rat brain. Mouse (left panel) and rat (right panel) brain lysate were probed with Purified Mouse Anti-Glutamate Receptor (Cat. No. 556341) at 1.0 (lanes 1), 0.25 (lanes 2), and 0.125 (lanes 3) µg/test, followed by HRP Goat Anti-Mouse Ig (Cat. No. 554002) at a 1:3000 dilution. Expression of glutamate receptor is indicated by bands at 102 and 66 kDa.](image)
**Preparation and Storage**

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography.

Store undiluted at 4°C.

**Application Notes**

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<td>Western blot</td>
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<td>Immunohistochemistry-formalin (antigen retrieval</td>
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<td>Radioimmunoassay</td>
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<td>Electron microscopy</td>
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**Recommended Assay Procedure:**

Clone 6C4 can be used for immunohistochemistry of 4% paraformaldehyde-fixed frozen tissue sections and should be titrated in the range of 2 µg/ml. Other reported applications include western blot analysis (2 µg/ml), immunohistochemistry of 4% paraformaldehyde-fixed tissue cultured cells, post-embedding immunogold electron microscopy and radioimmunoassay.

**Suggested Companion Products**

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<th>Catalog Number</th>
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<tr>
<td>554002</td>
<td>HRP Goat Anti-Mouse Ig</td>
<td>1 mL</td>
<td>(none)</td>
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**Product Notices**

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
3. Sodium azide is a reversible inhibitor of oxidative metabolism; therefore, antibody preparations containing this preservative agent must not be used in cell cultures nor injected into animals. Sodium azide may be removed by washing stained cells or plate-bound antibody or dialyzing soluble antibody in sodium azide-free buffer. Since endotoxin may also affect the results of functional studies, we recommend the NA/LE (No Azide/Low Endotoxin) antibody format, if available, for in vitro and in vivo use.
4. Species testing during development may have been performed with a different format of the same clone. Selected applications have been tested for cross-reactivity.
5. Please refer to http://regdocs.bd.com to access safety data sheets (SDS).

**References**

