# Anti-NR2B glutamate receptor
# Catalog# SMC-337D
Size: 100µg

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| **Product** | **Mouse anti-NR2B glutamate receptor, monoclonal** |
| **Clone** | **S59-36** |
| **Immunogen** | **Fusion protein amino acids 20-271 (extracellular N-terminus) of rat NR2B (also known as N-methyl D-aspartate/ NMDA receptor subtype 2B, accession number Q00960** |
| **Host and Subclass** | **Mouse monoclonal, $IgG_{2B}$** |
| **Cited Applications** | **WB, IHC, IP** |
| **Specificity** | **~166kDa. No cross reactivity against NR2A** |
| **Species cross-reactivity** | **Human, Mouse, Rat.** |
| **Format** | **Protein G Purified. In PBS pH7.4, 50% glycerol and 0.09% sodium azide.** |
| **Concentration and working dilution** | **1mg/mL; WB: 1ug/mL; IHC/ICC: 0.1-1.0ug/mL (Perox), 1.0-10ug/mL (IF)** |
| **Storage and stability** | **-20˚C; 1 year+; shipped on cold packs or ambient** |

**Scientific Background**

Ion channels are integral membrane proteins that help establish and control the small voltage gradient across the plasma membrane of living cells by allowing the flow of ions down their electrochemical gradient (1). They are present in the membranes that surround all biological cells because their main function is to regulate the flow of ions across this membrane. Whereas some ion channels permit the passage of ions based on charge, others conduct based on a ionic species, such as sodium or potassium. Furthermore, in some ion channels, the passage is governed by a gate which is controlled by chemical or electrical signals, temperature, or mechanical forces.

There are a few main classifications of gated ion channels. There are voltage- gated ion channels, ligand-gated, other gating systems and finally those that are classified differently, having more exotic characteristics. The first are voltage- gated ion channels which open and close in response to membrane potential. These are then separated into sodium, calcium, potassium, proton, transient receptor, and cyclic nucleotide-gated channels; each of which is responsible for a unique role. Ligand-gated ion channels are also known as ionotropic receptors, and they open in response to specific ligand molecules binding to the extracellular domain of the receptor protein. The other gated classifications include activation and inactivation by second messengers, inward-rectifier potassium channels, calcium-activated potassium channels, two-pore-domain potassium channels, light-gated channels, mechano-sensitive ion channels and cyclic nucleotide-gated channels. Finally, the other classifications are based on less normal characteristics such as two-pore channels, and transient receptor potential channels (2).

NR2B containing receptors have been implicated in synaptic plasticity, memory formation and pain modulation (3). Studies suggest that the NR2B subunit of glutamate receptors may be potential targets for relieving pain; NR2B may be a probable target for anti-nociceptive drugs, and may also be useful as analgesics (4).

**Selected References**


1. Hille B. (2001) Ion Channels of Excitable Membranes, 3rd Ed., Sinauer Associated Inc.: Sunderland, MA USA.
2. www.iochannels.org
3. Zhuo M. (2009) Mol Brain. 2(1): 4
4. Gurwitz D, and Weizman A. (2002) Drug Discovery Today, 7(7): 403-406.


## Certificate of Analysis

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**1µg/mL of SMC-337 was sufficient for detection of NR2B in 10µg of rat brain lysate by colorimetric immunoblot analysis using goat anti-mouse IgG:HRP as the secondary antibody.**

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# Material Safety Data Sheet

## Anti- NR2B glutamate receptor (Monoclonal Antibody) SMC-337

This product is for *in vitro* research use only and is not intended for use in humans or animals



### Hazardous Ingredients

The physical, chemical and toxicological properties of these components have not been fully investigated. It is recommended that all laboratory personnel follow standard laboratory safety procedures when handling this product. Safety procedures should include wearing OSHA approved safety glasses, gloves and protective clothing. Direct physical contact with this product should be avoided.

| Known Hazardous Components | CAS Number | Percent |
|---|---|---|
| Sodium Azide | 26628-22-8 | 0.09 |

### Physical Data

This product consists of mouse immunoglobulin in PBS containing 0.09% azide in 50% glycerol, shipped on gel packs. The physical properties of this product have not been investigated thoroughly.

### Fire and Explosion Hazard and Reactivity Data

NOT APPLICABLE

### Toxicological Properties

May be harmful by inhalation, ingestion, or skin absorption. The toxicological properties of this product have not been investigated thoroughly. Exercise due caution.

### Preventative Measures

Wear chemical safety goggles and compatible chemical-resistant gloves. Avoid inhalation, contact with eyes, skin or clothing.

### Spill and Leak Procedures

Observe all federal, state and local environmental regulations.

- Wear protective equipment.
- Absorb on sand or vermiculite and place in closed containers for disposal.
- Dispose or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

### First Aid Measures

- If swallowed, wash out mouth with water, provided person is conscious. Call a physician.
- In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. If a rash or other irritation develops, call a physician.
- If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.
- In case of eye contact, flush with copious amounts of water for at least 15 minutes while separating the eyelids with fingers. Call a physician.