

DESCRIPTION

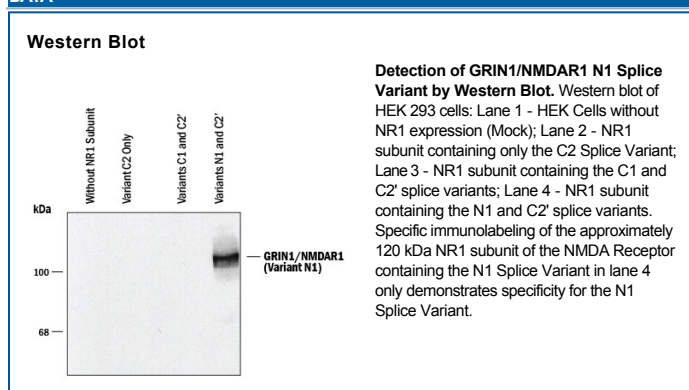
Species Reactivity	Mouse/Rat
Specificity	Mouse and rat ~120 kDa NR1 subunit of the NMDA Receptor containing the N1 splice variant
Source	Polyclonal Rabbit IgG
Purification	Antigen Affinity-purified
Immunogen	Peptide from the NR1 subunit, N1 Splice Variant of the NMDA Receptor
Formulation	25 µg lyophilized in 5 mM ammonium bicarbonate. 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
Immunohistochemistry	1:1000 - 1:2000 dilution	(frozen sections)

DATA



PREPARATION AND STORAGE

Reconstitution	Reconstitute with 50 µL of sterile PBS.
Shipping	The product is shipped at ambient temperature. 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

NMDA (N-Methyl D-Aspartate) receptors are members of the glutamate receptor family of ligand-gated ion channels. The functional NMDA receptor is a heteromultimer of at least two NR1 (NMDA receptor-1) subunits and two NR2 subunits. Regulation of the NMDA complex by external factors such as zinc, PKC and polyamines is mediated by NR1 subunits. Upon glycine binding to NR1 and glutamate binding to NR2, the NMDA channel is opened allowing calcium and sodium influx into the cell. NR1 is a 120 kDa, 938 amino acid (aa), three transmembrane (TM) glycoprotein that contains a 541 aa extracellular domain and a 105 aa cytoplasmic region. The molecule is described as 4-TM. However, the second-TM segment is only partial (or reenterant), and this makes the C-terminus intracellular. Differential splicing of three exons generates up to nine isoforms of NR1. These exons encode a 21 amino acid N-terminal domain (N1) and adjacent sequences in the C-terminus (C1 and C2). Splicing out the C2 cassette eliminates the first stop codon and produces a new reading frame that generates a new sequence of 22 amino acids (C2'). Eight are integral membrane proteins. At the N-terminus, four isoforms show a 21 aa insertion between aa 190 - 191, and four do not. This is compounded by at least four possible variants between aa 864 - 938 in the cytoplasmic tail that impact potential serine phosphorylation sites. To date, all are believed to be physiologically active. There is one potentially "soluble" form that is only 181 aa in length. Its function is unknown.

References:

- Stephenson, F.A. (2001) *Curr. Drug Targets* 2:233.
- Sugihara, H. et al. (1992) *Biochem. Biophys. Res. Commun.* 185:826.
- Prybylowski, K. and R.J. Wenthold (2004) *J. Biol. Chem.* 279:9673.
- Moriyoshi, K. et al. (1991) *Nature* 354:31.