

# NR3A (P-20): sc-51160

## BACKGROUND

NR3A is a subunit of the N-methyl-D-aspartate (NMDA) receptors, which belong to the superfamily of glutamate-regulated ion channels and function in pathological and physiological processes in the central nervous system. NR3A is a multi-pass membrane protein that is expressed in fetal brain and is mediated by glycine. It may be involved in the development of dendritic spines and in the PPP2CB-NMDAR mediated signaling mechanism. NR3A forms a heteromeric channel composed of a  $\zeta$  subunit (GRIN1), an  $\epsilon$  subunit (GRIN2A, GRIN2B, GRIN2C or GRIN2D) and a third subunit (GRIN3A or GRIN3B). The NR3A protein is enriched in post-synaptic plasma membrane and post-synaptic densities and requires the presence of GRIN1 to be targeted at the plasma membrane. The NR3A subunit displays greater than 90% sequence homology to the corresponding subunit in rat.

## REFERENCES

1. Das, S., et al. 1998. Increased NMDA current and spine density in mice lacking the NMDA receptor subunit NR3A. *Nature* 393: 377-381.
2. Chan, S.F. and Sucher, N.J. 2001. An NMDA receptor signaling complex with protein phosphatase 2A. *J. Neurosci.* 21: 7985-7992.
3. Andersson, O., et al. 2001. Nucleotide sequence, genomic organization, and chromosomal localization of genes encoding the human NMDA receptor subunits NR3A and NR3B. *Genomics* 78: 178-184.
4. Chatterton, J.E., et al. 2002. Excitatory glycine receptors containing the NR3 family of NMDA receptor subunits. *Nature* 415: 793-798.
5. Eriksson, M., et al. 2002. Cloning and expression of the human N-methyl-D-aspartate receptor subunit NR3A. *Neurosci. Lett.* 321: 177-181.
6. Nagase, T., et al. 2002. Prediction of the coding sequences of unidentified human genes. XXII. The complete sequences of 50 new cDNA clones which code for large proteins. *DNA Res.* 8: 319-327.
7. Mueller, H.T. and Meador-Woodruff, J.H. 2003. Expression of the NR3A subunit of the NMDA receptor in human fetal brain. *Ann. N.Y. Acad. Sci.* 1003: 448-451.

## CHROMOSOMAL LOCATION

Genetic locus: GRIN3A (human) mapping to 9q31.1; Grin3a (mouse) mapping to 4 B1.

## SOURCE

NR3A (P-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of NR3A of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-51160 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

NR3A (P-20) is recommended for detection of NR3A of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

NR3A (P-20) is also recommended for detection of NR3A in additional species, including equine, canine and bovine.

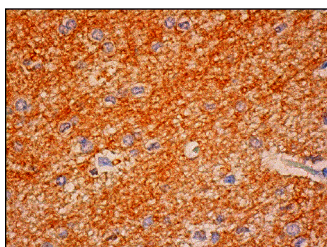
Suitable for use as control antibody for NR3A siRNA (h): sc-61229, NR3A siRNA (m): sc-61230, NR3A shRNA Plasmid (h): sc-61229-SH, NR3A shRNA Plasmid (m): sc-61230-SH, NR3A shRNA (h) Lentiviral Particles: sc-61229-V and NR3A shRNA (m) Lentiviral Particles: sc-61230-V.

Molecular Weight of NR3A: 135 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



NR3A (P-20): sc-51160. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebral cortex tissue showing neuropil staining.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.