SANTA CRUZ BIOTECHNOLOGY, INC.

# NR3A siRNA (h): sc-61229

## 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 ζ subunit (GRIN1), an ε 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.

## PRODUCT

NR3A siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NR3A shRNA Plasmid (h): sc-61229-SH and NR3A shRNA (h) Lentiviral Particles: sc-61229-V as alternate gene silencing products.

For independent verification of NR3A (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-61229A, sc-61229B and sc-61229C.

## RESEARCH USE

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

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

NR3A siRNA (h) is recommended for the inhibition of NR3A expression in human cells.

## SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NR3A gene expression knockdown using RT-PCR Primer: NR3A (h)-PR: sc-61229-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.