SANTA CRUZ BIOTECHNOLOGY, INC.

# RIC-3 siRNA (m): sc-72302

## BACKGROUND

RIC-3 (resistant to inhibitors of cholinesterase-3) is the mammalian homolog of the ric-3 protein from *C. elegans*. It contains two transmembrane domains and a coiled coil domain. RIC-3 is expressed in neurons and localizes to the endoplasmic reticulum where it plays a role in receptor folding and subunit assembly. In particular, RIC-3 is a nicotinic acetylcholine receptor (nAChR)-associated protein and it significantly enhances the subunit assembly, proper folding, stability and surface expression of several heteromeric and homomeric nAChR subtypes as well as some 5-HT3 receptors. This suggests that RIC-3 may be an important regulator of receptor expression. Several isoforms exist for RIC-3 and they exhibit overlapping but distinct localizations. In addition, these isoforms may have various affects on receptor expression.

## REFERENCES


1. Halevi, S., et al. 2003. Conservation within the RIC-3 gene family. Effectors of mammalian nicotinic acetylcholine receptor expression. J. Biol. Chem. 278: 34411-34417.
2. Williams, M.E., et al. 2005. Ric-3 promotes functional expression of the nicotinic acetylcholine receptor $\alpha$7 subunit in mammalian cells. J. Biol. Chem. 280: 1257-1263.
3. Cheng, A., et al. 2005. Cell surface expression of 5-hydroxytryptamine type 3 receptors is promoted by RIC-3. J. Biol. Chem. 280: 22502-22507.
4. Castillo, M., et al. 2005. Dual role of the RIC-3 protein in trafficking of serotonin and nicotinic acetylcholine receptors. J. Biol. Chem. 280: 27062-27068.
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6. Ben-Ami, H.C., et al. 2005. RIC-3 affects properties and quantity of nicotinic acetylcholine receptors via a mechanism that does not require the coiled-coil domains. J. Biol. Chem. 280: 28053-28060.
7. Severance, E.G. and Yolken, R.H. 2007. Lack of RIC-3 congruence with $\beta$2 subunit-containing nicotinic acetylcholine receptors in bipolar disorder. Neuroscience 148: 454-460.
8. Cheng, A., et al. 2007. Differential subcellular localization of RIC-3 isoforms and their role in determining 5-HT3 receptor composition. J. Biol. Chem. 282: 26158-26166.
9. Castelán, F., et al. 2007. Cytoplasmic regions adjacent to the M3 and M4 transmembrane segments influence expression and function of $\alpha$7 nicotinic acetylcholine receptors. A study with single amino acid mutants. J. Neurochem. 100: 406-415.


## CHROMOSOMAL LOCATION

Genetic locus: Ric3 (mouse) mapping to 7 E3.

## PROTOCOLS

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

## PRODUCT

RIC-3 siRNA (m) 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 RIC-3 shRNA Plasmid (m): sc-72302-SH and RIC-3 shRNA (m) Lentiviral Particles: sc-72302-V as alternate gene silencing products.

For independent verification of RIC-3 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-72302A, sc-72302B and sc-72302C.

## 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

RIC-3 siRNA (m) is recommended for the inhibition of RIC-3 expression in mouse 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 RIC-3 gene expression knockdown using RT-PCR Primer: RIC-3 (m)-PR: sc-72302-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## RESEARCH USE

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