

# $\alpha$ -synuclein siRNA (m): sc-42286

## BACKGROUND

The synuclein family members, including  $\alpha$ -synuclein (also designated NACP for non- $\beta$  amyloid component) and  $\beta$ -synuclein, are predominantly expressed in the brain and are speculated to be involved in synaptic regulation and neuronal plasticity.  $\alpha$ -synuclein is localized to neuronal cell bodies and synapses.  $\alpha$ -synuclein was first identified as a component of Alzheimer's disease amyloid plaques. Abnormal platelet function in Alzheimer's disease has been demonstrated. During megakaryocytic differentiation  $\alpha$ -synuclein was found to be upregulated, while  $\beta$ -synuclein is downregulated, indicating that coordinate expression of synucleins may be important during hematopoietic cell differentiation. A mutant form of  $\alpha$ -synuclein has been found in patients with early onset Parkinson's disease.

## REFERENCES

1. Ueda, K., et al. 1993. Molecular cloning of cDNA encoding an unrecognized component of amyloid in Alzheimer disease. Proc. Natl. Acad. Sci. USA 90: 11282-11286.
2. Jakes, R., et al. 1994. Identification of two distinct synucleins from human brain. FEBS Lett. 345: 27-32.
3. Iwai, A., et al. 1995. The precursor protein of non-A  $\beta$  component of Alzheimer's disease amyloid is a presynaptic protein of the central nervous system. Neuron 14: 467-475.
4. Hashimoto, M., et al. 1997. NACP, a synaptic protein involved in Alzheimer's disease, is differentially regulated during megakaryocytedifferentiation. Biochem. Biophys. Res. Commun. 237: 611-616.
5. Polymeropoulos, M.H., et al. 1997. Mutation in the  $\alpha$ -synuclein gene identified in families with Parkinson's disease. Science 276: 2045-2047.

## CHROMOSOMAL LOCATION

Genetic locus: Snca (mouse) mapping to 6 B3.

## PRODUCT

$\alpha$ -synuclein siRNA (m) is a pool of 2 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see  $\alpha$ -synuclein shRNA Plasmid (m): sc-42286-SH and  $\alpha$ -synuclein shRNA (m) Lentiviral Particles: sc-42286-V as alternate gene silencing products.

For independent verification of  $\alpha$ -synuclein (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-42286A and sc-42286B.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

$\alpha$ -synuclein siRNA (m) is recommended for the inhibition of  $\alpha$ -synuclein 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  $\mu$ M in 66  $\mu$ l. 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.

## GENE EXPRESSION MONITORING

$\alpha$ -synuclein (2B2D1): sc-53955 is recommended as a control antibody for monitoring of  $\alpha$ -synuclein gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor  $\alpha$ -synuclein gene expression knockdown using RT-PCR Primer:  $\alpha$ -synuclein (m)-PR: sc-42286-PR (20  $\mu$ l, 583 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.