SANTA CRUZ BIOTECHNOLOGY, INC.

ADNP siRNA (m): sc-60128

BACKGROUND

Activity-dependent neuroprotector (ADNP), also designated activity-dependent neuroprotective protein, is a nuclear protein that functions as a putative transcription factor and may participate in normal growth and cancer proliferation. ADNP is a highly conserved vasoactive intestinal peptide (VIP)-responsive gene that is expressed profusely in the brain (primarily cerebellum and cortex regions) and is crucial for brain formation and embryonic development. ADNP is also highly expressed in kidney, placenta, heart, skeletal muscle, breast and colon cancer tissues. Studies indicate that neuroprotection by subpicomolar PACAP38 might be mediated partially by expression of ADNP. A correlation between brain injuries and elevated ADNP levels indicates a potential involvement of ADNP in an endogenous compensatory mechanism.

REFERENCES

1. Gozes, I., et al. 2003. From vasoactive intestinal peptide (VIP) through activity-dependent neuroprotective protein (ADNP) to NAP: a view of neuroprotection and cell division. J. Mol. Neurosci. 20: 315-322.
2. Furman, S., et al. 2004. Sexual dimorphism of activity-dependent neuroprotective protein in the mouse arcuate nucleus. Neurosci. Lett. 373: 73-78.
3. Gozes, I., et al. 2005. The expression of activity-dependent neuroprotective protein (ADNP) is regulated by brain damage and treatment of mice with the ADNP derived peptide, NAP, reduces the severity of traumatic head injury. Curr. Alzheimer Res. 2: 149-153.
4. Li, M., et al. 2005. Signaling cascades involved in neuroprotection by subpicomolar pituitary adenylate cyclase-activating polypeptide 38. J. Mol. Neurosci. 27: 91-105.
5. Zaltzman, R., et al. 2005. The influence of the peptide NAP on Mac-1-deficient mice following closed head injury. injury. Peptides 26: 1520-1527.
6. Gozes, I., et al. 2006. NAP: research and development of a peptide derived from activity-dependent neuroprotective protein (ADNP). CNS Drug Rev. 11: 353-368.
7. Sari, Y. and Gozes, I. 2006. Brain deficits associated with fetal alcohol exposure may be protected, in part, by peptides derived from activity-dependent neurotrophic factor and activity-dependent neuroprotective protein. Brain Res. Rev. 52: 107-118.

CHROMOSOMAL LOCATION

Genetic locus: Adnp (mouse) mapping to 2 H3.

PRODUCT

ADNP 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 ADNP shRNA Plasmid (m): sc-60128-SH and ADNP shRNA (m) Lentiviral Particles: sc-60128-V as alternate gene silencing products.

For independent verification of ADNP (m) gene silencing results, we alsoprovide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-60128A, sc-60128B and sc-60128C.

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

ADNP siRNA (m) is recommended for the inhibition of ADNP 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.

GENE EXPRESSION MONITORING

ADNP (F-5): sc-393377 is recommended as a control antibody for monitoring of ADNP 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 ADNP gene expression knockdown using RT-PCR Primer: ADNP (m)-PR: sc-60128-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.

PROTOCOLS

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