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UNC45A siRNA (m): sc-154919

BACKGROUND

UNC45A (unc-45 homolog A), also known as SMAP1 (smooth muscle cell-associated protein 1) or GCUNC45, is a 944 amino acid protein that localizes to the perinuclear region of the cytoplasm and contains three TPR repeats. Expressed in spinal cord, bone marrow, peripheral blood leukocytes, trachea, stomach and adrenal gland, UNCA45A functions as a chaperone for HSP 90, effectively facilitating the association of HSP 90 with PR (progesterone receptor). Additionally, UNC45A is thought to be necessary for proper folding of myosin and is required for normal myotube formation during muscle cell development, thereby playing an important role in muscle formation. Over-expression of UNC45A is associated with rapid cell proliferation and motility, especially that observed in ovarian cancer, suggesting a role for UNC45A in tumorigenesis. Multiple isoforms of UNC45A exist due to alternative splicing events.

REFERENCES

- Price, M.G., et al. 2002. Two mammalian UNC-45 isoforms are related to distinct cytoskeletal and muscle-specific functions. *J. Cell Sci.* 115: 4013-4023.
- Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 611219. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
- Chadli, A., et al. 2006. GCUNC-45 is a novel regulator for the progesterone receptor/Hsp90 chaperoning pathway. *Mol. Cell. Biol.* 26: 1722-1730.
- Bazzaro, M., et al. 2007. Myosin II co-chaperone general cell UNC-45 overexpression is associated with ovarian cancer, rapid proliferation, and motility. *Am. J. Pathol.* 171: 1640-1649.
- Chadli, A., et al. 2008. Analysis of Hsp90 cochaperone interactions reveals a novel mechanism for TPR protein recognition. *Biochemistry* 47: 2850-2857.
- Anderson, M.J., et al. 2008. Loss of unc45a precipitates arteriovenous shunting in the aortic arches. *Dev. Biol.* 318: 258-267.

CHROMOSOMAL LOCATION

Genetic locus: *Unc45a* (mouse) mapping to 7 D3.

PRODUCT

UNC45A 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see UNC45A shRNA Plasmid (m): sc-154919-SH and UNC45A shRNA (m) Lentiviral Particles: sc-154919-V as alternate gene silencing products.

For independent verification of UNC45A (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-154919A, sc-154919B and sc-154919C.

PROTOCOLS

See our web site at 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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

UNC45A siRNA (m) is recommended for the inhibition of UNC45A 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 μ M in 66 μ 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

UNC45A (AbS1): sc-101493 is recommended as a control antibody for monitoring of UNC45A 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 κ BP-HRP: sc-516102 or m-IgG κ 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 κ BP-FITC: sc-516140 or m-IgG κ 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 UNC45A gene expression knockdown using RT-PCR Primer: UNC45A (m)-PR: sc-154919-PR (20 μ l). 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.