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SMP30 siRNA (m): sc-153635

BACKGROUND

Senescence marker protein-30 (SMP30) is expressed in the liver, kidney and submandibular gland. In the kidney, SMP30 localizes to the hepatocytes and renal proximal tubular epithelium. SMP30 expression levels increase during tissue maturation during development and decrease with aging in an androgen-independent fashion. SMP30 affects intracellular calcium homeostasis by modulating the activity of the plasma membrane calcium pump. The effect of SMP30 on calcium levels appears to protect cells from apoptosis. The promoter sequence for the mouse SMP30 gene contains binding sites for unknown and known transcription factors, including Sp1, AP2, CCAAT box, Lyf-1 and GATA-1.

REFERENCES

1. Fujita, T., et al. 1992. Purification of senescence marker protein-30 (SMP30) and its androgen-independent decrease with age in the rat liver. *Biochim. Biophys. Acta* 1116: 122-128.
2. Fujita, T., et al. 1992. Isolation of cDNA clone encoding rat senescence marker protein-30 (SMP30) and its tissue distribution. *Biochim. Biophys. Acta* 1132: 297-305.
3. Fujita, T., et al. 1995. Isolation of cDNA clone encoding human homologue of senescence marker protein-30 (SMP30) and its location on the X chromosome. *Biochim. Biophys. Acta* 1263: 249-252.
4. Fujita, T., et al. 1996. Gene regulation of senescence marker protein-30 (SMP30): coordinated upregulation with tissue maturation and gradual downregulation with aging. *Mech. Ageing Dev.* 87: 219-229.
5. Fujita, T., et al. 1998. Senescence marker protein-30 (SMP30) rescues cell death by enhancing plasma membrane Ca²⁺-pumping activity in Hep G2 cells. *Biochem. Biophys. Res. Commun.* 250: 374-380.
6. Supakar, P.C., et al. 2000. Identification of novel sequence-specific nuclear factors interacting with mouse senescence marker protein-30 gene promoter. *Biochem. Biophys. Res. Commun.* 272: 436-440.

CHROMOSOMAL LOCATION

Genetic locus: Rgn (mouse) mapping to X A1.3.

PRODUCT

SMP30 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 SMP30 shRNA Plasmid (m): sc-153635-SH and SMP30 shRNA (m) Lentiviral Particles: sc-153635-V as alternate gene silencing products.

For independent verification of SMP30 (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-153635A, sc-153635B and sc-153635C.

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

SMP30 siRNA (m) is recommended for the inhibition of SMP30 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

SMP30 (E-11): sc-390098 is recommended as a control antibody for monitoring of SMP30 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 SMP30 gene expression knockdown using RT-PCR Primer: SMP30 (m)-PR: sc-153635-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.