

SMOC-2 siRNA (h): sc-63046

BACKGROUND

SMOC-2 (SPARC-related modular calcium-binding protein-2), also known as SMAP2, MST117, MSTP117 or MSTP140, is a secreted modular calcium-binding glycoprotein found in the extracellular space. SMOC-2 is a member of the SPARC/BM-40 family and contains two EF-hand domains, one Kazal-like domain and two thyroglobulin type-1 domains. The SPARC/BM-40 family has been implicated in tissue remodeling, angiogenesis and bone mineralization. SMOC-2 is a widely expressed protein with highest expression levels found in spleen, ovary, muscle and heart tissues. SMOC-2 may interact directly with VEGF or FGF and is believed to participate in angiogenic activity, cell proliferation and migration. In addition, SMOC-2 is required for efficient growth factor-induced DNA synthesis, and its overexpression greatly stimulates DNA synthesis. For this reason, SMOC-2 is a potential target for anti-angiogenic therapies.

REFERENCES

1. Vannahme, C., et al. 2002. Characterization of SMOC-1, a novel modular calcium-binding protein in basement membranes. *J. Biol. Chem.* 277: 37977-37986.
2. Vannahme, C., et al. 2003. Characterization of SMOC-2, a modular extracellular calcium-binding protein. *Biochem. J.* 373: 805-814.
3. Rocnik, E.F., et al. 2006. The novel SPARC family member SMOC-2 potentiates angiogenic growth factor activity. *J. Biol. Chem.* 281: 22855-22864.
4. Gersdorff, N., et al. 2006. Secreted modular calcium-binding protein-1 localization during mouse embryogenesis. *Histochem. Cell Biol.* 126: 705-712.

CHROMOSOMAL LOCATION

Genetic locus: SMOC2 (human) mapping to 6q27.

PRODUCT

SMOC-2 siRNA (h) 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 SMOC-2 shRNA Plasmid (h): sc-63046-SH and SMOC-2 shRNA (h) Lentiviral Particles: sc-63046-V as alternate gene silencing products.

For independent verification of SMOC-2 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-63046A, sc-63046B and sc-63046C.

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

SMOC-2 siRNA (h) is recommended for the inhibition of SMOC-2 expression in human 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

SMOC-2 (F-11): sc-376104 is recommended as a control antibody for monitoring of SMOC-2 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 SMOC-2 gene expression knockdown using RT-PCR Primer: SMOC-2 (h)-PR: sc-63046-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Luo, L., et al. 2018. Suppression of SMOC-2 reduces bleomycin (BLM)-induced pulmonary fibrosis by inhibition of TGF- β 1/SMADs pathway. *Biomed. Pharmacother.* 105: 841-847.
2. Feng, D., et al. 2022. SMOC-2 promotes an epithelial-mesenchymal transition and a pro-metastatic phenotype in epithelial cells of renal cell carcinoma origin. *Cell Death Dis.* 13: 639.

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.