

SPRR1B siRNA (h): sc-88444

BACKGROUND

The small proline rich protein (SPRR) gene family encodes a conserved group of cornified envelope (CE) proteins that are part of the human epidermal differentiation complex (EDC). The formation of the cornified envelope during the late stages of epidermal differentiation is essential for epidermal barrier function and protects the body against environmental attack and water loss. Additionally, the expression of SPRR proteins is linked to keratinocyte terminal differentiation. The SPRR gene family, namely comprises three subclasses of genes, SPRR1 (which contains two members), SPRR2 (which contains eight members) and SPRR3 (which contains one member). SPRR1 is found predominantly in follicular epidermis and oral mucosa, SPRR2 is expressed coherently in follicular and interfollicular epidermis and SPRR3 is absent in epidermis and strongly expressed in internal squamous.

REFERENCES

1. Yaar, M., et al. 1995. *In vivo* and *in vitro* SPRR1 gene expression in normal and malignant keratinocytes. *Exp. Cell Res.* 217: 217-226.
2. Hohl, D., et al. 1995. The small proline-rich proteins constitute a multi-gene family of differentially regulated cornified cell envelope precursor proteins. *J. Invest. Dermatol.* 104: 902-909.
3. Austin, S.J., et al. 1996. Cloning and regulation of cornifin β , a new member of the cornifin/spr family. Suppression by retinoic acid receptor-selective retinoids. *J. Biol. Chem.* 271: 3737-3742.
4. Lohman, F.P., et al. 1997. Expression of the SPRR cornification genes is differentially affected by carcinogenic transformation. *Exp. Cell Res.* 231: 141-148.
5. Zimmermann, N., et al. 2005. Expression and regulation of small proline rich protein 2 in allergic inflammation. *Am. J. Respir. Cell Mol. Biol.* 32: 428-435.
6. Fischer, D.F. and Backendorf, C. 2005. Promoter analysis in the human SPRR gene family. *Methods Mol. Biol.* 289: 303-314.
7. Tong, L., et al. 2006. Expression and regulation of cornified envelope proteins in human corneal epithelium. *Invest. Ophthalmol. Vis. Sci.* 47: 1938-1946.
8. Li, S., et al. 2008. Small proline rich protein 1B (SPRR1B) is a biomarker for squamous metaplasia in dry eye disease. *Invest. Ophthalmol. Vis. Sci.* 49: 34-41.
9. Demetris, A.J., et al. 2008. Small proline rich proteins (SPRR) function as SH3 domain ligands, increase resistance to injury and are associated with epithelial-mesenchymal transition (EMT) in cholangiocytes. *J. Hepatol.* 48: 276-288.

CHROMOSOMAL LOCATION

Genetic locus: SPRR1B (human) mapping to 1q21.3.

PROTOCOLS

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

PRODUCT

SPRR1B siRNA (h) 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see SPRR1B shRNA Plasmid (h): sc-88444-SH and SPRR1B shRNA (h) Lentiviral Particles: sc-88444-V as alternate gene silencing products.

For independent verification of SPRR1B (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-88444A and sc-88444B.

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

SPRR1B siRNA (h) is recommended for the inhibition of SPRR1B 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor SPRR1B gene expression knockdown using RT-PCR Primer: SPRR1B (h)-PR: sc-88444-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.