

17 β -HSD4 siRNA (h): sc-61918

BACKGROUND

17 β -HSD4 (17 β -hydroxysteroid dehydrogenase type 4) is also known as peroxisomal multifunctional enzyme/protein 2 (MFE-2/MFP-2), D-bifunctional enzyme or 17- β Estradiol dehydrogenase type IV. It belongs to the 17 β -HSD family of proteins that regulate the availability of steroids within various tissues throughout the body. 17 β -HSD4 inactivates Estradiol through its oxidative activity but it is primarily involved in peroxisomal fatty acid and cholesterol β -oxidation. It has a multi-domain structure: the dehydrogenase domain is fused to a hydratase and a lipid transfer domain. 17 β -HSD4 is a target protein of chromeceptin and it is essential for the downstream activation of Stat6. 17 β -HSD4-deficient patients exhibit Zellweger-like syndrome and die within the first year of life. They display neuronal migration defects, facial dysmorphisms, severe hypotonia and convulsions in the neonatal period.

REFERENCES

- Husen, B., et al. 2000. Differential expression of 17 β -hydroxysteroid dehydrogenases types 2 and 4 in human endometrial epithelial cell lines. *J. Mol. Endocrinol.* 24:135-144.
- Breitling, R., et al. 2001. Evolution of 17 β -HSD type 4, a multifunctional protein of β -oxidation. *Mol. Cell. Endocrinol.* 171: 205-210.
- Kobayashi, K., et al. 2004. Expression of estrogen receptor α and 17 β -hydroxysteroid dehydrogenase 4 in the ciliary body. *Graefes Arch. Clin. Exp. Ophthalmol.* 242: 172-176.
- Nagayoshi, Y., et al. 2005. Characterization of 17 β -hydroxysteroid dehydrogenase type 4 in human ovarian surface epithelial cells. *Mol. Hum. Reprod.* 11: 615-621.

CHROMOSOMAL LOCATION

Genetic locus: HSD17B4 (human) mapping to 5q23.1.

PRODUCT

17 β -HSD4 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 17 β -HSD4 shRNA Plasmid (h): sc-61918-SH and 17 β -HSD4 shRNA (h) Lentiviral Particles: sc-61918-V as alternate gene silencing products.

For independent verification of 17 β -HSD4 (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-61918A, sc-61918B and sc-61918C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20 $^{\circ}$ C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20 $^{\circ}$ 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

17 β -HSD4 siRNA (h) is recommended for the inhibition of 17 β -HSD4 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

17 β -HSD4 (A-6): sc-365167 is recommended as a control antibody for monitoring of 17 β -HSD4 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 17 β -HSD4 gene expression knockdown using RT-PCR Primer: 17 β -HSD4 (h)-PR: sc-61918-PR (20 μ l). Annealing temperature for the primers should be 55-60 $^{\circ}$ C and the extension temperature should be 68-72 $^{\circ}$ C.

SELECT PRODUCT CITATIONS

- Roberto, D., et al. 2019. Functional validation of metabolic genes that distinguish Gleason 3 from Gleason 4 prostate cancer foci. *Prostate* 79: 1777-1788.

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.