SANTA CRUZ BIOTECHNOLOGY, INC.

FOXL2 siRNA (h): sc-106837

BACKGROUND

FOXL2 is a 376 amino acid protein encoded by the human gene FOXL2. FOXL2 is found in the nucleus and is believed to be a transcriptional regulator. Defects in FOXL2 are a cause of blepharophimosis, ptosis and epicanthus inversus syndrome (BPES), also known as blepharophimosis syndrome. BPES is an autosomal dominant disorder characterized by eyelid dysplasia, small palpebral fissures, drooping eyelids and a skin fold running inward and upward from the lower lid. In type I BPSE (BPES1) eyelid abnormalities are associated with female infertility. Affected females show an ovarian deficit due to primary amenorrhea or to premature ovarian failure (POF). In type II BPSE (BPES2) affected individuals show only the eyelid defects. There is a mutational hotspot in the region coding for the poly-Ala domain, since 30% of all mutations in the ORF lead to poly-Ala expansions, resulting mainly in BPES type II. Defects in FOXL2 are also a cause of premature ovarian failure 3 (POF3). POF is a defect of ovarian development and is characterized by hypoestrogenism, primary or secondary amenorrhea, elevated levels of serum gonadotropins or early menopause. POF is defined as the cessation of ovarian function under the age of 40 years.

REFERENCES

1. De Baere, E., et al. 2001. Spectrum of FOXL2 gene mutations in blepharophimosis-ptosis-epicanthus inversus (BPES) families demonstrates a genotype—phenotype correlation. Hum. Mol. Genet. 10: 1591-1600.
2. Beysen, D., et al. 2004. The human FOXL2 mutation database. Hum. Mutat. 24: 189-193.
3. Lee, K., et al. 2005. Transcriptional factor FOXL2 interacts with DP103 and induces apoptosis. Biochem. Biophys. Res. Commun. 336: 876-881.
4. Raile, K., et al. 2005. A new heterozygous mutation of the FOXL2 gene is associated with a large ovarian cyst and ovarian dysfunction in an adolescent girl with blepharophimosis/ptosis/epicanthus inversus syndrome. Eur. J. Endocrinol. 153: 353-358.
5. Vincent, A.L., et al. 2005. Blepharophimosis and bilateral Duane syndrome associated with a FOXL2 mutation. Clin. Genet. 68: 520-523.
6. Or, S.F., et al. 2006. Three novel FOXL2 gene mutations in Chinese patients with blepharophimosis-ptosis-epicanthus inversus syndrome. Chin. Med. J. 119: 49-52.

CHROMOSOMAL LOCATION

Genetic locus: FOXL2 (human) mapping to 3q22.3.

PRODUCT

FOXL2 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see FOXL2 shRNA Plasmid (h): sc-106837-SH and FOXL2 shRNA (h) Lentiviral Particles: sc-106837-V as alternate gene silencing products.

For independent verification of FOXL2 (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-106837A, sc-106837B and sc-106837C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

FOXL2 siRNA (h) is recommended for the inhibition of FOXL2 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 µM in 66 µl. 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

FOXL2 (262C1a): sc-81275 is recommended as a control antibody for monitoring of FOXL2 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 FOXL2 gene expression knockdown using RT-PCR Primer: FOXL2 (h)-PR: sc-106837-PR (20 µl, 527 bp). 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.

PROTOCOLS

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