SANTA CRUZ BIOTECHNOLOGY, INC.

FTCD siRNA (m): sc-60663

BACKGROUND

58K protein antibodies are excellent for use as markers for the Golgi complex. The 58K protein has been identified as being FTCD, a bifunctional enzyme that channels 1-carbon units from formiminoglutamate, a metabolite of the histidine degradation pathway, to the folate pool. Defects in FTCD are the cause of glutamate formiminotransferase deficiency [also known as formiminoglutamicaciduria (FIGLU-uria)], an autosomal recessive disorder. Features of a severe phenotype include elevated levels of formiminoglutamate (FIGLU) in the urine in response to histidine administration, megaloblastic anemia and mental retardation. Features of a mild phenotype include high urinary excretion of FIGLU in the absence of histidine administration, mild developmental delay and no hematological abnormalities.

REFERENCES

1. Hennig, D., et al. 1998. A formiminotransferase cyclodeaminase isoform is localized to the Golgi complex and can mediate interaction of *trans*-Golgi network-derived vesicles with microtubules. J. Biol. Chem. 273: 19602-19611.
2. Bashour, A.M. and Bloom, G.S. 1998. 58K, a microtubule-binding Golgi protein, is a formiminotransferase cyclodeaminase. J. Biol. Chem. 273: 19612-19617.
3. Gao, Y.S., et al. 1998. Molecular cloning, characterization, and dynamics of rat formiminotransferase cyclodeaminase, a Golgi-associated 58-kDa protein. J. Biol. Chem. 273: 33825-33834.
4. Gao, Y.S., et al. 2002. A novel type of regulation of the vimentin intermediate filament cytoskeleton by a Golgi protein. Eur. J. Cell Biol. 81: 391-401.
5. Renous, R., et al. 2004. Characterization of the antigenicity of the formiminotransferase-cyclodeaminase in type 2 autoimmune hepatitis. Exp. Cell Res. 292: 332-341.
6. Mao, Y., et al. 2004. Structure of the bifunctional and Golgi-associated formiminotransferase octamer. EMBO J. 23: 2963-2971.
7. Hagiwara, H., et al. 2006. Localization of Golgi 58K protein (formiminotransferase cyclodeaminase) to the centrosome. Histochem. Cell Biol. 126: 251-259.

CHROMOSOMAL LOCATION

Genetic locus: Ftcd (mouse) mapping to 10 C1.

PRODUCT

FTCD 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see FTCD shRNA Plasmid (m): sc-60663-SH and FTCD shRNA (m) Lentiviral Particles: sc-60663-V as alternate gene silencing products.

For independent verification of FTCD (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-60663A, sc-60663B and sc-60663C.

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

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

FTCD (G-3): sc-271788 is recommended as a control antibody for monitoring of FTCD 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 FTCD gene expression knockdown using RT-PCR Primer: FTCD (m)-PR: sc-60663-PR (20 µl). 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.