SANTA CRUZ BIOTECHNOLOGY, INC.

GCNT2 siRNA (m): sc-145364

BACKGROUND

Belonging to the glycosyltransferase 14 family, GCNT2 (glucosaminyl (N-acetyl) transferase 2, I-branching enzyme (I blood group)), also known as II, N-acetylglucosaminyltransferase, IGNT, CCAT, ULG3, GCNT5, GCNT2C or NACGT1, is a 400 amino acid glycosyltransferase that localizes to the Golgi apparatus. Other members of the glycosyltransferase 14 family include GCNT1, GCNT3, GCNT4, GCNT6 and GCNT7. A single-pass type II membrane protein, GCNT2 functions as a branching enzyme known as β-1,6-N-acetyl-glucosa-minyltransferase, which converts fetal i antigen to adult I antigen in erythrocytes during embryonic development. With expression levels increasing significantly during oncogenesis and development, GCNT2 is found at highest levels in adult prostate and fetal brain, and is found at low levels in heart, small intestine, colon, brain, pancreas and kidney.

REFERENCES

1. Fukuda, M., et al. 1979. Developmental change and genetic defect in the carbohydrate structure of band 3 glycoprotein of human erythrocyte membrane. J. Biol. Chem. 254: 3700-3703.
2. Bierhuizen, M.F., et al. 1995. Genomic organization of core 2 and I branching β-1,6-N-acetylglucosaminyltransferases. Implication for evolution of the β-1,6-N-acetylglucosaminyltransferase gene family. Glycobiology 5: 417-425.
3. Sasaki, K., et al. 1997. Expression cloning of cDNA encoding a human β-1,3-N-acetylglucosaminyltransferase that is essential for poly-N-acetyl-lactosamine synthesis. Proc. Natl. Acad. Sci. USA 94: 14294-14299.
4. Yu, L.C., et al. 2001. Molecular basis of the adult i phenotype and the gene responsible for the expression of the human blood group I antigen. Blood 98: 3840-3845.
5. Yu, L.C., et al. 2003. The molecular genetics of the human I locus and molecular background explain the partial association of the adult i phenotype with congenital cataracts. Blood 101: 2081-2088.
6. Inaba, N., et al. 2003. A novel I-branching β-1,6-N-acetylglucosaminyl-transferase involved in human blood group I antigen expression. Blood 101: 2870-2876.

CHROMOSOMAL LOCATION

Genetic locus: Gcnt2 (mouse) mapping to 13 A3.3.

PRODUCT

GCNT2 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 GCNT2 shRNA Plasmid (m): sc-145364-SH and GCNT2 shRNA (m) Lentiviral Particles: sc-145364-V as alternate gene silencing products.

For independent verification of GCNT2 (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-145364A, sc-145364B and sc-145364C.

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

GCNT2 siRNA (m) is recommended for the inhibition of GCNT2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GCNT2 gene expression knockdown using RT-PCR Primer: GCNT2 (m)-PR: sc-145364-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.