SANTA CRUZ BIOTECHNOLOGY, INC.

GGCT siRNA (m): sc-140604

BACKGROUND

GGCT (γ-glutamylcyclotransferase), also known as Ggc, AA673177 or A030007L17Rik, is a 188 amino acid protein belonging to the γ-glutamylcyclotransferase family. Existing as a homodimer, GGCT catalyzes the formation of 5-oxoproline (pyroglutamic acid) from γ-glutamyl dipeptides, and may play a role in glutathione homeostasis. Widely expressed in a wide range of tissues, GGCT can be found at highest levels in bladder and salivary gland. GGCT exists as a crystalline structure composed of six β stands, five α helices and four short three(10) helices, resulting in a unique structural fold termed a GGCT fold. GGCT induces apoptosis when stimulated by geranylgeraniol (GGO), and is encoded by a gene that maps to mouse chromosome 6 B3.

REFERENCES

1. Tsipouras, P., Myers, J.C., Ramirez, F. and Prockop, D.J. 1983. Restriction fragment length polymorphism associated with the pro α 2(I) gene of human type I procollagen. Application to a family with an autosomal dominant form of osteogenesis imperfecta. J. Clin. Invest. 72: 1262-1267.
2. Iwasaki, S., Usami, S., Abe, S., Isoda, H., Watanabe, T. and Hoshino, T. 2001. Long-term audiological feature in Pendred syndrome caused by PDS mutation. Arch. Otolaryngol. Head Neck Surg. 127: 705-708.
3. Masuda, Y., Maeda, S., Watanabe, A., Sano, Y., Aiuchi, T., Nakajo, S., Itabe, H. and Nakaya, K. 2006. A novel 21-kDa cytochrome c-releasing factor is generated upon treatment of human leukemia U937 cells with geranylgeraniol. Biochem. Biophys. Res. Commun. 346: 454-460.
4. Oakley, A.J., Yamada, T., Liu, D., Coggan, M., Clark, A.G. and Board, P.G. 2008. The identification and structural characterization of C7orf24 as γ-glutamyl cyclotransferase. An essential enzyme in the γ-glutamyl cycle. J. Biol. Chem. 283: 22031-22042.
5. Skarnes, W.C., Rosen, B., West, A.P., Koutsourakis, M., Bushell, W., Iyer, V., Mujica, A.O., Thomas, M., Harrow, J., Cox, T., Jackson, D., Severin, J., Biggs, P., Fu, J., Nefedov, M., de Jong, P.J., Stewart, A.F. and Bradley, A. 2011. A conditional knockout resource for the genome-wide study of mouse gene function. Nature 474: 337-342.

CHROMOSOMAL LOCATION

Genetic locus: Ggct (mouse) mapping to 6 B3.

PRODUCT

GGCT 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 GGCT shRNA Plasmid (m): sc-140604-SH and GGCT shRNA (m) Lentiviral Particles: sc-140604-V as alternate gene silencing products.

For independent verification of GGCT (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-140604A, sc-140604B and sc-140604C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

GGCT siRNA (m) is recommended for the inhibition of GGCT 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 GGCT gene expression knockdown using RT-PCR Primer: GGCT (m)-PR: sc-140604-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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