SANTA CRUZ BIOTECHNOLOGY, INC.

GOT1L1 siRNA (m): sc-145675

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The Power to Question

BACKGROUND

GOT1L1, Glutamate oxaloacetate transaminase 1-like protein 1, is a 421 amino acid member of the class-I pyridoxal-phosphate-dependent aminotransferase family. Similar to glutamate-oxaloacetate transaminase (GOT1), GOT1L1 is found primarily as a homodimer in the cytoplasmic space but also has mitochondrial and chloroplastic isozymes. GOT1L1 transaminates 2-oxoglutarate with L-aspartate to yield oxaloacetate and L-glutamate. This reaction requires a pyridoxal phosphate cofactor to occur. The GOT1L1 peptidase is predominately expressed in the liver and serum levels of this protein can be used as an indicator of liver disease. Also, elevated glutamate concentrations in the brain interstitial fluids can lead to pathological brain conditions. The glutamate-scavenging properties of these aminotranferase type enzymes likely prevent glutamate excitotoxicity and the long-lasting neurological deficits seen after stroke.

REFERENCES

1. Dunathan, H.C. and Voet, J.G. 1974. Stereochemical evidence for the evolution of pyridoxal-phosphate enzymes of various function from a common ancestor. Proc. Natl. Acad. Sci. USA 71: 3888-3891.
2. Chern, C.J. 1976. Localization of the structural genes for hexokinase-1 and inorganic pyrophosphatase on region (pter→q24) of human chromosome 10. Cytogenet. Cell Genet. 17: 338-342.
3. Oboh, G. 2006. Tropical green leafy vegetables prevent garlic-induced hepatotoxicity in the rat. J. Med. Food 9: 545-551.
4. Zlotnik, A., Gurevich, B., Tkachov, S., Maoz, I., Shapira, Y. and Teichberg, V.I. 2007. Brain neuroprotection by scavenging blood glutamate. Exp. Neurol. 203: 213-220.
5. Uchiyama, K., Mori, K., Tabuse, K., Ueno, M., Ozawa, S., Nakase, T., Kawai, M., Tani, M., Tanimura, H. and Yamaue, H. 2008. Assessment of liver function for successful hepatectomy in patients with hepatocellular carcinoma with impaired hepatic function. J. Hepatobiliary Pancreat. Surg. 15: 596-602.
6. Marosi, M., Fuzik, J., Nagy, D., Rákos, G., Kis, Z., Vécsei, L., Toldi, J., Ruban-Matuzani, A., Teichberg, V.I. and Farkas, T. 2009. Oxaloacetate restores the long-term potentiation impaired in rat hippocampus CA1 region by 2-vessel occlusion. Eur. J. Pharmacol. 604: 51-57.

CHROMOSOMAL LOCATION

Genetic locus: Got1l1 (mouse) mapping to 8 A2.

PRODUCT

GOT1L1 siRNA (m) is a target-specific 19-25 nt siRNA 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 GOT1L1 shRNA Plasmid (m): sc-145675-SH and GOT1L1 shRNA (m) Lentiviral Particles: sc-145675-V as alternate gene silencing products.

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

GOT1L1 siRNA (m) is recommended for the inhibition of GOT1L1 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 GOT1L1 gene expression knockdown using RT-PCR Primer: GOT1L1 (m)-PR: sc-145675-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.