SANTA CRUZ BIOTECHNOLOGY, INC.

CBG siRNA (h): sc-105182

BACKGROUND

CBG (cytosolic β-glucosidase) is a monomeric enzyme involved in the absorption and metabolism of flavonoid glucosides. CBG is found predominately in the liver, but is also located in tissues such as spleen, small intestine and kidney. Through its catalytic activity, CBG is able to hydrolyze a variety of glycosides including phytoestrogens, cyanogens and flavonols. Although its catalytic activity extends to many dietary flavonoids, CBG has increased specificity for hydrophobic aglycones such as β-D-glucoside and β-D-galactoside. Hydrolysis is inhibited by sodium taurocholate and glucosylsphingosine, both of which regulate CBG enzymatic activity. Deficiencies in CBG have been implicated in Gaucher's disease, a lysosomal storage disease that causes a build up of fatty material in the spleen, liver, lung and kidneys.

REFERENCES

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2. Hays, W.S., et al. 1996. Primary structure of the cytosolic β-glucosidase of guinea pig liver. Biochem. J. 319: 829-837.
3. Lambert, N., et al. 2000. Purification of cytosolic β-glucosidase from pig liver and its reactivity towards flavonoid glycosides. Biochim. Biophys. Acta 1435: 110-116.
4. Berrin, J.G., et al. 2002. Functional expression of human liver cytosolic β-glucosidase in *Pichia pastoris*. Insights into its role in the metabolism of dietary glucosides. Eur. J. Biochem. 269: 249-258.
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6. de Graaf, M., et al. 2003. Cytosolic β-glycosidases for activation of glycoside prodrugs of daunorubicin. Biochem. Pharmacol. 65: 1875-1881.
7. Beutler, E., et al. 2004. Mutations in the gene encoding cytosolic β-glucosidase in Gaucher disease. J. Lab. Clin. Med. 144: 65-68.
8. Fleury, D., et al. 2007. Expression, purification, characterization and crystallization of a recombinant human cytosolic β-glucosidase produced in insect cells. Protein Expr. Purif. 52: 96-103.

CHROMOSOMAL LOCATION

Genetic locus: GBA3 (human) mapping to 4p15.2.

PRODUCT

CBG 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 CBG shRNA Plasmid (h): sc-105182-SH and CBG shRNA (h) Lentiviral Particles: sc-105182-V as alternate gene silencing products.

For independent verification of CBG (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-105182A, sc-105182B and sc-105182C.

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

CBG siRNA (h) is recommended for the inhibition of CBG 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CBG gene expression knockdown using RT-PCR Primer: CBG (h)-PR: sc-105182-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.