SANTA CRUZ BIOTECHNOLOGY, INC.

GLCE (K-13): sc-162869

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

GLCE (glucuronic acid epimerase), also known as HSEPI (heparin/heparan sulfate:glucuronic acid C5-epimerase) or D-glucuronyl C5-epimerase, is a single-pass type II membrane protein that is part of the Golgi apparatus and, through its enzymatic activity, is essential for proper biological function of heparan sulphate (HS). GLCE epimerizes D-glucuronic acid into L-iduronic acid of HS, thus changing the specificity of HS and allowing it to bind to cytokines and growth factors. GLCE is a target of the β-catenin-TCF4 transactivation complex; an essential component in the Wnt/APC/β-catenin signaling pathway that is upregulated in colon carcinoma cells. The enzymatic activity of GLCE is enhanced by overexpression of β-catenin-TCF4, suggesting a possible role for GLCE in the dysregulation of proper signaling pathways; a dysregulation that leads to the development of human epithelial tumors.

REFERENCES

1. Hondmann, D.H., Busink, R., Witteveen, C.F. and Visser, J. 1991. Glycerol catabolism in *Aspergillus nidulans*. J. Gen. Microbiol. 137: 629-636.
2. Pellicer, M.T., Badía, J., Aguilar, J. and Baldomà, L. 1996. GLC locus of *Escherichia coli:* characterization of genes encoding the subunits of glycolate oxidase and the GLC regulator protein. J. Bacteriol. 178: 2051-2059.
3. Li, J., Hagner-McWhirter, A., Kjellen, L., Palgi, J., Jalkanen, M. and Lindahl, U. 1997. Biosynthesis of heparin/heparan sulfate. cDNA cloning and expression of D-glucuronyl C5-epimerase from bovine lung. J. Biol. Chem. 272: 28158-28163.
4. Li, J.P., Gong, F., El Darwish, K., Jalkanen, M. and Lindahl, U. 2001. Characterization of the D-glucuronyl C5-epimerase involved in the biosynthesis of heparin and heparan sulfate. J. Biol. Chem. 276: 20069-20077.
5. Tiedemann, K., Larsson, T., Heinegard, D. and Malmström, A. 2001. The glucuronyl C5-epimerase activity is the limiting factor in the dermatan sulfate biosynthesis. Arch. Biochem. Biophys. 391: 65-71.
6. Li, J.P., Gong, F., Hagner-McWhirter, A., Forsberg, E., Abrink, M., Kisilevsky, R., Zhang, X. and Lindahl, U. 2003. Targeted disruption of a murine glucuronyl C5-epimerase gene results in heparan sulfate lacking L-iduronic acid and in neonatal lethality. J. Biol. Chem. 278: 28363-28366.
7. Ghiselli, G. and Agrawal, A. 2005. The human D-glucuronyl C5-epimerase gene is transcriptionally activated through the β-catenin-TCF4 pathway. Biochem. J. 390: 493-499.
8. Ghiselli, G. and Farber, S.A. 2005. D-glucuronyl C5-epimerase acts in dorso-ventral axis formation in zebrafish. BMC Dev. Biol. 5: 19-19.
9. Grigorieva, E., Eshchenko, T., Rykova, V.I., Chernakov, A., Zabarovsky, E. and Sidorov, S.V. 2008. Decreased expression of human D-glucuronyl C5-epimerase in breast cancer. Int. J. Cancer 122: 1172-1176.

CHROMOSOMAL LOCATION

Genetic locus: GLCE (human) mapping to 15q23; Glce (mouse) mapping to 9 B.

SOURCE

GLCE (K-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of GLCE of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-162869 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GLCE (K-13) is recommended for detection of GLCE of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

GLCE (K-13) is also recommended for detection of GLCE in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GLCE siRNA (h): sc-90153, GLCE siRNA (m): sc-145418, GLCE shRNA Plasmid (h): sc-90153-SH, GLCE shRNA Plasmid (m): sc-145418-SH, GLCE shRNA (h) Lentiviral Particles: sc-90153-V and GLCE shRNA (m) Lentiviral Particles: sc-145418-V.

Molecular Weight of GLCE: 70 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

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