

β-glucosidase 2 (G-15): sc-160379

BACKGROUND

β-glucosidase 2, also known as non-lysosomal glucosylceramidase (NLGase), Glucosylceramidase 2, GBA2 or AD035, is a 927 amino acid non-lysosomal glucosylceramidase that catalyzes glucosylceramide into ceramide and free glucose, and is suggested to play a role in carbohydrate transport and metabolism. A single-pass membrane protein, β-glucosidase 2 exists as three alternatively spliced isoforms that are widely expressed but found at highest levels in placenta, kidney, brain, skeletal muscle, kidney and heart, with low levels found in liver. β-glucosidase 2 activity has been linked to sphingomyelin generation and prevention of glycolipid accumulation. The gene encoding β-glucosidase 2 maps to human chromosome 9, which houses over 900 genes and comprises nearly 4% of the human genome.

REFERENCES

1. Gruters, R.A., Neefjes, J.J., Tersmette, M., de Goede, R.E., Tulp, A., Huisman, H.G., Miedema, F. and Ploegh, H.L. 1987. Interference with HIV-induced syncytium formation and viral infectivity by inhibitors of trimming glucosidase. *Nature* 330: 74-77.
2. Matern, H., Heinemann, H., Legler, G. and Matern, S. 1997. Purification and characterization of a microsomal bile acid β-glucosidase from human liver. *J. Biol. Chem.* 272: 11261-11267.
3. Nagase, T., Kikuno, R., Nakayama, M., Hirose, M. and Ohara, O. 2000. Prediction of the coding sequences of unidentified human genes. XVIII. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. *DNA Res.* 7: 273-281.
4. Matern, H., Boermans, H., Lottspeich, F. and Matern, S. 2001. Molecular cloning and expression of human bile acid β-glucosidase. *J. Biol. Chem.* 276: 37929-37933.
5. Yildiz, Y., Matern, H., Thompson, B., Allegood, J.C., Warren, R.L., Ramirez, D.M., Hammer, R.E., Hamra, F.K., Matern, S. and Russell, D.W. 2006. Mutation of β-glucosidase 2 causes glycolipid storage disease and impaired male fertility. *J. Clin. Invest.* 116: 2985-2994.
6. Boot, R.G., Verhoek, M., Donker-Koopman, W., Strijland, A., van Marle, J., Overkleeft, H.S., Wennekes, T. and Aerts, J.M. 2007. Identification of the non-lysosomal glucosylceramidase as β-glucosidase 2. *J. Biol. Chem.* 282: 1305-1312.
7. Online Mendelian Inheritance in Man, OMIM[™]. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 609471. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
8. Farrer, M.J., Williams, L.N., Algom, A.A., Kachergus, J., Hulihan, M.M., Ross, O.A., Rajput, A., Papapetropoulos, S., Mash, D.C. and Dickson, D.W. 2009. Glucosidase-β variations and Lewy body disorders. *Parkinsonism Relat. Disord.* 15: 414-416.

CHROMOSOMAL LOCATION

Genetic locus: GBA2 (human) mapping to 9p13.3; Gba2 (mouse) mapping to 4 B1.

SOURCE

β-glucosidase 2 (G-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an extracellular domain of β-glucosidase 2 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-160379 P, (100 μg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

β-glucosidase 2 (G-15) is recommended for detection of β-glucosidase 2 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); non cross-reactive with β-glucosidase.

β-glucosidase 2 (G-15) is also recommended for detection of β-glucosidase 2 in additional species, including equine.

Suitable for use as control antibody for β-glucosidase 2 siRNA (h): sc-92737, β-glucosidase 2 siRNA (m): sc-145444, β-glucosidase 2 shRNA Plasmid (h): sc-92737-SH, β-glucosidase 2 shRNA Plasmid (m): sc-145444-SH, β-glucosidase 2 shRNA (h) Lentiviral Particles: sc-92737-V and β-glucosidase 2 shRNA (m) Lentiviral Particles: sc-145444-V.

Molecular Weight of β-glucosidase 2: 105 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.