SANTA CRUZ BIOTECHNOLOGY, INC.

β-glucuronidase (H-300): sc-25827

BACKGROUND

The enzyme β-glucuronidase catalyzes the conversion of β-D-glucuronoside and water to an alcohol and D-glucuronate. Deficiency of β-glucuronidase is the cause of the human lysosomal storage disorder mucopolysaccharidosis type VII (MPS VII). Specifically, two residues appear important for catalytic activity: Glu 451 and Glu 540. Mutations at these sites affect the overall structure of the protein, which normally consists of a homotetramer with each promoter including a jelly roll barrel, an immunoglobulin constant domain and a TIM barrel. Regulation of β-glucuronidase activity may play a role in tumorigenesis and the invasiveness of a number of cancers, and is also an important factor in the development of functional prodrugs that require the cleavage of an active cytostatic by endogenous enzymes for antitumor activity.

REFERENCES

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2. Gupta, G.S. and Singh, G.P. 1983. Isolation and characterization of the major form of β-glucuronidase from human seminal plasma. Biochim. Biophys. Acta 748: 398-404.
3. Varma, R., et al. 1983. β-glucuronidase in sera of patients with epileptic seizure activity, diabetes and some other disease states. Neurosci. Lett. 39: 105-111.
4. Guise, K.S., et al. 1985. Isolation and expression in *Escherichia coli* of a cDNA clone encoding human β-glucuronidase. Gene 34: 105-110.
5. Watson, G., et al. 1985. Properties of rat and mouse β-glucuronidase mRNA and cDNA, including evidence for sequence polymorphism and genetic regulation of mRNA levels. Gene 36: 15-25.
6. Jain, S., et al. 1996. Structure of human β-glucuronidase reveals candidate lysosomal targeting and active-site motifs. Nat. Struct. Biol. 3: 375-381.
7. Vervoort, R., et al. 1998. Low β-glucuronidase enzyme activity and mutations in the human β-glucuronidase gene in mild mucopolysaccharidosis type VII, pseudodeficiency and a heterozygote. Hum. Genet. 102: 69-78.
8. Kurokawa, H., et al. 2003. Heparanase and tumor invasion patterns in human oral squamous cell carcinomaxenografts. Cancer Sci. 94: 277-285.
9. Grube, M., et al. 2003. Verapamil regulates activity and mRNA-expression of human β-glucuronidase in Hep G2 cells. Naunyn Schmiedebergs Arch. Pharmacol. 368: 463-469.

CHROMOSOMAL LOCATION

Genetic locus: GUSB (human) mapping to 7q11.21; Gusb (mouse) mapping to 5 G1.3.

SOURCE

β-glucuronidase (H-300) is a rabbit polyclonal antibody raised against amino acids 352-651 mapping at the C-terminus of β-glucuronidase 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.

APPLICATIONS

β-glucuronidase (H-300) is recommended for detection of β-glucuronidase of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

Suitable for use as control antibody for β-glucuronidase siRNA (h): sc-44458, β-glucuronidase siRNA (m): sc-44459, β-glucuronidase shRNA Plasmid (h): sc-44458-SH, β-glucuronidase shRNA Plasmid (m): sc-44459-SH, β-glucuronidase shRNA (h) Lentiviral Particles: sc-44458-V and β-glucuronidase shRNA (m) Lentiviral Particles: sc-44459-V.

Molecular Weight of β-glucuronidase: 82 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209 or Hep G2 cell lysate: sc-2227.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Menendez, C., et al. 2011. Vascular deconjugation of quercetin glucuronide: the flavonoid paradox revealed? Mol. Nutr. Food Res. 55: 1780-1790.

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.