SANTA CRUZ BIOTECHNOLOGY, INC.

Galactose Mutarotase (H-7): sc-166304

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Galactose Mutarotase is a member of the aldose epimerase family and is involved in hexose metabolism. Through its catalytic activity, Galactose Mutarotase converts β-aldose to α-aldose on several sugars, including D-glucose, L-arabinose and D-xylose. Found in the cytoplasm of most cells, Galactose Mutarotase plays a key role in galactose metabolism by catalyzing the conversion of β-D-galactose to α-D-galactose. The enzyme contains two residues, Glu 304 and His 170, that are critical for catalysis, as well as His 96 and Asp 243, which are important for proper substrate recognition by the active site. No known diseases have been associated with mutations in the Galactose Mutarotase gene, although inhibition of Galactose Mutarotase activity could potentially be associated with a build-up of unmetabolized sugars during metabolism.

REFERENCES

1. Beebe, J.A. and Frey, P.A. 1998. Galactose Mutarotase: purification, characterization, and investigations of two important histidine residues. Biochemistry 37: 14989-14997.
2. Beebe, J.A., et al. 2003. Galactose Mutarotase: pH dependence of enzymatic mutarotation. Biochemistry 42: 4414-4420.
3. Thoden, J.B., et al. 2003. The catalytic mechanism of Galactose Mutarotase. Protein Sci. 12: 1051-1059.
4. Thoden, J.B., et al. 2004. Molecular structure of human Galactose Mutarotase. J. Biol. Chem. 279: 23431-23437.

CHROMOSOMAL LOCATION

Genetic locus: GALM (human) mapping to 2p22.1; Galm (mouse) mapping to 17 E3.

SOURCE

Galactose Mutarotase (H-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 291-319 near the C-terminus of Galactose Mutarotase of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Galactose Mutarotase (H-7) is available conjugated to agarose (sc-166304 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166304 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166304 PE), fluorescein (sc-166304 FITC), Alexa Fluor® 488 (sc-166304 AF488), Alexa Fluor® 546 (sc-166304 AF546), Alexa Fluor® 594 (sc-166304 AF594) or Alexa Fluor® 647 (sc-166304 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166304 AF680) or Alexa Fluor® 790 (sc-166304 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166304 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

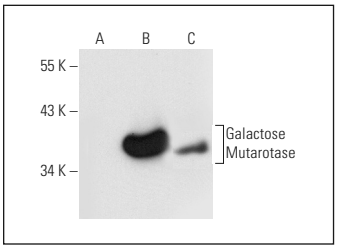
Galactose Mutarotase (H-7) is recommended for detection of Galactose Mutarotase of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 Galactose Mutarotase siRNA (h): sc-72266, Galactose Mutarotase siRNA (m): sc-72267, Galactose Mutarotase shRNA Plasmid (h): sc-72266-SH, Galactose Mutarotase shRNA Plasmid (m): sc-72267-SH, Galactose Mutarotase shRNA (h) Lentiviral Particles: sc-72266-V and Galactose Mutarotase shRNA (m) Lentiviral Particles: sc-72267-V.

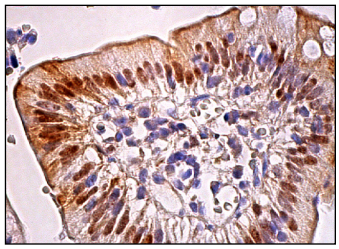
Molecular Weight of Galactose Mutarotase: 42 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, HeLa whole cell lysate: sc-2200 or Galactose Mutarotase (h): 293T Lysate: sc-112214.

DATA



Galactose Mutarotase (H-7): sc-166304. Western blot analysis of Galactose Mutarotase expression in non-transfected 293T: sc-117752 (**A**), human Galactose Mutarotase transfected 293T: sc-112214 (**B**) and Hep G2 (**C**) whole cell lysates.



Galactose Mutarotase (H-7): sc-166304. Immunoperoxidase staining of formalin fixed, paraffin-embedded human small intestine tissue showing nuclear and cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Xing, J., et al. 2018. Hypoxia induces senescence of bone marrow mesenchymal stem cells via altered gut microbiota. Nat. Commun. 9: 2020.

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 for detailed protocols and support products.