SANTA CRUZ BIOTECHNOLOGY, INC.

GALE (C-4): sc-390407

The Power to Question

BACKGROUND

GALE, also known as galactowaldenase, UDP-galactose-4-epimerase or SDR1E1, is a 348 amino acid protein that functions as the third enzyme in the Leloir pathway of galactose metabolism. A member of the sugar epimerase family, GALE exists as a homodimer, binds FAD as a cofactor and catalyzes the epimerization of UDP-N-acetylglucosamine to UDP-N-acetylgalactosamine and UDP-glucose to UDP-galactose. The gene encoding GALE maps to human chromosome 1p36.11 and mutations in this gene lead to the development of complex disorder known as epimerase-deficiency galactosemia (EDG) or galactosemia type 3, which is characterized by mental retardation, liver damage, cataracts and deafness.

REFERENCES

1. Reuser, A.J., et al. 1978. Biochemical, immunological, and cell genetic studies in glycogenosis type II. Am. J. Hum. Genet. 30: 132-143.
2. Holton, J.B., et al. 1981. Galactosaemia: a new severe variant due to uridine diphosphate galactose-4-epimerase deficiency. Arch. Dis. Child. 56: 885-887.
3. Henderson, M.J., et al. 1983. Further observations in a case of uridine diphosphate galactose-4-epimerase deficiency with a severe clinical presentation. J. Inherit. Metab. Dis. 6: 17-20.
4. Kingsley, D.M., et al. 1986. Reversible defects in O-linked glycosylation and LDL receptor expression in a UDP-Gal/UDP-GalNAc 4-epimerase deficient mutant. Cell 44: 749-759.

CHROMOSOMAL LOCATION

Genetic locus: GALE (human) mapping to 1p36.11; Gale (mouse) mapping to 4 D3.

SOURCE

GALE (C-4) is a mouse monoclonal antibody raised against amino acids 181-345 mapping near the N-terminus of GALE 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.

GALE (C-4) is available conjugated to agarose (sc-390407 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-390407 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-390407 PE), fluorescein (sc-390407 FITC), Alexa Fluor® 488 (sc-390407 AF488), Alexa Fluor® 546 (sc-390407 AF546), Alexa Fluor® 594 (sc-390407 AF594) or Alexa Fluor® 647 (sc-390407 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-390407 AF680) or Alexa Fluor® 790 (sc-390407 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

STORAGE

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

APPLICATIONS

GALE (C-4) is recommended for detection of GALE 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 GALE siRNA (h): sc-78950, GALE siRNA (m): sc-145310, GALE shRNA Plasmid (h): sc-78950-SH, GALE shRNA Plasmid (m): sc-145310-SH, GALE shRNA (h) Lentiviral Particles: sc-78950-V and GALE shRNA (m) Lentiviral Particles: sc-145310-V.

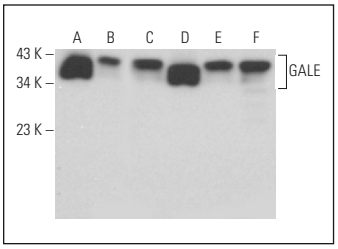
Molecular Weight of GALE: 38 kDa.

Positive Controls: Neuro-2A whole cell lysate: sc-364185, U-251-MG whole cell lysate: sc-364176 or Caki-1 cell lysate: sc-2224.

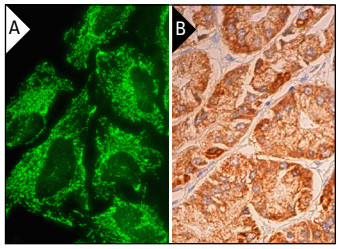
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



GALE (C-4): sc-390407. Western blot analysis of GALE expression in Caki-1 (**A**), Neuro-2A (**B**), U-251-MG (**C**), Hep G2 (**D**), c4 (**E**) and C2C12 (**F**) whole cell lysates.



GALE (C-4): sc-390407. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human upper stomach tissue showing cytoplasmic staining of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Schumann, B., et al. 2020. Bump-and-hole engineering identifies specific substrates of glycosyltransferases in living cells. Mol. Cell 78: 824-834.e15.

RESEARCH USE

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