SANTA CRUZ BIOTECHNOLOGY, INC.

# GALE (C-4): sc-390407

SANTA CRUZ BIOTECHNOLOGY

*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.



## 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.

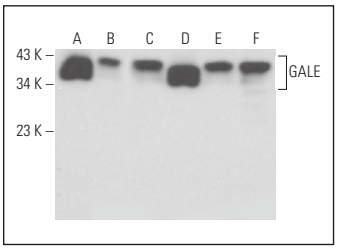
Molecular Weight of GALE: 38 kDa.

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

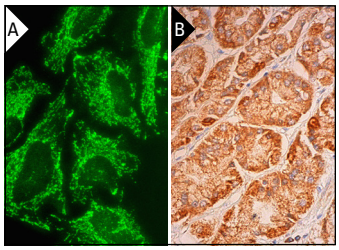
## RECOMMENDED SUPPORT REAGENTS

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.