SANTA CRUZ BIOTECHNOLOGY, INC.

Ly-GDI (D-7): sc-271108

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The Ras superfamily of small GTP-binding proteins are critical mediators of diverse cell signaling pathways, including those leading to proliferation, cytoskeletal organization and secretion. The counter-conversion of the active GTP-bound form of these proteins to their inactive GDP-bound form is influenced by two types of regulatory proteins: those that alter the intrinsic GTPase activity of the GTP-binding proteins and those that alter the rate of GDP/GTP exchange. Guanine nucleotide-releasing factors (GRFs) increase the GDP dissociation rate, while GDP-dissociation inhibitors (GDIs) decrease the dissociation rate. The Rho GDI subfamily is composed of Rho GDIα, Ly-GDI (also known as Rho GDIβ and previously known as GDI/D4) and Rho GDIγ. The Rho GDI proteins interact with and have varying affinities for several Ras-like GTP binding proteins, including Rho A, Rho B, Rac and Cdc42. Ly-GDI is expressed only in hematopoietic cells, predominantly in B and T lymphocyte cell lines.

REFERENCES

1. Trahey, M. and McCormick, F. 1987. A cytoplasmic protein stimulates normal N-Ras p21 GTPase, but does not affect oncogenic mutants. Science 238: 542-545.
2. Bourne, H.R., et al. 1990. The GTPase superfamily: a conserved switch for diverse cell functions. Nature 348: 125-132.

CHROMOSOMAL LOCATION

Genetic locus: ARHGDIB (human) mapping to 12p12.3; Arhgdib (mouse) mapping to 6 G1.

SOURCE

Ly-GDI (D-7) is a mouse monoclonal antibody raised against amino acids 1-201 representing full length Ly-GDI 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.

APPLICATIONS

Ly-GDI (D-7) is recommended for detection of Ly-GDI 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 Ly-GDI siRNA (h): sc-35826, Ly-GDI siRNA (m): sc-35827, Ly-GDI shRNA Plasmid (h): sc-35826-SH, Ly-GDI shRNA Plasmid (m): sc-35827-SH, Ly-GDI shRNA (h) Lentiviral Particles: sc-35826-V and Ly-GDI shRNA (m) Lentiviral Particles: sc-35827-V.

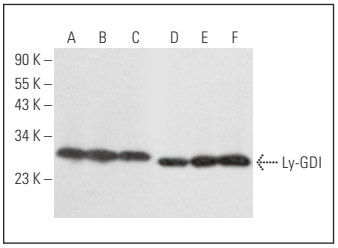
Molecular Weight of Ly-GDI: 27 kDa.

Positive Controls: BJAB whole cell lysate: sc-2207, NAMALWA cell lysate: sc-2234 or Jurkat whole cell lysate: sc-2204.

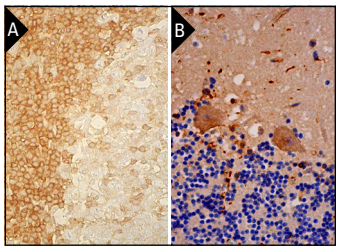
STORAGE

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

DATA



Ly-GDI (D-7): sc-271108. Western blot analysis of Ly-GDI expression in K-562 (**A**), Jurkat (**B**), HL-60 (**C**), SK-BR-3 (**D**), BJAB (**E**) and NAMALWA (**F**) whole cell lysates.



Ly-GDI (D-7): sc-271108. Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing cytoplasmic and membrane staining of cells in germinal center and cells in non-germinal center. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214. Detected with m-IgG Fc BP-B: sc-533652 and ImmunoCruz® ABC Kit: sc-516216 (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic staining of Purkinje cells and cells in molecular layer (**B**).

SELECT PRODUCT CITATIONS

1. Yu, Y., et al. 2018. XIAP overexpression promotes bladder cancer invasion *in vitro* and lung metastasis *in vivo* via enhancing nucleolin-mediated Rho-GDIβ mRNA stability. Int. J. Cancer 142: 2040-2055.
2. Baker, M.J., et al. 2020. P-REX1-independent, calcium-dependent RAC1 hyperactivation in prostate cancer. Cancers 12: 480.
3. He, M., et al. 2020. Melatonin antagonizes nickel-induced aerobic glycolysis by blocking ROS-mediated HIF-1α/miR210/ISCU axis activation. Oxid. Med. Cell. Longev. 2020: 5406284.
4. Gamage, S., et al. 2022. CARD9 mediates pancreatic islet β-cell dysfunction under the duress of hyperglycemic stress. Cell. Physiol. Biochem. 56: 120-137.
5. Gleason, N. and Kowluru, A. 2024. Hyperglycemic stress induces expression, degradation, and nuclear association of Rho GDP dissociation inhibitor 2 (RhoGDIβ) in pancreatic β-cells. Cells 13: 272.

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.

CONJUGATES

See **Ly-GDI (G-12): sc-376473** for Ly-GDI antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.