SANTA CRUZ BIOTECHNOLOGY, INC.

G2A (G-5): sc-137112

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

G2A (G_2 accumulation) is a seven transmembrane G protein-coupled receptor that is upregulated in response to DNA damage and stress. G2A is predominantly expressed in hematopoietic tissues and in hematopoietic stem cells, and it is more highly detected in pro-B cells, while lower expression is observed in immature B cells and pre-B cells. G2A is expressed throughout T cell maturation, and it is further increased in response to T-cell activation. Ectopic expression of a G2A fusion protein in NIH/3T3 fibroblasts induces a cell cycle arrest that is consistent with a block at the G_2/M transition. G2A is also able to attenuate the proliferative effects of Bcr-Abl, a chimeric tyrosine kinase oncogene, suggesting that G2A possesses anti-oncogenic properties. The amino acid sequence of G2A contains a destruction box motif that is consistently observed in cyclins, where it is required for ubiquitination and proteolytic degradation. G2A belongs to the lysophospholipid receptor subfamily and is considered a high affinity receptor for lysophosphatidylcholine (LPC).

REFERENCES

1. Weng, Z., et al. 1998. A DNA damage and stress inducible G protein-coupled receptor blocks cells in G_2/M. Proc. Natl. Acad. Sci. USA 95: 12334-12339.
2. Zohn, I.E., et al. 2000. G2A is an oncogenic G protein-coupled receptor. Oncogene 19: 3866-3877.
3. Kabarowski, J.H., et al. 2001. Lysophosphatidylcholine as a ligand for the immunoregulatory receptor G2A. Science 293: 702-705.

CHROMOSOMAL LOCATION

Genetic locus: GPR132 (human) mapping to 14q32.33; Gpr132 (mouse) mapping to 12 F1.

SOURCE

G2A (G-5) is a mouse monoclonal antibody raised against amino acids 311-380 mapping within a C-terminal cytoplasmic domain of G2A of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

G2A (G-5) is available conjugated to agarose (sc-137112 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-137112 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137112 PE), fluorescein (sc-137112 FITC), Alexa Fluor® 488 (sc-137112 AF488), Alexa Fluor® 546 (sc-137112 AF546), Alexa Fluor® 594 (sc-137112 AF594) or Alexa Fluor® 647 (sc-137112 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137112 AF680) or Alexa Fluor® 790 (sc-137112 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

G2A (G-5) is recommended for detection of G2A 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 G2A siRNA (h): sc-43776, G2A siRNA (m): sc-44371, G2A shRNA Plasmid (h): sc-43776-SH, G2A shRNA Plasmid (m): sc-44371-SH, G2A shRNA (h) Lentiviral Particles: sc-43776-V and G2A shRNA (m) Lentiviral Particles: sc-44371-V.

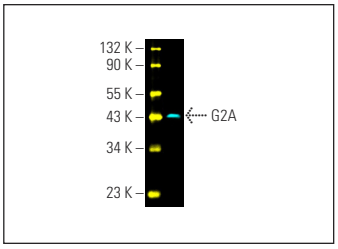
Molecular Weight of G2A: 42-46 kDa.

Positive Controls: rat skeletal muscle extract: sc-364810.

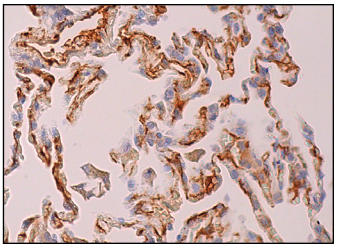
RECOMMENDED SUPPORT REAGENTS

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



G2A (G-5) Alexa Fluor® 647: sc-137112 AF647. Direct fluorescent western blot analysis of G2A expression in rat skeletal muscle tissue extract. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker™ MW Tag-Alexa Fluor® 488: sc-516790.



G2A (G-5): sc-137112. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lung tissue showing membrane staining of pneumocytes.

SELECT PRODUCT CITATIONS

1. Yi, C., et al. 2022. Activation of orphan receptor GPR132 induces cell differentiation in acute myeloid leukemia. Cell Death Dis. 13: 1004.

RESEARCH USE

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