SANTA CRUZ BIOTECHNOLOGY, INC.

G2A (M-70): sc-50310

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

G2A (for 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.

REFERENCES

1. Bedi, A., et al. 1995. BCR-ABL-mediated inhibition of apoptosis with delay of G_2/M transition after DNA damage: a mechanism of resistance to multiple anticancer agents. Blood 86:1148-1158.
2. Allday, M.J., et al. 1995. DNA damage in human B cells can induce apoptosis, proceeding from G_1/S when p53 is transactivation competent and G_2/M when it is transactivation defective. EMBO J. 14: 4994-5005.
3. Hochstrasser, M., et al. 1996. Ubiquitin-dependent protein degradation. Annu. Rev. Genet. 30: 405-439.
4. 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.
5. Shimizu, A., et al. 1998. Cyclin G contributes to G_2/M arrest of cells in response to DNA damage. Biochem. Biophys. Res. Commun. 242: 529-533.
6. Aguda, B.D., et al. 1999. A quantitative analysis of the kinetics of the G_2 DNA damage checkpoint system. Proc. Natl. Acad. Sci. USA 96: 11352-11357.

CHROMOSOMAL LOCATION

Genetic locus: Gpr132 (mouse) mapping to 12 F2.

SOURCE

G2A (M-70) is a rabbit polyclonal antibody raised against amino acids 313-382 mapping within a C-terminal cytoplasmic domain of G2A of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

G2A (M-70) is recommended for detection of G2A of mouse and rat origin by Western Blotting (starting dilution 1:200, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for G2A siRNA (m): sc-44371, G2A shRNA Plasmid (m): sc-44371-SH and G2A shRNA (m) Lentiviral Particles: sc-44371-V.

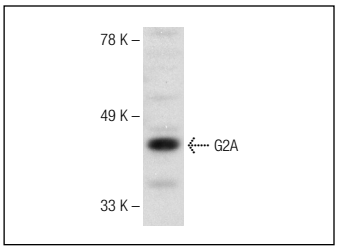
Molecular Weight of G2A: 42-46 kDa.

Positive Controls: PMJ2-PC whole cell lysate or rat skeletal muscle tissue extract: sc-364810.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



G2A (M-70): sc-50310. Western blot analysis of G2A expression in PMJ2-PC whole cell lysate.

RESEARCH USE

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