SANTA CRUZ BIOTECHNOLOGY, INC.

GADD 45β (K-21): sc-133606

BACKGROUND

Cell cycle progression is subject to arrest at G_1 and G_2 checkpoints in response to DNA damage, presumably to allow time for DNA repair prior to entry into S and M phase, respectively. The p53 tumor suppressor is required for one such G_1 checkpoint and functions to upregulate expression of GADD 45 and p21. GADD 45 binds both Cdks and PCNA, a protein involved in DNA replication and repair. GADD 45 stimulates DNA excision repair *in vitro* and in hibits entry of cells into S phase. Thus, it has been suggested that GADD 45 may serve as a link between the p53-dependent cell cycle checkpoint and DNA repair. GADD 45-like proteins, GADD 45β and GADD 45γ, have been shown to be induced by environmental stresses. GADD 45β and GADD 45γ are thought to induce p38/JNK activation via MEKK4 activation.

REFERENCES

1. Murray, A.W. 1992. Creative blocks: cell-cycle checkpoints and feedback controls. Nature 359: 599-604.
2. Kuerbitz, S.J., et al. 1992. Wild type p53 is a cell cycle checkpoint determinant following irradiation. Proc. Natl. Acad. Sci. USA 89: 7491-7495.
3. Kastan, M.B., et al. 1992. A mammalian cell cycle checkpoint pathway utilizing p53 and GADD 45 is defective in ataxia-telangiectasia. Cell 71: 587-597.
4. Marx, J. 1994. New link found between p53 and DNA repair. Science 266: 1321-1322.
5. Smith, M.L., et al. 1994. Interaction of the p53-regulated protein Gadd45 with proliferating cell nuclear antigen. Science 266: 1376-1379.
6. Takekawa, M., et al. 1998. A family of stress-inducible GADD 45-like proteins mediate activation of the stress-responsive MTK1/MEKK4 MAPKKK. Cell 95: 521-530.

CHROMOSOMAL LOCATION

Genetic locus: GADD45B (human) mapping to 19p13.3; Gadd45b (mouse) mapping to 10 C1.

SOURCE

GADD 45β (K-21) is an affinity purified rabbit polyclonal antibody raised against synthetic GADD 45β peptide of human origin.

PRODUCT

Each vial contains 50 µg IgG in 500 µl PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

APPLICATIONS

GADD 45β (K-21) is recommended for detection of GADD 45β of mouse, rat and human 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for GADD 45β siRNA (h): sc-37416, GADD 45β siRNA (m): sc-37417, GADD 45β shRNA Plasmid (h): sc-37416-SH, GADD 45β shRNA Plasmid (m): sc-37417-SH, GADD 45β shRNA (h) Lentiviral Particles: sc-37416-V and GADD 45β shRNA (m) Lentiviral Particles: sc-37417-V.

Molecular Weight (predicted) of GADD 45β: 18 kDa.

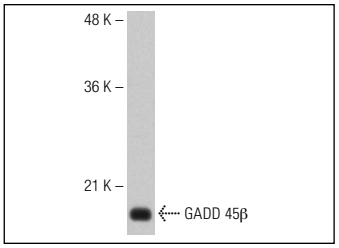
Molecular Weight (observed) of GADD 45β: 18-27 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

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).

DATA



GADD 45β (K-21): sc-133606. Western blot analysis of GADD 45β expression in Hep G2 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Gavin, D.P., et al. 2012. Growth arrest and DNA-damage-inducible, β (GADD45β)-mediated DNA demethylation in major psychosis. Neuropsychopharmacology 37: 531-542.

RESEARCH USE

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