SANTA CRUZ BIOTECHNOLOGY, INC.

GADD 45β (N-19): sc-8775

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 inhibits 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. Wildtype 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 GADD45 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., at 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 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of GADD 45β of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-8775 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

RESEARCH USE

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

APPLICATIONS

GADD 45β (N-19) 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), 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).

GADD 45β (N-19) is also recommended for detection of GADD 45β in additional species, including equine, canine, bovine and porcine.

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.

SELECT PRODUCT CITATIONS

1. Takekawa, M., et al. 2002. Smad-dependent GADD 45β expression mediates delayed activation of p38 MAP kinase by TGF-β. EMBO J. 21: 6473-6482.
2. Qiu, W., et al. 2004. Hypermethylation of growth arrest DNA damage-inducible gene 45 β promoter in human hepatocellular carcinoma. Am. J. Pathol. 165: 1689-1699.
3. Ungefroren, H., et al. 2005. Transforming growth factor-β (TGF-β) type I receptor/ALK5-dependent activation of the GADD45B gene mediates the induction of biglycan expression by TGF-β. J. Biol. Chem. 280: 2644-2652.
4. Wang, T., et al. 2005. Co-activation of ERK, NFκB, and GADD 45β in response to Ionizing radiation. J. Biol. Chem. 280: 12593-12601.
5. Moos, P.J., et al. 2011. Responses of human cells to ZnO nanoparticles: a gene transcription study. Metallomics 3: 1199-1211.

PROTOCOLS

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