

GADD 45 α (C-20): sc-792

BACKGROUND

It is well established that cell cycle progression is subject to arrest at G₁ and G₂ 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 G₁ checkpoint and functions to upregulate expression of GADD 45 and p21. p21 functions to inhibit the kinase activity of multiple Cdk complexes which may account for its suppression of cell growth. GADD 45 binds both Cdks and PCNA, a protein involved in DNA replication and repair. GADD 45 has been shown to stimulate DNA excision repair *in vitro* and to inhibit entry of cells into S phase. Thus, it has been suggested that GADD 45 may serve as a link between p53-dependent cell cycle checkpoint and DNA repair.

REFERENCES

- Murray, A.W. 1992. Creative blocks: cell-cycle checkpoints and feedback controls. *Nature* 359: 599-604.
- 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.

CHROMOSOMAL LOCATION

Genetic locus: GADD45A (human) mapping to 1p31.3; Gadd45a (mouse) mapping to 6 C1.

SOURCE

GADD 45 α (C-20) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping at the C-terminus of GADD 45 α of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-792 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

GADD 45 α (C-20) is recommended for detection of GADD 45 α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

GADD 45 α (C-20) is also recommended for detection of GADD 45 α in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for GADD 45 α siRNA (h): sc-35440, GADD 45 α siRNA (m): sc-35439, GADD 45 α shRNA Plasmid (h): sc-35440-SH, GADD 45 α shRNA Plasmid (m): sc-35439-SH, GADD 45 α shRNA (h) Lentiviral Particles: sc-35440-V and GADD 45 α shRNA (m) Lentiviral Particles: sc-35439-V.

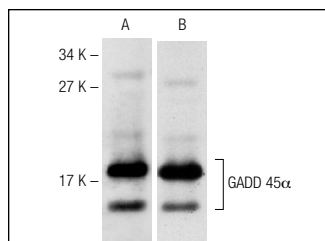
Molecular Weight of GADD 45 α : 18 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203.

STORAGE

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

DATA



Western blot analysis of COS cells transfected with GADD 45 α (A, B). Antibodies tested include GADD 45 α (C-20): sc-792 (A) and GADD 45 α (H-165): sc-797 (B).

SELECT PRODUCT CITATIONS

- Korabiowska, M., et al. 1999. Relation between two independent DNA-repair pathways in different groups of naevi. *In Vivo* 13: 243-246.
- Korabiowska, M., et al. 1999. Growth arrest DNA damage gene expression in naevi. *In Vivo* 13: 247-250.
- Korabiowska, M., et al. 1999. Loss of growth arrest DNA damage genes expression in oral melanomas. *In Vivo* 13: 483-485.
- Jiang, F., et al. 2003. G₂/M arrest by 1,25-dihydroxyvitamin D3 in ovarian cancer cells mediated through the induction of GADD45 via an exonic enhancer. *J. Biol. Chem.* 278: 48030-48040.
- O'Prey, J., et al. 2003. Effects of dietary flavonoids on major signal transduction pathways in human epithelial cells. *Biochem. Pharmacol.* 66: 2075-2088.
- Ge, L., et al. 2004. Involvement of c-Myc in growth inhibition of Hep 3B human hepatoma cells by a vitamin K analog. *J. Hepatol.* 41: 823-829.
- Jack, G.D., et al. 2007. Activated stress response pathways within multicellular aggregates utilize an autocrine component. *Cell. Signal.* 19: 772-781.
- Lin, H.H., et al. 2007. Apoptotic effect of 3,4-dihydroxybenzoic acid on human gastric carcinoma cells involving JNK/p38 MAPK signaling activation. *Int. J. Cancer* 120: 2306-2316.
- Peng, C.H., et al. 2007. Penta-acetyl geniposide-induced apoptosis involving transcription of NGF/p75 via MAPK-mediated AP-1 activation in C6 glioma cells. *Toxicology* 238: 130-139.
- Naidu, K.A., et al. 2007. P53 enhances ascorbyl stearate-induced G₂/M arrest of human ovarian cancer cells. *Anticancer Res.* 27: 3927-3934.
- Chiba, T., et al. 2009. Overexpression of FOXO1 in skeletal muscle does not alter longevity in mice. *Mech. Ageing Dev.* 130: 420-428.

RESEARCH USE

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