

GADD 45 α (C-6): sc-48394

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. Wildtype p53 is a cell cycle checkpoint determinant following irradiation. *Proc. Natl. Acad. Sci. USA* 89: 7491-7495.
- 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.
- Harper, J.W., et al. 1993. The p21 Cdk-interacting protein CIP1 is a potent inhibitor of G₁ cyclin-dependent kinases. *Cell* 75: 805-816.
- El-Deiry, W.S., et al. 1994. WAF1/CIP1 is induced in p53-mediated G₁ arrest and apoptosis. *Cancer Res.* 54: 1169-1174.
- Michieli, P., et al. 1994. Induction of WAF1/CIP1 by a p53-independent pathway. *Cancer Res.* 54: 3391-3395.
- Marx, J. 1994. New link found between p53 and DNA repair. *Science* 266: 1321-1322.

CHROMOSOMAL LOCATION

Genetic locus: GADD45A (human) mapping to 1p31.3.

SOURCE

GADD 45 α (C-6) is a mouse monoclonal antibody raised against amino acids 1-165 representing full length GADD 45 α of human origin.

PRODUCT

Each vial contains 200 μ g IgG1 kappa light chain 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.

PROTOCOLS

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

APPLICATIONS

GADD 45 α (C-6) is recommended for detection of GADD 45 α of human origin by Western Blotting (starting dilution 1:100, 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).

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

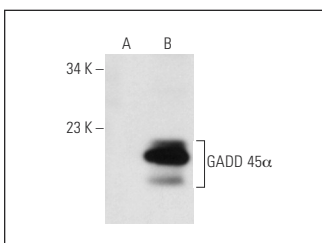
Molecular Weight of GADD 45 α : 18 kDa.

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

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



GADD 45 α (C-6): sc-48394. Western blot analysis of GADD 45 α expression in control (A) and GADD 45 α transfected COS (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Vorburger, S.A., et al. 2002. Role for the double-stranded RNA activated protein kinase PKR in E2F-1-induced apoptosis. *Oncogene* 21: 6277-6287.

RESEARCH USE

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



See **GADD 45 α (C-4): sc-6850** for GADD 45 α antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647.