SANTA CRUZ BIOTECHNOLOGY, INC.

# GADD 45α (A-3): sc-515568

SANTA CRUZ BIOTECHNOLOGY

*The Power to Question*

## BACKGROUND

It is well established that 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. 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


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 GADD 45 is defective in ataxia-telangiectasia. Cell 71: 587-597.
4. Harper, J.W., et al. 1993. The p21 Cdk-interacting protein CIP1 is a potent inhibitor of $G_1$ cyclin-dependent kinases. Cell 75: 805-816.
5. El-Deiry, W.S., et al. 1994. WAF1/CIP1 is induced in p53-mediated $G_1$ arrest and apoptosis. Cancer Res. 54: 1169-1174.
6. Michieli, P., et al. 1994. Induction of WAF1/CIP1 by a p53-independent pathway. Cancer Res. 54: 3391-3395.
7. 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; Gadd45a (mouse) mapping to 6 C1.

## SOURCE

GADD 45α (A-3) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 140-165 at the C-terminus of GADD 45α of human origin.

## PRODUCT

Each vial contains 200 µg $IgG_{2a}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-515568 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## RESEARCH USE

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

## APPLICATIONS

GADD 45α (A-3) is recommended for detection of GADD 45α of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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 GADD 45α siRNA (h): sc-35440, GADD 45α siRNA (m): sc-35439, GADD 45α siRNA (r): sc-270368, GADD 45α shRNA Plasmid (h): sc-35440-SH, GADD 45α shRNA Plasmid (m): sc-35439-SH, GADD 45α shRNA Plasmid (r): sc-270368-SH, GADD 45α shRNA (h) Lentiviral Particles: sc-35440-V, GADD 45α shRNA (m) Lentiviral Particles: sc-35439-V and GADD 45α shRNA (r) Lentiviral Particles: sc-270368-V.

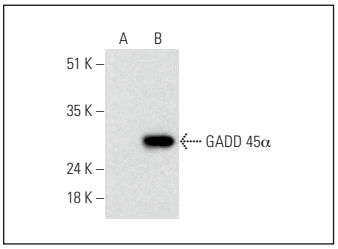
Molecular Weight of GADD 45α: 18 kDa.

Positive Controls: GADD 45α (h2): 293 Lysate: sc-175023.

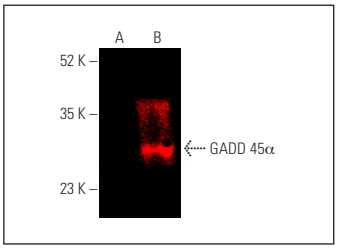
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA




GADD 45α (A-3): sc-515568. Western blot analysis of GADD 45α expression in non-transfected: sc-110760 (**A**) and human GADD 45α transfected: sc-175023 (**B**) 293 whole cell lysates.




GADD 45α (A-3): sc-515568. Near-Infrared western blot analysis of GADD 45α expression in non-transfected: sc-117752 (**A**) and human GADD 45α transfected: sc-175023 (**B**) 293T whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-$IgG_{2a}$ BP-CFL 790: sc-542740.

## STORAGE

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

CONJUGATES

See **GADD 45α (C-4): sc-6850** for GADD 45α antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.