SANTA CRUZ BIOTECHNOLOGY, INC.

GADD 45α (4T-27): sc-796

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.

CHROMOSOMAL LOCATION

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

SOURCE

GADD 45α (4T-27) is a mouse monoclonal antibody raised against amino acids 1-165 representing full length GADD 45α of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GADD 45α (4T-27) is available conjugated to agarose (sc-796 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-796 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-796 PE), fluorescein (sc-796 FITC), Alexa Fluor® 488 (sc-796 AF488), Alexa Fluor® 546 (sc-796 AF546), Alexa Fluor® 594 (sc-796 AF594) or Alexa Fluor® 647 (sc-796 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-796 AF680) or Alexa Fluor® 790 (sc-796 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

GADD 45α (4T-27) is recommended for detection of GADD 45α 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 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.

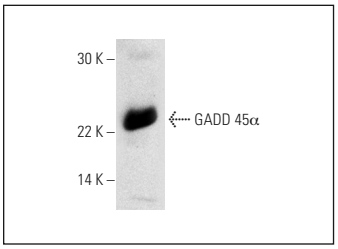
Molecular Weight of GADD 45α: 18 kDa.

Positive Controls: 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



GADD 45α (4T-27): sc-796. Western blot analysis of GADD 45α transfected COS cells.

SELECT PRODUCT CITATIONS

1. Smith, M.L., et al. 1994. Interaction of the p53-regulated protein GADD 45 with proliferating cell nuclear antigen. Science 266: 1376-1380.
2. Tudzarova-Trajkovska, S. and Wesierska-Gadek, J. 2003. Strong induction of p73 protein *in vivo* coincides with the onset of apoptosis in rat liver after treatment with the hepatocarcinogen N-nitrosomorpholine (NNM). J. Cell. Biochem. 90: 837-855.
3. Qin, J.Z., et al. 2004. p53-independent NOXA induction overcomes apoptotic resistance of malignant melanomas. Mol. Cancer Ther. 3: 895-902.
4. Zambon, A.C., et al. 2005. Gene expression patterns define key transcriptional events in cell-cycle regulation by cAMP and protein kinase A. Proc. Natl. Acad. Sci. USA 102: 8561-8566.
5. Miyake, Z., et al. 2007. Activation of MTK1/MEKK4 by GADD 45 through induced N-C dissociation and dimerization-mediated *trans* autophosphorylation of the MTK1 kinase domain. Mol. Cell. Biol. 27: 2765-2776.
6. Gérard, A.C., et al. 2008. Iodine deficiency induces a thyroid stimulating hormone-independent early phase of microvascular reshaping in the thyroid. Am. J. Pathol. 172: 748-760.
7. Palanichamy, J.K., et al. 2010. Silencing of integrated human papillomavirus-16 oncogenes by small interfering RNA-mediated heterochromatization. Mol. Cancer Ther. 9: 2114-2122.
8. Paruthiyil, S., et al. 2011. Estrogen receptor b causes a G_2 cell cycle arrest by inhibiting CDK1 activity through the regulation of cyclin B1, GADD45A, and BTG2. Breast Cancer Res. Treat. 129: 777-784.
9. Jung, I.L. 2014. Soluble extract from *Moringa oleifera* leaves with a new anticancer activity. PLoS ONE 9: e95492.
10. Sanchez, G., et al. 2016. A novel role for CARM1 in promoting nonsense-mediated mRNA decay: potential implications for spinal muscular atrophy. Nucleic Acids Res. 44: 2661-2676.

RESEARCH USE

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