

# GADD 45 $\alpha$ (C-4): sc-6850

## BACKGROUND

It is well established that cell cycle progression is subject to arrest at G<sub>1</sub> and G<sub>2</sub> 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<sub>1</sub> 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 45 $\alpha$  (C-4) is a mouse monoclonal antibody raised against amino acids 1-165 representing full length GADD 45 $\alpha$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

GADD 45 $\alpha$  (C-4) is available conjugated to agarose (sc-6850 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-6850 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-6850 PE), fluorescein (sc-6850 FITC), Alexa Fluor<sup>®</sup> 488 (sc-6850 AF488), Alexa Fluor<sup>®</sup> 546 (sc-6850 AF546), Alexa Fluor<sup>®</sup> 594 (sc-6850 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-6850 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-6850 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-6850 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, GADD 45 $\alpha$  (C-4) is available conjugated to Alexa Fluor<sup>®</sup> 405 (sc-6850 AF405, 200  $\mu$ g/ml), for IF, IHC(P) and FCM.

## APPLICATIONS

GADD 45 $\alpha$  (C-4) is recommended for detection of GADD 45 $\alpha$  of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1  $\mu$ g per 1 x 10<sup>6</sup> cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

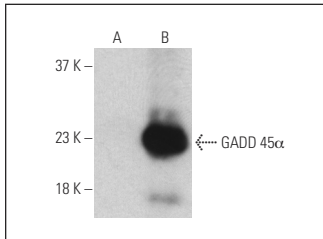
Suitable for use as control antibody for GADD 45 $\alpha$  siRNA (h): sc-35440, GADD 45 $\alpha$  siRNA (m): sc-35439, GADD 45 $\alpha$  siRNA (r): sc-270368, GADD 45 $\alpha$  shRNA Plasmid (h): sc-35440-SH, GADD 45 $\alpha$  shRNA Plasmid (m): sc-35439-SH, GADD 45 $\alpha$  shRNA Plasmid (r): sc-270368-SH, GADD 45 $\alpha$  shRNA (h) Lentiviral Particles: sc-35440-V, GADD 45 $\alpha$  shRNA (m) Lentiviral Particles: sc-35439-V and GADD 45 $\alpha$  shRNA (r) Lentiviral Particles: sc-270368-V.

Molecular Weight of GADD 45 $\alpha$ : 18 kDa.

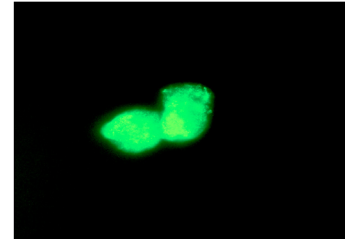
## STORAGE

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

## DATA



GADD 45 $\alpha$  (C-4) HRP: sc-6850 HRP. Direct western blot analysis of GADD 45 $\alpha$  expression in non-transfected: sc-110760 (A) and human GADD 45 $\alpha$  transfected: sc-175023 (B) 293 whole cell lysates.



GADD 45 $\alpha$  (C-4): sc-6850. Immunofluorescence staining of methanol-fixed GADD 45 $\alpha$ -transfected COS cells showing nuclear localization.

## SELECT PRODUCT CITATIONS

- Sengupta, P.S., et al. 2000. p53 and related proteins in epithelial ovarian cancer. *Eur. J. Cancer* 36: 2317-2328.
- Zhao, C.Y., et al. 2010. Rescue of p53 function by small-molecule RITA in cervical carcinoma by blocking E6-mediated degradation. *Cancer Res.* 70: 3372-3381.
- Xu, K., et al. 2011. Activating transcription factor 3 (ATF3) promotes sublytic C5b-9-induced glomerular mesangial cells apoptosis through up-regulation of GADD 45 $\alpha$  and KLF6 gene expression. *Immunobiology* 216: 871-881.
- Lau, R., et al. 2012. cIAP2 represses IKK $\alpha$ / $\beta$ -mediated activation of MDM2 to prevent p53 degradation. *Cell Cycle* 11: 4009-4019.
- Xiu, P., et al. 2014. Downregulating sCLU enhances the sensitivity of hepatocellular carcinoma cells to gemcitabine by activating the intrinsic apoptosis pathway. *Dig. Dis. Sci.* 59: 1798-1809.
- Wu, T., et al. 2016. Expression of ferritin light chain (FTL) is elevated in glioblastoma, and FTL silencing inhibits glioblastoma cell proliferation via the GADD 45/JNK pathway. *PLoS ONE* 11: e0149361.
- Grinkevich, V.V., et al. 2017. Ablation of key oncogenic pathways by RITA-reactivated p53 is required for efficient apoptosis. *Cancer Cell* 31: 724-726.
- Laphanuwat, P., et al. 2018. Cyclin D1 depletion interferes with oxidative balance and promotes cancer cell senescence. *J. Cell Sci.* 131: jcs214726.
- Feng, W., et al. 2020. DHX33 recruits Gadd45a to cause DNA demethylation and regulate a subset of gene transcription. *Mol. Cell. Biol.* 40: e00460-19.
- Kim, T.W., et al. 2021. PB01 suppresses radio-resistance by regulating ATR signaling in human non-small-cell lung cancer cells. *Sci. Rep.* 11: 12093.

## RESEARCH USE

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

Alexa Fluor<sup>®</sup> is a trademark of Molecular Probes, Inc., Oregon, USA