

# GADD 45 $\beta$ (G-11): sc-377311

## BACKGROUND

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. GADD 45 binds both Cdks and PCNA, a protein involved in DNA replication and repair. GADD 45 stimulates DNA excision repair *in vitro* and inhibits entry of cells into S phase. Thus, it has been suggested that GADD 45 may serve as a link between the p53-dependent cell cycle checkpoint and DNA repair. GADD 45-like proteins, GADD 45 $\beta$  and GADD 45 $\gamma$ , have been shown to be induced by environmental stresses. GADD 45 $\beta$  and GADD 45 $\gamma$  are thought to induce p38/JNK activation via MEKK4 activation.

## CHROMOSOMAL LOCATION

Genetic locus: GADD45B (human) mapping to 19p13.3; Gadd45b (mouse) mapping to 10 C1.

## SOURCE

GADD 45 $\beta$  (G-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 133-160 at the C-terminus of GADD 45 $\beta$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgM 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-377311 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

GADD 45 $\beta$  (G-11) is recommended for detection of GADD 45 $\beta$  of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

GADD 45 $\beta$  (G-11) is also recommended for detection of GADD 45 $\beta$  in additional species, including equine, canine and bovine.

Suitable for use as control antibody for GADD 45 $\beta$  siRNA (h): sc-37416, GADD 45 $\beta$  siRNA (m): sc-37417, GADD 45 $\beta$  siRNA (r): sc-270211, GADD 45 $\beta$  shRNA Plasmid (h): sc-37416-SH, GADD 45 $\beta$  shRNA Plasmid (m): sc-37417-SH, GADD 45 $\beta$  shRNA Plasmid (r): sc-270211-SH, GADD 45 $\beta$  shRNA (h) Lentiviral Particles: sc-37416-V, GADD 45 $\beta$  shRNA (m) Lentiviral Particles: sc-37417-V and GADD 45 $\beta$  shRNA (r) Lentiviral Particles: sc-270211-V.

Molecular Weight (predicted) of GADD 45 $\beta$ : 18 kDa.

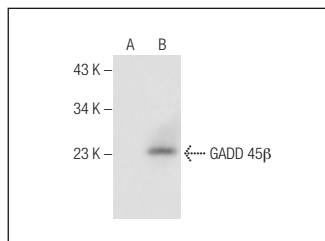
Molecular Weight (observed) of GADD 45 $\beta$ : 18-27 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227 or human GADD 45 $\beta$  transfected HEK293T whole cell lysate.

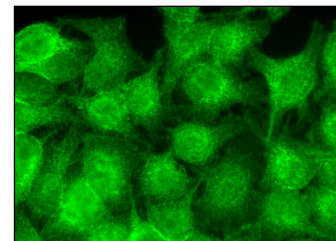
## STORAGE

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

## DATA



GADD 45 $\beta$  (G-11): sc-377311. Western blot analysis of GADD 45 $\beta$  expression in non-transfected (A) and human GADD 45 $\beta$  transfected (B) HEK293T whole cell lysates.



GADD 45 $\beta$  (G-11): sc-377311. Immunofluorescence staining of formalin-fixed HeLa cells showing nuclear and cytoplasmic localization.

## SELECT PRODUCT CITATIONS

- Martin, G.G., et al. 2017. Loss of fatty acid binding protein-1 alters the hepatic endocannabinoid system response to a high-fat diet. *J. Lipid Res.* 58: 2114-2126.
- Do, H., et al. 2019. TFAP2C increases cell proliferation by downregulating GADD45B and PMAIP1 in non-small cell lung cancer cells. *Biol. Res.* 52: 35.
- Wu, L., et al. 2021. Hepatic GADD 45 $\beta$  promotes hyperglycemia and glucose intolerance through DNA demethylation of PGC-1 $\alpha$ . *J. Exp. Med.* 218: e20201475.
- Hanrui, Y., et al. 2022. Intermittent leucine deprivation produces long-lasting improvement in Insulin sensitivity by increasing hepatic Gcn2 expression. *Diabetes* 71: 206-218.
- Singh, M., et al. 2022. Hydrogen sulfide mitigates skeletal muscle mitophagy-led tissue remodeling via epigenetic regulation of the gene writer and eraser function. *Physiol. Rep.* 10: e15422.
- Hu, H.L., et al. 2022. Single-cell transcriptomics identifies GADD 45 $\beta$  as a regulator of herpesvirus-reactivating neurons. *EMBO Rep.* 23: e53543.
- Zhang, L., et al. 2022. GADD 45 $\gamma$ , a novel antidepressant target, mediates metformin-induced neuronal differentiation of neural stem cells via DNA demethylation. *Stem Cells* 40: 59-73.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.