SANTA CRUZ BIOTECHNOLOGY, INC.

GADD 45γ (B-1): sc-393261

BACKGROUND

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. GADD 45 binds both Cdks and PCNA, a protein involved in DNA replication and repair. GADD 45 stimulates DNA excision repair *in vitro* and in hibits 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 45β and GADD 45γ, have been shown to be induced by environmental stresses. GADD 45β and GADD 45γ are thought to induce p38/JNK activation via MEKK4 activation.

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. Wild-type 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. Marx, J. 1994. New link found between p53 and DNA repair. Science 266: 1321-1322.
5. Smith, M.L., et al. 1994. Interaction of the p53-regulated protein GADD 45 with proliferating cell nuclear antigen. Science 266: 1376-1379.

CHROMOSOMAL LOCATION

Genetic locus: GADD45G (human) mapping to 9q22.2; Gadd45g (mouse) mapping to 13 A5.

SOURCE

GADD 45γ (B-1) is a mouse monoclonal antibody raised against amino acids 95-159 mapping at the C-terminus of GADD 45γ of human origin.

PRODUCT

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

GADD 45γ (B-1) is available conjugated to agarose (sc-393261 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-393261 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393261 PE), fluorescein (sc-393261 FITC), Alexa Fluor® 488 (sc-393261 AF488), Alexa Fluor® 546 (sc-393261 AF546), Alexa Fluor® 594 (sc-393261 AF594) or Alexa Fluor® 647 (sc-393261 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393261 AF680) or Alexa Fluor® 790 (sc-393261 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

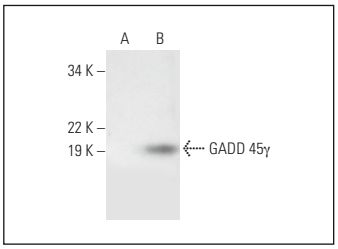
GADD 45γ (B-1) is recommended for detection of GADD 45γ of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 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 45γ siRNA (h): sc-37418, GADD 45γ siRNA (m): sc-37419, GADD 45γ siRNA (r): sc-63316, GADD 45γ shRNA Plasmid (h): sc-37418-SH, GADD 45γ shRNA Plasmid (m): sc-37419-SH, GADD 45γ shRNA Plasmid (r): sc-63316-SH, GADD 45γ shRNA (h) Lentiviral Particles: sc-37418-V, GADD 45γ shRNA (m) Lentiviral Particles: sc-37419-V and GADD 45γ shRNA (r) Lentiviral Particles: sc-63316-V.

Molecular Weight of GADD 45γ: 17 kDa.

Positive Controls: GADD 45γ (m): 293T Lysate: sc-120384.

DATA



GADD 45γ (B-1): sc-393261. Western blot analysis of GADD 45γ expression in non-transfected: sc-117752 (**A**) and mouse GADD 45γ transfected: sc-120384 (**B**) 293T whole cell lysates.

SELECT PRODUCT CITATIONS

1. Li, X., et al. 2019. The DNA repair associated protein GADD 45γ regulates the temporal coding of immediate early gene expression within the prelimbic prefrontal cortex and is required for the consolidation of associative fear memory. J. Neurosci. 39: 970-983.
2. Li, Y. and Wang, B. 2022. Circular RNA circCHFR downregulation protects against oxidized low-density lipoprotein-induced endothelial injury via regulation of microRNA-15b-5p/growth arrest and DNA damage inducible γ. Bioengineered 13: 4481-4492.
3. Zhang, P., et al. 2024. Gadd45g insufficiency drives the pathogenesis of myeloproliferative neoplasms. Nat. Commun. 15: 2989.
4. Lee, M.J., et al. 2024. Urinary GADD45G protein excretion is associated with IgA nephropathy progression. Biomedicines 12: 2846.

STORAGE

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