SANTA CRUZ BIOTECHNOLOGY, INC.

GADD 45γ (C-16): sc-8778

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The Power to Question

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 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 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 GADD45 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 Gadd45 with proliferating cell nuclear antigen. Science 266: 1376-1379.
6. Takekawa, M. et al. 1998. A family of stress-inducible GADD45-like proteins mediate activation of the stress-responsive MTK1/MEKK4 MAPKKK. Cell 95: 521-530.

CHROMOSOMAL LOCATION

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

SOURCE

GADD 45γ (C-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of GADD 45γ of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-8778 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

RESEARCH USE

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

APPLICATIONS

GADD 45γ (C-16) is recommended for detection of GADD 45γ of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 45γ (C-16) is also recommended for detection of GADD 45γ in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for GADD 45 siRNA (h): sc-37418, GADD 45 siRNA (m): sc-37419, GADD 45 siRNA (r): sc-63316, GADD 45 shRNA Plasmid (h): sc-37418-SH, GADD 45 shRNA Plasmid (m): sc-37419-SH, GADD 45 shRNA Plasmid (r): sc-63316-SH, GADD 45 shRNA (h) Lentiviral Particles: sc-37418-V, GADD 45 shRNA (m) Lentiviral Particles: sc-37419-V and GADD 45 shRNA (r) Lentiviral Particles: sc-63316-V.

Molecular Weight of GADD 45γ: 17 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Jiang, F., et al. 2004. GADD 45γ is androgen-responsive and growth-inhibitory in prostate cancer cells. Mol. Cell. Endocrinol. 213: 121-129.
2. Shin, G.T., et al. 2008. Upregulation and function of GADD 45γ in unilateral ureteral obstruction. Kidney Int. 73: 1251-1265.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.