

GADD 34 (h): 293T Lysate: sc-174859

BACKGROUND

It is well established that cell cycle progression is subject to arrest at G₁ and G₂ 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 G₁ checkpoint and functions to upregulate expression of GADD 45 and the mitotic inhibitory protein p21. GADD 45 has been shown to stimulate DNA excision repair *in vitro* and to inhibit entry of cells into S phase, and it apparently acts in concert with GADD 153 in inducing growth arrest. A related DNA-damage inducible gene, GADD 34 (also designated MyD116) has been shown to synergize with GADD 45 or GADD 153 in suppressing cell growth. PEG-3 (progression elevated gene-3) shares significant homology with GADD 34 and is inducible by DNA damage. PEG-3 expression has been shown to be elevated in cells displaying a progressed-transformed phenotype.

REFERENCES

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2. Hunter, T., et al. 1994. Cyclins and cancer II: cyclin D and CDK inhibitors come of age. *Cell* 79: 573-582.
3. Ron, D. 1994. Inducible growth arrest: new mechanistic insights. *Proc. Natl. Acad. Sci. USA* 91: 1985-1986.
4. Smith, M.L., et al. 1994. Interaction of the p53-regulated protein Gadd45 with proliferating cell nuclear antigen. *Science* 266: 1376-1380.
5. Gujuluva, C.N., et al. 1994. Effect of UV-irradiation on cell cycle, viability and the expression of p53, gadd153 and gadd45 genes in normal and HPV-immortalized human oral keratinocytes. *Oncogene* 9: 1819-1827.
6. Selvakumaran, M., et al. 1994. The novel primary response gene MyD118 and the proto-oncogenes myb, myc, and bcl-2 modulate transforming growth factor β 1-induced apoptosis of myeloid leukemia cells. *Mol. Cell. Biol.* 14: 2352-2360.
7. Zhan, Q., et al. 1994. The gadd and MyD genes define a novel set of mammalian genes encoding acidic proteins that synergistically suppress cell growth. *Mol. Cell. Biol.* 14: 2361-2371.
8. Su, Z.Z., et al. 1997. Subtraction hybridization identifies a transformation progression associated-gene PEG-3 with sequence homology to a growth arrest and DNA damage-inducible gene. *Proc. Natl. Acad. Sci. USA* 94: 9125-9130.
9. Novoa, I., et al. 2001. Feedback inhibition of the unfolded protein response by GADD34-mediated dephosphorylation of eIF2 α . *J. Cell Biol.* 153: 1011-1022.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: PPP1R15A (human) mapping to 19q13.33.

PRODUCT

GADD 34 (h): 293T Lysate represents a lysate of human GADD 34 transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

GADD 34 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive GADD 34 antibodies. Recommended use: 10-20 μ l per lane.

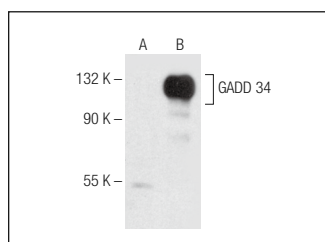
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

GADD 34 (B-10): sc-373815 is recommended as a positive control antibody for Western Blot analysis of enhanced human GADD 34 expression in GADD 34 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker[™] Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



GADD 34 (B-10): sc-373815. Western blot analysis of GADD 34 expression in non-transfected: sc-117752 (A) and human GADD 34 transfected: sc-174859 (B) 293T whole cell lysates.

RESEARCH USE

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