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# GADD 153 siRNA (r): sc-156118

## BACKGROUND

GADD 153 has been described as a growth arrest and DNA damage-inducible gene that encodes a C/EBP-related nuclear protein. This protein has also been designated C/EBP-homologous protein (CHOP-10). GADD 153 expression is induced by a variety of cellular stresses, including nutrient deprivation and metabolic perturbations. GADD 153 functions to block cells in G<sub>1</sub> to S phase in cell cycle progression and acts by dimerizing with other C/EBP proteins to direct GADD 153 dimers away from "classical" C/EBP binding sites, recognizing instead unique "nonclassical" sites. Thus GADD 153 acts as a negative modulator of C/EBP-like proteins in certain terminally differentiated cells, similar to the regulatory function of Id on the activity of MyoD and MyoD-related proteins involved in the development of muscle cells.

## REFERENCES

1. Sherr, C.J. 1994. G<sub>1</sub> phase progression: cycling on cue. *Cell* 79: 551-555.
2. Hunter, T. and Pines, J. 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. Gujuluva, C.N., et al. 1994. Effect of UV-irradiation on cell cycle, viability and the expression of p53, GADD 153 and GADD 45 genes in normal and HPV-immortalized human oral keratinocytes. *Oncogene* 9: 1819-1827.
5. Selvakumar, M., et al. 1994. The novel primary response gene MyD118 and the proto-oncogenes Myb, Myc, and Bcl-2 modulate transforming growth factor  $\beta$ 1-induced apoptosis of myeloid leukemia cells. *Mol. Cell. Biol.* 14: 2352-2360.

## CHROMOSOMAL LOCATION

Genetic locus: Ddit3 (rat) mapping to 7q22.

## PRODUCT

GADD 153 siRNA (r) is a pool of 2 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GADD 153 shRNA Plasmid (r): sc-156118-SH and GADD 153 shRNA (r) Lentiviral Particles: sc-156118-V as alternate gene silencing products.

For independent verification of GADD 153 (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-156118A and sc-156118B.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

GADD 153 siRNA (r) is recommended for the inhibition of GADD 153 expression in rat cells.

## SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10  $\mu$ M in 66  $\mu$ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

## GENE EXPRESSION MONITORING

GADD 153 (B-3): sc-7351 is recommended as a control antibody for monitoring of GADD 153 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GADD 153 gene expression knockdown using RT-PCR Primer: GADD 153 (r)-PR: sc-156118-PR (20  $\mu$ l, 532 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Nicoletti-Carvalho, J.E., et al. 2010. MKP-1 mediates glucocorticoid-induced ERK1/2 dephosphorylation and reduction in pancreatic  $\beta$ -cell proliferation in islets from early lactating mothers. *Am. J. Physiol. Endocrinol. Metab.* 299: E1006-E1015.
2. Nicoletti-Carvalho, J.E., et al. 2010. UPR-mediated TRIB3 expression correlates with reduced Akt phosphorylation and inability of interleukin 6 to overcome palmitate-induced apoptosis in RINm5F cells. *J. Endocrinol.* 206: 183-193.
3. Kang, X., et al. 2018. Sirtuin-1(SIRT1) stimulates growth plate chondrogenesis by attenuating the PERK-eIF-2 $\alpha$ -CHOP pathway in the unfolded protein response. *J. Biol. Chem.* 293: 8614-8625.

## RESEARCH USE

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