SANTA CRUZ BIOTECHNOLOGY, INC.

CRIF1 siRNA (m): sc-105245

BACKGROUND

CRIF1, also known as GADD45GIP1, PLINP1, PRG6 or CKBBP2, is a 222 amino acid nuclear protein that plays a role in apoptosis control. Expressed in a variety of tissues, including heart, thyroid, trachea, kidney, ovary, pancreas, testis and stomach, CRIF1 functions as a negative regulator of G_1 to S phase cell cycle production, specifically by working with GADD 45 proteins to inhibit the activity of cyclin-dependent kinases (Cdks). While overexpression of CRIF1 results in cell cycle arrest at the G_1 phase, downregulation of CRIF1 by p53 in apoptotic cells promotes cell cycle progression and may be an important factor in tumor growth and metastasis. CRIF1 is subject to phosphorylation by casein kinase II, an event that is thought to decrease CRIF1 activity and promote cellular proliferation. Human CRIF1 shares 90% homology with its mouse counterpart, suggesting a conserved role between species.

REFERENCES

1. Horikoshi, N., et al. 1999. Isolation of differentially expressed cDNAs from p53-dependent apoptotic cells: activation of the human homologue of the *Drosophila* peroxidasin gene. Biochem. Biophys. Res. Commun. 261: 864-869.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 605162. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Chung, H.K., et al. 2003. CR6-interacting factor 1 interacts with Gadd45 family proteins and modulates the cell cycle. J. Biol. Chem. 278: 28079-28088.
4. Park, K.C., et al. 2005. CR6-interacting factor 1 interacts with orphan nuclear receptor Nur77 and inhibits its transactivation. Mol. Endocrinol. 19: 12-24.
5. Nakayama, K., et al. 2007. NAC-1 controls cell growth and survival by repressing transcription of Gadd45GIP1, a candidate tumor suppressor. Cancer Res. 67: 8058-8064.
6. Oh, N.S., et al. 2007. Phosphorylation of CKBBP2/CRIF1 by protein kinase CKII promotes cell proliferation. Gene 386: 147-153.
7. Suh, J.H., et al. 2008. CR6-interacting factor 1 represses the transactivation of androgen receptor by direct interaction. Mol. Endocrinol. 22: 33-46.

CHROMOSOMAL LOCATION

Genetic locus: Gadd45gip1 (mouse) mapping to 8 C3.

PRODUCT

CRIF1 siRNA (m) is a pool of 3 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CRIF1 shRNA Plasmid (m): sc-105245-SH and CRIF1 shRNA (m) Lentiviral Particles: sc-105245-V as alternate gene silencing products.

For independent verification of CRIF1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-105245A, sc-105245B and sc-105245C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

CRIF1 siRNA (m) is recommended for the inhibition of CRIF1 expression in mouse 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 µM in 66 µl. 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

CRIF1 (H-9): sc-374122 is recommended as a control antibody for monitoring of CRIF1 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CRIF1 gene expression knockdown using RT-PCR Primer: CRIF1 (m)-PR: sc-105245-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

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