SANTA CRUZ BIOTECHNOLOGY, INC.

Fhit siRNA (m): sc-145170

BACKGROUND

FHIT, a candidate tumor suppressor gene, contains the FRA3B common fragile site and is highly susceptible to carcinogen damage. The pattern of mutational inactivation seen with the FHIT gene is unique compared with other known tumor suppressors. FHIT gene structure and expression have been shown to be altered in esophageal, head, neck, lung, gastric, breast, and cervical carcinomas. It has been demonstrated that FHIT exon loss is associated with smoking duration or asbestos exposure. The FHIT protein is a member of the histidine triad (HIT) superfamily and functions as a dinucleoside 5',5'''-P1, P3-triphosphate hydrolase.

REFERENCES

1. Mao, L., et al. 1996. Frequent abnormalities of FHIT, a candidate suppressor gene, in head and neck cancer cell lines. Cancer Res. 56: 5128-5131.
2. Barnes, L.D., et al. 1996. Fhit, a putative tumor suppressor in humans, is a dinucleoside 5',5'''-P1,P3-triphosphate hydrolase. Biochemistry 35: 11529-11535.
3. Siprashvili, Z., et al. 1997. Replacement of Fhit in cancer cells suppresses tumorigenicity. Proc. Natl. Acad. Sci. USA 94: 13771-13776.
4. Bugert, P., et al. 1997. Fhit gene and the FRA3B region are not involved in the genetics of renal cell carcinomas. Genes Chromosomes Cancer 20: 9-15.
5. Michael, D., et al. 1997. Frequent deletions of Fhit and FRA3B in Barrett's metaplasia and esophageal adenocarcinomas. Oncogene 15: 1653-1659.
6. Le Beau, M.M., et al. 1998. An Fhit tumor suppressing gene? Genes Chromosome Cancer 21: 281-289.
7. Nelson, H.H., et al. 1998. Chromosome 3p14 alterations in lung cancer: evidence that FHIT exon deletion is a target of tobacco carcinogen and asbestos. Cancer Res. 58: 1804-1807.

CHROMOSOMAL LOCATION

Genetic locus: Fhit (mouse) mapping to 14 A1.

PRODUCT

Fhit 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 Fhit shRNA Plasmid (m): sc-145170-SH and Fhit shRNA (m) Lentiviral Particles: sc-145170-V as alternate gene silencing products.

For independent verification of Fhit (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-145170A, sc-145170B and sc-145170C.

PROTOCOLS

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

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

Fhit siRNA (m) is recommended for the inhibition of Fhit 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

Fhit (G-4): sc-390481 is recommended as a control antibody for monitoring of Fhit 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 Fhit gene expression knockdown using RT-PCR Primer: Fhit (m)-PR: sc-145170-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.