

# IGF2BP1 siRNA (h): sc-40694

## BACKGROUND

Insulin like growth factor 2 mRNA binding proteins (IGF2BPs) bind RNA and influence RNA synthesis and metabolism. IGF2BP1, also known as coding region determinant-binding protein/Insulin-like growth factor II mRNA-binding protein (CRD-BP), IMP1 or VICKZ1; IGF2BP2 (IMP2, VICKZ2, p62); and IGF2BP3 (IMP3, KOC1, VICKZ3) contain a unique combination of RNA recognition motifs and four hnRNP K homology domains. IGF2BP1 is abundant in embryonal tissues and is expressed in 81% of colon cancers, 73% of sarcomas and 58.5% of breast cancers. It recognizes c-Myc, IGF-II and t mRNAs, and H19 RNA, and plays a major role in proliferation of K-562 cells by an IGF-II-dependent mechanism. IGF2BP2 binds the 5' UTR of IGF-II mRNA and influences tumor cell growth, in which IGF2BP2 is associated with apoptosis induced by tretinoin. IGF2BP3 knockdown by RNA interference decreases levels of IGF-II protein without affecting IGF-II, c-Myc, or  $\beta$  Actin mRNA and H19 RNA levels. IGF2BP3 is a marker for carcinomas and high-grade dysplastic lesions of pancreatic ductal epithelium.

## REFERENCES

1. Leeds, P., et al. 1997. Developmental regulation of CRD-BP, an RNA-binding protein that stabilizes c-Myc mRNA *in vitro*. *Oncogene* 14: 1279-1286.
2. Ioannidis, P., et al. 2001. c-Myc and IGF-II mRNA-binding protein (CRD-BP/IMP-1) in benign and malignant mesenchymal tumors. *Int. J. Cancer* 94: 480-484.
3. Ioannidis, P., et al. 2003. 8q24 copy number gains and expression of the c-Myc mRNA stabilizing protein CRD-BP in primary breast carcinomas. *Int. J. Cancer* 104: 54-59.

## CHROMOSOMAL LOCATION

Genetic locus: IGF2BP1 (human) mapping to 17q21.32.

## PRODUCT

IGF2BP1 siRNA (h) 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see IGF2BP1 shRNA Plasmid (h): sc-40694-SH and IGF2BP1 shRNA (h) Lentiviral Particles: sc-40694-V as alternate gene silencing products.

For independent verification of IGF2BP1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-40694A, sc-40694B and sc-40694C.

## 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

IGF2BP1 siRNA (h) is recommended for the inhibition of IGF2BP1 expression in human 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

IGF2BP1 (D-9): sc-166344 is recommended as a control antibody for monitoring of IGF2BP1 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™ Molecular Weight Standards: sc-2035, UltraCruz® 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® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor IGF2BP1 gene expression knockdown using RT-PCR Primer: IGF2BP1 (h)-PR: sc-40694-PR (20  $\mu$ l, 538 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Mongroo, P.S., et al. 2011. IMP-1 displays cross-talk with K-Ras and modulates colon cancer cell survival through the novel proapoptotic protein CYFIP2. *Cancer Res.* 71: 2172-2182.
2. Chatterji, P., et al. 2019. Posttranscriptional regulation of colonic epithelial repair by RNA binding protein IMP1/IGF2BP1. *EMBO Rep.* 20: e47074.
3. Tian, J., et al. 2023. SLERT, as a novel biomarker, orchestrates endometrial cancer metastasis via regulation of BDNF/TRKB signaling. *World J. Surg. Oncol.* 21: 27.

## RESEARCH USE

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