

# BST-2 siRNA (h): sc-60294

## BACKGROUND

Bone marrow stromal cells act as regulators for B-cell growth and development through their surface molecules and cytokines. Bone marrow stromal antigen-2 (BST-2), also designated CD317 antigen, is a single-pass type II membrane protein. BST-2, which is expressed mainly on synovial cell lines and bone marrow stromal cell lines, is primarily expressed in liver, heart, placenta and lung tissues. BST-2 is thought to be involved in pre-B cell growth. It has been implicated in B cell activation in rheumatoid arthritis.

## REFERENCES

1. Kaisho, T., et al. 1994. BST-1, a surface molecule of bone marrow stromal cell lines that facilitates pre-B-cell growth. *Proc. Natl. Acad. Sci. USA* 91: 5325-5329.
2. Ishikawa, J., et al. 1995. Molecular cloning and chromosomal mapping of a bone marrow stromal cell surface gene, BST2, that may be involved in pre-B-cell growth. *Genomics* 26: 527-534.
3. Ishihara, K., et al. 1996. Stage-specific expression of mouse BST-1/BP-3 on the early B and T cell progenitors prior to gene rearrangement of antigen receptor. *Int. Immunol.* 8: 1395-1404.
4. Ohtomo, T., et al. 1999. Molecular cloning and characterization of a surface antigen preferentially overexpressed on multiple myeloma cells. *Biochem. Biophys. Res. Commun.* 258: 583-591.

## CHROMOSOMAL LOCATION

Genetic locus: BST2 (human) mapping to 19p13.11.

## PRODUCT

BST-2 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 BST-2 shRNA Plasmid (h): sc-60294-SH and BST-2 shRNA (h) Lentiviral Particles: sc-60294-V as alternate gene silencing products.

For independent verification of BST-2 (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-60294A, sc-60294B and sc-60294C.

## 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

BST-2 siRNA (h) is recommended for the inhibition of BST-2 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

BST-2 (E-4): sc-390719 is recommended as a control antibody for monitoring of BST-2 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 BST-2 gene expression knockdown using RT-PCR Primer: BST-2 (h)-PR: sc-60294-PR (20  $\mu$ l, 457 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Zou, J., et al. 2015. The viral restriction factor tetherin prevents leucine-rich pentatricopeptide repeat-containing protein (LRPPRC) from association with beclin 1 and B-cell CLL/Lymphoma 2 (Bcl-2) and enhances autophagy and mitophagy. *J. Biol. Chem.* 290: 7269-7279.
2. Haga, Y., et al. 2017. Interferon induces interleukin 8 and bone marrow stromal cell antigen 2 expression, inhibiting the production of hepatitis B virus surface antigen from human hepatocytes. *Biochem. Biophys. Res. Commun.* 486: 858-863.
3. Hoffmann, M., et al. 2019. Tetherin inhibits Nipah virus but not Ebola virus replication in fruit bat cells. *J. Virol.* 93: e01821-18.
4. Verma, S., et al. 2020. BST2 regulates interferon  $\gamma$ -dependent decrease in invasion of HTR-8/SVneo cells via Stat1 and Akt signaling pathways and expression of E-cadherin. *Cell Adh. Migr.* 14: 24-41.

## RESEARCH USE

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