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# BST-1 shRNA (h) Lentiviral Particles: sc-43643-V

## BACKGROUND

BST-1 (bone marrow stromal antigen-1) has been identified as a surface molecule that is GPI-anchored to the cell membrane of stromal cells. Both ADP-ribosyl cyclase and cADPR hydrolase activities have been demonstrated by BST-1. cADPR activity is a potential regulator of Insulin secretion in pancreatic  $\beta$  cells. Most pancreatic islet cells express BST-1, indicating a link between BST-1 and Insulin secretion. BST-1 expression has also been found in a wide range of tissues including umbilical vein endothelial cells, monocytes and granulocytes. BST-1 expression in thymus tissue and on B and T cell progenitors undergoing gene rearrangement implicates BST-1 as a useful marker for lymphoid progenitor cells that are initiating gene rearrangement of their antigen receptors. BST-1 has also been shown to facilitate B cell growth and may act as a receptor.

## 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. Hirata, Y., et al. 1994. ADP ribosyl cyclase activity of a novel bone marrow stromal cell surface molecule, BST-1. *FEBS Lett.* 356: 244-248.
3. Kato, I., et al. 1995. Regulatory role of CD38 (ADP-ribosyl cyclase/cyclic ADP-ribose hydrolase) in Insulin secretion by glucose in pancreatic  $\beta$  cells. Enhanced Insulin secretion in CD38-expressing transgenic mice. *J. Biol. Chem.* 270: 30045-30050.
4. Okuyama, Y., et al. 1995. Human BST-1 expressed on myeloid cells functions as a receptor molecule. *Biochem. Biophys. Res. Comm.* 228: 838-845.
5. Kajimoti, Y., et al. 1996. Pancreatic islet cells express BST-1, a CD38-like surface molecule having ADP-ribosyl cyclase activity. *Biochem. Biophys. Res. Comm.* 219: 941-946.
6. 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. *Intl. Immunol.* 8: 1395-1404.

## CHROMOSOMAL LOCATION

Genetic locus: BST1 (human) mapping to 4p15.32.

## PRODUCT

BST-1 shRNA (h) Lentiviral Particles is a pool of concentrated, transduction-ready viral particles containing 3 target-specific constructs that encode 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200  $\mu$ l frozen stock containing  $1.0 \times 10^6$  infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see BST-1 siRNA (h): sc-43643 and BST-1 shRNA Plasmid (h): sc-43643-SH as alternate gene silencing products.

## STORAGE

Store lentiviral particles at  $-80^\circ\text{C}$ . Stable for at least one year from the date of shipment. Once thawed, particles can be stored at  $4^\circ\text{C}$  for up to one week. Avoid repeated freeze thaw cycles.

## APPLICATIONS

BST-1 shRNA (h) Lentiviral Particles is recommended for the inhibition of BST-1 expression in human cells.

## SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200  $\mu$ l frozen viral stock containing  $1.0 \times 10^6$  infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor BST-1 gene expression knockdown using RT-PCR Primer: BST-1 (h)-PR: sc-43643-PR (20  $\mu$ l). Annealing temperature for the primers should be  $55-60^\circ\text{C}$  and the extension temperature should be  $68-72^\circ\text{C}$ .

## BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

## RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.

## PROTOCOLS

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