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BAI-1 shRNA (h) Lentiviral Particles: sc-45208-V

BACKGROUND

Brain-specific angiogenesis inhibitors, including BAI-1, BAI-2, and BAI-3, are integral membrane proteins belonging to the G protein-coupled receptor 2 family. In addition to inhibiting angiogenesis in the brain, BAI proteins are also expressed in the heart, thymus, skeletal muscle, and a variety of cell lines. BAI-1 protein is specifically expressed in the brain and found to localize to the cytoplasm and membrane in neuronal cells of the cerebral cortex. Reduced expression of BAI-1 in some glioblastoma cell lines and cancer tissues implicates the functional role of BAI-1 as an inhibitor of angiogenesis. The exact mechanisms underlying BAI-1 anti-angiogenic activity are still being investigated. BAI-1 may be involved in mediating the p53 signal in suppression of glioblastoma, as well as in cell adhesion and signal transduction. Additional research shows an inverse correlation with vascularization and BAI-1 expression in both colorectal carcinomas and pulmonary adenocarcinomas.

REFERENCES

1. Nishimori, H., et al. 1997. A novel brain-specific p53-target gene, BAI1, containing thrombospondin type 1 repeats inhibits experimental angiogenesis. *Oncogene* 15: 2145-2150.
2. Shiratsuchi, T., et al. 1998. Cloning and characterization of BAI-associated protein 1: a PDZ domain-containing protein that interacts with BAI1. *Biochemistry* 247: 597-604.
3. Fukushima, Y., et al. 1998. Brain-specific angiogenesis inhibitor 1 expression is inversely correlated with vascularity and distant metastasis of colorectal cancer. *Int. J. Oncol.* 13: 967-970.
4. Hatanaka, H., et al. 2000. Vascularization is decreased in pulmonary adenocarcinoma expressing brain-specific angiogenesis inhibitor 1 (BAI1). *Int. J. Mol. Med.* 5: 181-183.
5. Duda, D.G., et al. 2002. Overexpression of the p53-inducible brain-specific angiogenesis inhibitor 1 suppresses efficiently tumour angiogenesis. *Br. J. Cancer* 86: 490-496.

CHROMOSOMAL LOCATION

Genetic locus: BAI1 (human) mapping to 8q24.3.

PRODUCT

BAI-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 μ l frozen stock containing 1.0×10^6 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 BAI-1 siRNA (h): sc-45208 and BAI-1 shRNA Plasmid (h): sc-45208-SH as alternate gene silencing products.

STORAGE

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

APPLICATIONS

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

SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 μ l frozen viral stock containing 1.0×10^6 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.

GENE EXPRESSION MONITORING

BAI-1 (H-270): sc-66815 is recommended as a control antibody for monitoring of BAI-1 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 (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor BAI-1 gene expression knockdown using RT-PCR Primer: BAI-1 (h)-PR: sc-45208-PR (20 μ l, 575 bp). 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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