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# CD109 shRNA (m) Lentiviral Particles: sc-44951-V

## BACKGROUND

CD109 is a glycosylphosphatidylinositol (GPI)-linked cell surface glycoprotein. It is a member of the  $\alpha$ -Macroglobulin/C3, C4, C5 family of thioester-containing proteins. CD109 is expressed by CD34<sup>+</sup> acute myeloid leukemia cell lines, activated T lymphoblasts, activated platelets, T cell lines, endothelial cells, lung and esophageal squamous cell carcinomas and testis. It has all the characteristics of a cancer-testis antigen. CD109 carries the platelet-specific Gov antigen system, which is involved in platelet transfusion refraction, neonatal alloimmune thrombocytopenia and posttransfusion purpura.

## REFERENCES

1. Sasaki, R., et al. 1979. Terminal deoxy-nucleotidyl transferase activity and B cell markers in chronic myelogenous leukemia blast crisis. *Acta Haematol.* 62: 143-147.
2. Kelton, J.G., et al. 1990. Gova/b alloantigen system on human platelets. *Blood* 75: 2172-2176.
3. Lin, M., et al. 2002. Cell surface antigen CD109 is a novel member of the  $\alpha$ 2-Macroglobulin/C3, C4, C5 family of thioester-containing proteins. *Blood* 99: 1683-1691.
4. Schuh, A.C., et al. 2002. A tyrosine 703 serine polymorphism of CD109 defines the Gov platelet alloantigens. *Blood* 99: 1692-1698.
5. Giesert, C., et al. 2003. Antibody W7C5 defines a CD109 epitope expressed on CD34<sup>+</sup> and CD34<sup>-</sup> hematopoietic and mesenchymal stem cell subsets. *Ann. N.Y. Acad. Sci.* 996227-996230.
6. Solomon, K.R., et al. 2004. CD109 represents a novel branch of the  $\alpha$ <sub>2</sub>-Macroglobulin/complement gene family. *Gene* 327: 171-183.
7. Zhang, J.M., et al. 2005. CD109 expression in squamous cell carcinoma of the uterine cervix. *Pathol. Int.* 55: 165-169.

## CHROMOSOMAL LOCATION

Genetic locus: Cd109 (mouse) mapping to 9 E1.

## PRODUCT

CD109 shRNA (m) 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 x 10<sup>6</sup> 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 CD109 siRNA (m): sc-44951 and CD109 shRNA Plasmid (m): sc-44951-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

CD109 shRNA (m) Lentiviral Particles is recommended for the inhibition of CD109 expression in mouse cells.

## SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200  $\mu$ l frozen viral stock containing 1.0 x 10<sup>6</sup> 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

CD109 (S-20): sc-33114 is recommended as a control antibody for monitoring of CD109 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 donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CD109 gene expression knockdown using RT-PCR Primer: CD109 (m)-PR: sc-44951-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° 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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