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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

[linkedin.com/company/szaboscandic](https://www.linkedin.com/company/szaboscandic) 

GLEPP1 shRNA (h) Lentiviral Particles: sc-44890-V

BACKGROUND

Protein phosphatases play critical roles in the regulation of signal transduction pathways. The family can be separated into three general categories, which are distinguished on the basis of substrate specificity. The first and largest category, termed protein tyrosine phosphatases or PTPs, includes transmembrane proteins, membrane associated proteins and proteins that localize to nuclei. The second category of protein phosphatases dephosphorylate proteins on phosphoserine and phosphothreonine residues, whereas the third category of protein phosphatases exhibit dual specificities and can dephosphorylate proteins on phosphotyrosine and phosphoserine/phosphothreonine residues. Glomerular epithelial protein 1 (GLEPP1), also designated protein tyrosine phosphatase U2 (PTPase U2) or receptor-type tyrosine-protein phosphatase O (PTPRO), belongs to the protein-tyrosine phosphatase family. GLEPP1 is a Type I membrane protein containing 8 fibronectin type-III domains and 1 tyrosine-protein phosphatase domain. GLEPP1 is expressed primarily in the glomeruli of the kidney, but is also detected in placenta, lung and brain.

REFERENCES

1. Seimiya, H., et al. 1995. Cloning, expression and chromosomal localization of a novel gene for protein tyrosine phosphatase (PTP-U2) induced by various differentiation-inducing agents. *Oncogene* 10: 1731-1738.
2. Wiggins, R.C., et al. 1995. Molecular cloning of cDNAs encoding human GLEPP1, a membrane protein tyrosine phosphatase: characterization of the GLEPP1 protein distribution in human kidney and assignment of the GLEPP1 gene to human chromosome. *Genomics* 27: 174-181.
3. Pavenstadt, H., et al. 2000. Roles of the podocyte in glomerular function. *Am. J. Physiol. Renal Physiol.* 278: F173-F179.
4. Kim, Y.H., et al. 2002. GLEPP1 receptor tyrosine phosphatase (Ptpro) in rat PAN nephrosis. A marker of acute podocyte injury. *Nephron* 90: 471-476.

CHROMOSOMAL LOCATION

Genetic locus: PTPRO (human) mapping to 12p12.3.

PRODUCT

GLEPP1 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 GLEPP1 siRNA (h): sc-44890 and GLEPP1 shRNA Plasmid (h): sc-44890-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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.

APPLICATIONS

GLEPP1 shRNA (h) Lentiviral Particles is recommended for the inhibition of GLEPP1 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

GLEPP1 (B-6): sc-365354 is recommended as a control antibody for monitoring of GLEPP1 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-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GLEPP1 gene expression knockdown using RT-PCR Primer: GLEPP1 (h)-PR: sc-44890-PR (20 μ 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.