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# Fn14 shRNA (h) Lentiviral Particles: sc-43764-V

## BACKGROUND

Fn14, the TWEAK receptor, is a recently identified member of the TNF receptor superfamily and is expressed on smooth muscle cells and endothelial cells. Fn14 is a weak inducer of apoptosis and promotes angiogenesis. Fn14, a type 1 membrane protein, associates with TRAF1 and TRAF2, and may modulate cellular adhesion to matrix proteins. Fn14 is highly expressed in heart, placenta and kidney, and moderately expressed in lung, skeletal muscle and pancreas. It is the smallest member of the TNF receptor (TNFR) superfamily described to date, and signals via recruitment of several different TNFR-associated factors.

## REFERENCES

1. Tran, N. L., et al. 2003. The human Fn14 receptor gene is up-regulated in migrating glioma cells *in vitro* and overexpressed in advanced glial tumors. *Am. J. Pathol.* 162: 1313-1321.
2. Han, S., et al. 2003. TNF-related weak inducer of apoptosis receptor, a TNF receptor superfamily member, activates NF $\kappa$ B through TNF receptor-associated factors. *Biochem. Biophys. Res. Commun.* 305: 789-796.
3. Wiley S.R. and Winkles, J.A. 2003. TWEAK, a member of the TNF superfamily, is a multifunctional cytokine that binds the TWEAKR/Fn14 receptor. *Cytokine Growth Factor Rev.* 14: 241-249.
4. Campbell, S., et al. 2004. The role of TWEAK/Fn14 IN the pathogenesis of inflammation and systemic autoimmunity. *Front. Biosci.* 9: 2273-2284.
5. Tran, N. L., et al. 2005. The tumor necrosis factor-like weak inducer of apoptosis (TWEAK)-fibroblast growth factor-inducible 14 (Fn14) signaling system regulates glioma cell survival via NF $\kappa$ B pathway activation and Bcl-x<sub>L</sub>/Bcl-w expression. *J. Biol. Chem.* 280: 3483-3492.
6. Kawakita, T., et al. 2005. Functional expression of TWEAK in human colonic adenocarcinoma cells. *Int. J. Oncol.* 26: 87-93.

## CHROMOSOMAL LOCATION

Genetic locus: TNFRSF12A (human) mapping to 16p13.3.

## PRODUCT

Fn14 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 Fn14 siRNA (h): sc-43764 and Fn14 shRNA Plasmid (h): sc-43764-SH as alternate gene silencing products.

## APPLICATIONS

Fn14 shRNA (h) Lentiviral Particles is recommended for the inhibition of Fn14 expression in human cells.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## 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.

## GENE EXPRESSION MONITORING

Fn14 (ITEM-4): sc-56250 is recommended as a control antibody for monitoring of Fn14 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 Fn14 gene expression knockdown using RT-PCR Primer: Fn14 (h)-PR: sc-43764-PR (20  $\mu$ l, 526 bp). 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.

## 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.

## 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.