

# WDR5 shRNA (h) Lentiviral Particles: sc-61798-V

## BACKGROUND

WD-repeat protein 5 (WDR5, also designated BMP-2-induced gene 3 kb or BIG-3) belongs to the family of WD-40 repeat proteins, and is essential for vertebrate development, Hox gene activation and global H3K4 trimethylation. WDR5 is a conserved subunit of trithorax (TRX) histone methyltransferase complexes that selectively binds to dimethylated Lys 4 (K4me2) in Histone H3 to promote K4 trimethylation by TRX. It is expressed in osteoblasts, chondrocytes, osteocytes and marrow stromal cells. The WDR5 protein contains seven WD-repeats, which may play a role in its function of accelerating osteoblast differentiation.

## REFERENCES

1. Wysocka, J., et al. 2005. WDR5 associates with Histone H3 methylated at K4 and is essential for H3 K4 methylation and vertebrate development. *Cell* 121: 859-872.
2. Gori, F., et al. 2005. WDR5, a novel WD repeat protein, regulates osteo *in vivo*. *J. Musculoskelet. Neuronal Interact.* 5: 338-339.
3. Couture, J.F., et al. 2006. Molecular recognition of Histone H3 by the WD40 protein WDR5. *Nat. Struct. Mol. Biol.* 13: 698-703.
4. Ruthenburg, A.J., et al. 2006. Histone H3 recognition and presentation by the WDR5 module of the MLL1 complex. *Nat. Struct. Mol. Biol.* 13: 704-712.
5. Gori, F., et al. 2006. WDR5, a WD-40 protein, regulates osteoblast differentiation during embryonic bone development. *Dev. Biol.* 295: 498-506.
6. Wysocka, J., et al. 2006. A PHD finger of NURF couples Histone H3 Lysine 4 trimethylation with chromatin remodelling. *Nature* 442: 86-90.
7. Han, Z., et al. 2006. Structural basis for the specific recognition of methylated histone H3 lysine 4 by the WD-40 protein WDR5. *Mol. Cell* 22: 137-144.

## CHROMOSOMAL LOCATION

Genetic locus: WDR5 (human) mapping to 9q34.2.

## PRODUCT

WDR5 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 µl 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 WDR5 siRNA (h): sc-61798 and WDR5 shRNA Plasmid (h): sc-61798-SH as alternate gene silencing products.

## 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.

## APPLICATIONS

WDR5 shRNA (h) Lentiviral Particles is recommended for the inhibition of WDR5 expression in human cells.

## SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200 µl 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

WDR5 (G-9): sc-393080 is recommended as a control antibody for monitoring of WDR5 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 reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor WDR5 gene expression knockdown using RT-PCR Primer: WDR5 (h)-PR: sc-61798-PR (20 µl). 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.

## PROTOCOLS

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