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## Produktinformation



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- Trockeneiszuschlag
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# VDR shRNA (h2) Lentiviral Particles: sc-45920-V

## BACKGROUND

The active metabolite of vitamin D modulates the expression of a wide variety of genes in a developmentally specific manner. This secosteroid hormone can up- or downregulate the expression of genes involved in a diverse array of responses such as proliferation, differentiation and calcium homeostasis. 1,25-(OH)<sub>2</sub>-vitamin D<sub>3</sub> exerts its effects through interaction with the vitamin D receptor (VDR), a member of the superfamily of hormone-activated nuclear receptors. In its ligand-bound state, the VDR forms heterodimers with the 9-*cis* retinoic acid receptor, RXR, and affects gene expression by binding specific DNA sequences known as hormone response elements, or HREs. In addition to regulating the above mentioned cellular responses, 1,25-(OH)<sub>2</sub>-vitamin D<sub>3</sub> exhibits antiproliferative properties in osteosarcoma, melanoma, colon carcinoma and breast carcinoma cells.

## REFERENCES

1. Lowe, K.E., et al. 1992. Vitamin D-mediated gene expression. *Crit. Rev. Eukaryot. Gene Expr.* 2: 65-109.
2. Studzinski, G.P., et al. 1993. Signaling pathways for vitamin D-induced differentiation: implications for therapy of proliferative and neoplastic diseases. *Crit. Rev. Eukaryot. Gene Expr.* 3: 279-312.
3. Buras, R.R., et al. 1994. Vitamin D receptors in breast cancer cells. *Breast Cancer Res. Treat.* 31: 191-202.
4. Bikle, D.D. 1994. Role of vitamin D, its metabolites, and analogs in the management of osteoporosis. *Rheum. Dis. Clin. North Am.* 20: 759-775.
5. Mangelsdorf, D.J., et al. 1994. The retinoid receptors. In Sporn, M.B., et al, eds. *The Retinoids: Biology, Chemistry, and Medicine*. New York: Raven Press, Ltd., 319-349.
6. Whitfield, G.K., et al. 1995. Genomic actions of 1,25-dihydroxyvitamin D<sub>3</sub>. *J. Nutr.* 125: 1690S-1694S.
7. Feldman, D., et al. 1995. Vitamin D and prostate cancer. *Adv. Exp. Med. Biol.* 375: 53-63.

## CHROMOSOMAL LOCATION

Genetic locus: VDR (human) mapping to 12q13.11.

## PRODUCT

VDR shRNA (h2) 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 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 VDR siRNA (h2): sc-45920 and VDR shRNA Plasmid (h2): sc-45920-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

VDR shRNA (h2) Lentiviral Particles is recommended for the inhibition of VDR expression in human cells.

## SUPPORT REAGENTS

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

VDR (D-6): sc-13133 is recommended as a control antibody for monitoring of VDR 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 VDR gene expression knockdown using RT-PCR Primer: VDR (h2)-PR: sc-45920-PR (20 µl, 557 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.

## 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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