

VDR (D-6): sc-13133



The Power to Question

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)₂-vitamin D₃ 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)₂-vitamin D₃ 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.

CHROMOSOMAL LOCATION

Genetic locus: VDR (human) mapping to 12q13.11; Vdr (mouse) mapping to 15 F1.

SOURCE

VDR (D-6) is a mouse monoclonal antibody raised against amino acids 344-424 of VDR of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-13133 X, 200 µg/0.1 ml.

VDR (D-6) is available conjugated to agarose (sc-13133 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13133 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13133 PE), fluorescein (sc-13133 FITC), Alexa Fluor® 488 (sc-13133 AF488), Alexa Fluor® 546 (sc-13133 AF546), Alexa Fluor® 594 (sc-13133 AF594) or Alexa Fluor® 647 (sc-13133 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13133 AF680) or Alexa Fluor® 790 (sc-13133 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, VDR (D-6) is available conjugated to biotin (sc-13133 B), 200 µg/ml, for WB, IHC(P) and ELISA.

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RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

VDR (D-6) is recommended for detection of VDR of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:500), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for VDR siRNA (h): sc-106692, VDR siRNA (m): sc-36811, VDR shRNA Plasmid (h): sc-106692-SH, VDR shRNA Plasmid (m): sc-36811-SH, VDR shRNA (h) Lentiviral Particles: sc-106692-V and VDR shRNA (m) Lentiviral Particles: sc-36811-V.

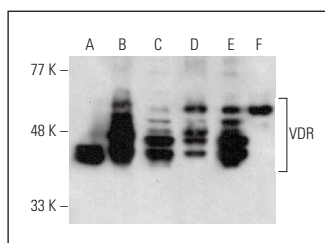
VDR (D-6) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight (predicted) of VDR isoforms: 48/53 kDa.

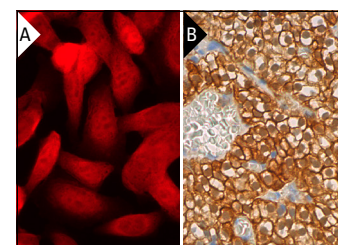
Molecular Weight (observed) of VDR isoforms: 48-60 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, MCF7 whole cell lysate: sc-2206 or SK-BR-3 cell lysate: sc-2218.

DATA



VDR (D-6) HRP: sc-13133 HRP. Direct western blot analysis of VDR expression in HeLa (A), MCF7 (B), SK-BR-3 (C), T-47D (D), Caco-2 (E) and Jurkat (F) whole cell lysates.



VDR (D-6) PE: sc-13133 PE. Direct immunofluorescence staining of formalin-fixed SW480 cells showing nuclear and cytoplasmic staining. Blocked with UltraCruz® Blocking Reagent: sc-516214 (A). VDR (D-6) HRP: sc-13133 HRP. Direct immunoperoxidase staining of formalin fixed, paraffin-embedded human parathyroid gland tissue showing nuclear, cytoplasmic and membrane staining of glandular cells. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214 (B).

SELECT PRODUCT CITATIONS

1. Pepper, C., et al. 2003. The vitamin D₃ analog EB1089 induces apoptosis via a p53-independent mechanism involving p38 MAP kinase activation and suppression of ERK activity in B-cell chronic lymphocytic leukemia cells *in vitro*. *Blood* 101: 2454-2460.
2. Ge, X., et al. 2020. Vitamin D/VDR signaling induces miR-27a/b expression in oral lichen planus. *Sci. Rep.* 10: 301.
3. Bass, J.J., et al. 2021. The mechanisms of skeletal muscle atrophy in response to transient knockdown of the vitamin D receptor (VDR) *in vivo*. *J. Physiol.* 599: 963-979.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.