

# Calcitriol (B1253M): sc-73623

## BACKGROUND

Calcitriol, also known as 1,25-dihydroxyvitamin D<sub>3</sub> or 1,25(OH)<sub>2</sub> vitamin D<sub>3</sub>, is the active metabolite of vitamin D. Calcitriol is a steroid hormone produced by the bioactivation of the constitutively produced intermediary metabolite Calcidiol, also referred to as 25-hydroxyvitamin D<sub>3</sub> (25(OH)D<sub>3</sub>). This reaction is catalyzed in the kidney by the 1 $\alpha$ -OHase enzyme. Calcidiol is a prehormone that is produced by the metabolism of vitamin D. Calcitriol plays a role in the maintenance of serum calcium and phosphate homeostasis by binding to the vitamin D receptor (VDR) and changing the transcriptional rate of target genes. Calcitriol stimulates intestinal calcium and phosphate absorption, bone calcium and phosphate resorption, and renal calcium and phosphate reabsorption, actions which ensure the deposition of bone mineral. Calcitriol also contributes to inhibiting cellular proliferation, stimulating cellular differentiation and modulating the immune system.

## REFERENCES

1. Rigby, W.F., et al. 1984. Differentiation of a human monocytic cell line by 1,25-dihydroxyvitamin D<sub>3</sub> (Calcitriol): a morphologic, phenotypic, and functional analysis. *Blood* 64: 1110-1115.
2. Mizunashi, K., et al. 1988. Effects of active vitamin D<sub>3</sub> and parathyroid hormone on the serum osteocalcin in idiopathic hypoparathyroidism and pseudohypoparathyroidism. *J. Clin. Invest.* 82: 861-865.
3. Haussler, M.R., et al. 1998. The nuclear vitamin D receptor: biological and molecular regulatory properties revealed. *J. Bone Miner. Res.* 13: 325-349.
4. Healy, K.D., et al. 2004. 1,25-Dihydroxyvitamin D<sub>3</sub> upregulates the renal vitamin D receptor through indirect gene activation and receptor stabilization. *Arch. Biochem. Biophys.* 433: 466-473.
5. Yildiz, F., et al. 2004. 1,25-Dihydroxy vitamin D<sub>3</sub>: can it be an effective therapeutic option for aggressive fibromatosis. *Med. Hypotheses* 64: 333-336.
6. van Etten, E. and Mathieu, C. 2005. Immunoregulation by 1,25-dihydroxyvitamin D<sub>3</sub>: basic concepts. *J. Steroid Biochem. Mol. Biol.* 97: 93-101.
7. Sterling, T.M. and Nemere, I. 2005. 1,25-dihydroxyvitamin D<sub>3</sub> stimulates vesicular transport within 5 s in polarized intestinal epithelial cells. *J. Endocrinol.* 185: 81-91.
8. Koren, R., et al. 2006. Calcitriol sensitizes colon cancer cells to H<sub>2</sub>O<sub>2</sub>-induced cytotoxicity while inhibiting caspase activation. *J. Steroid Biochem. Mol. Biol.* 101: 151-160.
9. Jones, G. 2007. Expanding role for vitamin D in chronic kidney disease: importance of blood 25-OH-D levels and extra-renal 1 $\alpha$ -hydroxylase in the classical and nonclassical actions of 1 $\alpha$ ,25-dihydroxyvitamin D<sub>3</sub>. *Semin. Dial.* 20: 316-324.

## SOURCE

Calcitriol (B1253M) is a mouse monoclonal antibody raised against Calcitriol-3-Hemisuccinate conjugated to BSA.

## RESEARCH USE

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

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Calcitriol (B1253M) is recommended for detection of Calcitriol by solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

## SELECT PRODUCT CITATIONS

1. Yu, Z.J., et al. 2017. Vitamin D<sub>3</sub> inhibits micro RNA-17-92 to promote specific immunotherapy in allergic rhinitis. *Sci. Rep.* 7: 546.

## STORAGE

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

## PROTOCOLS

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