PRODUCT INFORMATION

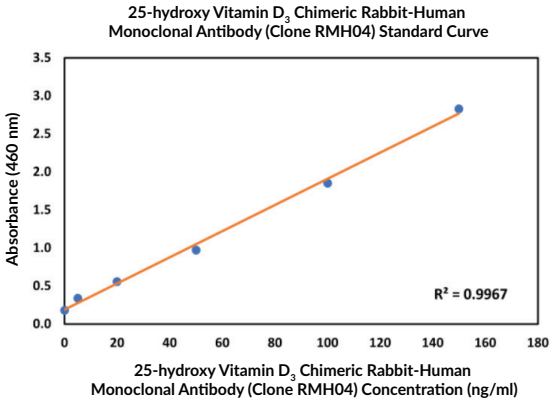
25-hydroxy Vitamin D_3 Chimeric Rabbit-Human Monoclonal Antibody (Clone RMH04)

Item No. 42798

Overview and Properties

Contents:	This vial contains 100 µg of protein A-affinity purified monoclonal antibody
Synonym:	25-hydroxy Cholecalciferol Chimeric
Immunogen:	25-hydroxy Vitamin D_3 BSA conjugate
Cross Reactivity:	(+) 25-hydroxy Vitamin D_3; (-) Vitamin D_3, Vitamin D2, 25-hydroxy Vitamin D_2
Species Reactivity:	Species Independent
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol and 0.09% sodium azide
Concentration:	1.0 mg/ml
Clone:	RMH04
Host:	Chimeric Monoclonal Antibody
Isotype:	IgG
Applications:	ELISA (sandwich) paired with 25-hydroxy Vitamin D_3/RMH04 Complexes Monoclonal Antibody (Clone RM428); the recommended starting concentration is 50 ng/well–200 ng/well. Other applications were not tested, therefore optimal working concentration/ dilution should be determined empirically.

Image



25-hydroxy Vitamin D_3 Chimeric Rabbit-Human Monoclonal Antibody (Clone RMH04) Standard Curve. The plate was coated with 100 ng capture antibody with 25-hydroxy Vitamin D_3 Chimeric Rabbit-Human Monoclonal Antibody (Clone RMH04) at a concentration of 1 µg/ml. A serial dilution from 150 ng/ml was performed using 25-hydroxy Vitamin D_3/RMH04 Complexes Monoclonal Antibody (Clone RM428). Biotin-labeled 25-hydroxy Vitamin D_3/RMH04 Complexes Monoclonal Antibody (Clone RM428) was used as a detection antibody.

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Description

25-hydroxy Vitamin D_3 is an intermediate in the biosynthesis of 1α,25-dihydroxy vitamin D_3 (calcitriol; Item No. 71820), a vitamin D receptor (VDR) agonist.[1-3] It is produced from vitamin D_3 (Item No. 11792) by 25-hydroxylase/CYP2R1 and bound to vitamin D binding protein (DBP) and albumin in the liver, then secreted into the bloodstream where it is the major circulating form of vitamin D.[1] 25-hydroxy Vitamin D_3 is transported to the kidney where it is hydroxylated by 1α-hydroxylase/CYP27B1 or 24-hydroxylase/CYP24A1 to produce 1α,25-dihydroxy vitamin D_3 or 24,25-dihydroxy vitamin D_3, respectively. Conversion of 25-hydroxy vitamin D_3 to 1α,25-dihydroxy vitamin D_3 is stimulated by parathyroid hormone (PTH) and inhibited by calcium, phosphorus, or FGF23. Serum 25-hydroxy vitamin D_3 levels have been widely used as a marker of vitamin D status.[2] Increased serum 25-hydroxy vitamin D_3 levels are associated with increased bone density in patients with osteoarthritis, as well as reduced risk of colorectal, breast, and prostate cancer, whereas decreased serum 25-hydroxy vitamin D_3 levels have been found in children with nutritional rickets, a condition caused by vitamin D deficiency and characterized by reduced bone density.[2,4,5] Cayman's 25-Hydroxy Vitamin D_3 Chimeric Rabbit-Human Monoclonal Antibody (Clone RMH04) is composed of human IgG CH and Cκ constant domains fused to the antigen-binding domain of a rabbit anti-25-hydroxy vitamin D_3 monoclonal antibody. It can be used as a capture antibody paired with the detection antibody 25-hydroxy Vitamin D_3/RMH04 Complexes Monoclonal Antibody (Clone RM428) (Item No. 42797) in ELISAs (sandwich).

References

1. Bikle, D. Vitamin D: Production, metabolism, and mechanisms of action. *Endotext* (2000).
2. Brandi, M.L. and Minisola, S. Calcidiol [25(OH)D3]: From diagnostic marker to therapeutical agent. *Curr. Med. Res. Opin.* **29(11)**, 1565-1572 (2013).
3. Lips, P. Vitamin D physiology. *Prog. Biophys. Mol. Biol.* **92(1)**, 4-8 (2006).
4. Bischoff-Ferrari, H.A., Zhang, Y., Kiel, D.P., *et al.* Positive association between serum 25-hydroxyvitamin D level and bone density in osteoarthritis. *Arthritis Rheum.* **53(6)**, 821-826 (2005).
5. Dogan, M., Erol, M., Cesur, Y., *et al.* The effect of 25-hydroxyvitamin D_3 on the immune system. *J. Pediatr. Endocrinol. Metab.* **22(10)**, 929-935 (2009).

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