

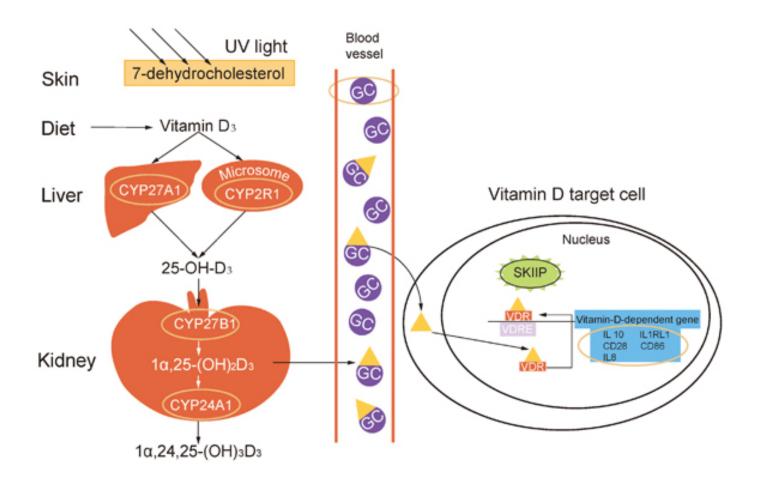
Vitamin D Related

Vitamin D was first identified as a cure for nutritional rickets, a disease of bone growth caused by an inadequate uptake of dietary calcium. Vitamin D refers collectively to vitamin D3 and vitamin D2. Biologically active vitamin D is generated via largely hepatic 25-hydroxylation catalyzed by CYP2R1, CYP27A1, and possibly other enzymes to produce 25-hydroxvitamin D (25D), which has a long half-life and is the major circulating vitamin D metabolite. 25D is modified by 1α -hydroxylation catalyzed by CYP27B1, which produces hormonal 1,25-dihydroxyvitamin D (1,25D).

The biological actions of 1,25(OH)2D3 are mediated by the VDR. VDR belongs to the steroid receptor family which includes receptors for retinoic acid, thyroid hormone, sex hormones, and adrenal steroids. The genomic mechanism of 1,25(OH)2D3 action involves the direct binding of the 1,25(OH)2D3 activated vitamin D receptor/retinoic X receptor (VDR/RXR) heterodimeric complex to specific DNA sequences. 1,25(OH)2D3 action regulates renal calcium reabsorption and phosphate loss, and thus control bone metabolism mainly indirectly by regulating mineral homeostasis.

Vitamin D deficiency increases rates of cancer, as well as autoimmune and infectious diseases. More than 3,000 vitamin D analogs are developed worldwide and several analogs demonstrated more potent antiproliferative and prodifferentating effects on cancer cell lines compared with 1,25(OH)2D3, which may lead to the development of new therapies to prevent and treat diseases.

References: [1] White JH. Infect Immun. 2008 Sep;76(9):3837-43. [2] Christakos S, et al. Physiol Rev. 2016 Jan;96(1):365-408.





Target List in Vitamin D Related



VD/VDR

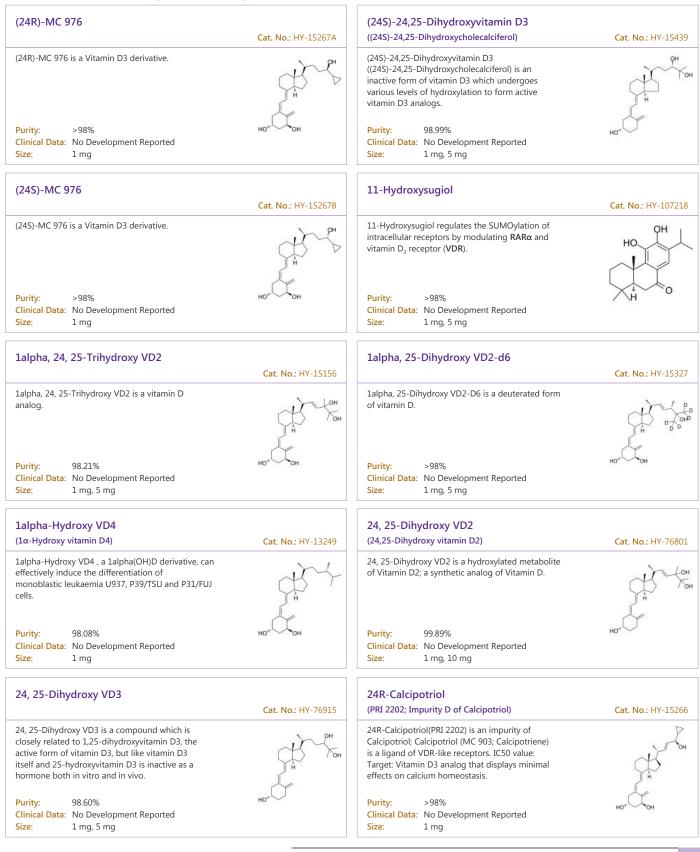
Vitamin D; Vitamin D receptor

Vitamin D is a secosteroidal prohormone, it can be synthesized at sufficient levels in skin, given adequate skin exposure to UV B radiation from sunlight. Vitamin D modulates its biological effects by directly regulating target gene expression through the Vitamin D receptor (VDR), a ligand-regulated transcription factor and a member of the nuclear receptor superfamily. Whether synthesized in the skin or ingested, vitamin D requires two hydroxylation steps to become the biologically active hormone, 1,25-dyhydroxyvitamin D_3 [1,25(OH)₂ D_3], a form that signals through the VDR. The hormone-bound VDR modulates target gene transcription in response to vitamin D. VDR acts as a master transcriptional regulator of autophagy. Activation of the VDR by vitamin D induces autophagy and an autophagic transcriptional signature in breast cancer (BC) cells.

There are 2 forms of vitamin D. Vitamin D_2 (ergocalciferol) comes from irradiation of the yeast and plant sterol ergosterol, and vitamin D_3 (cholecalciferol) is found in oily fish and cod liver oil and is made in the skin. Vitamin D represents vitamin D_2 and vitamin D_3 .

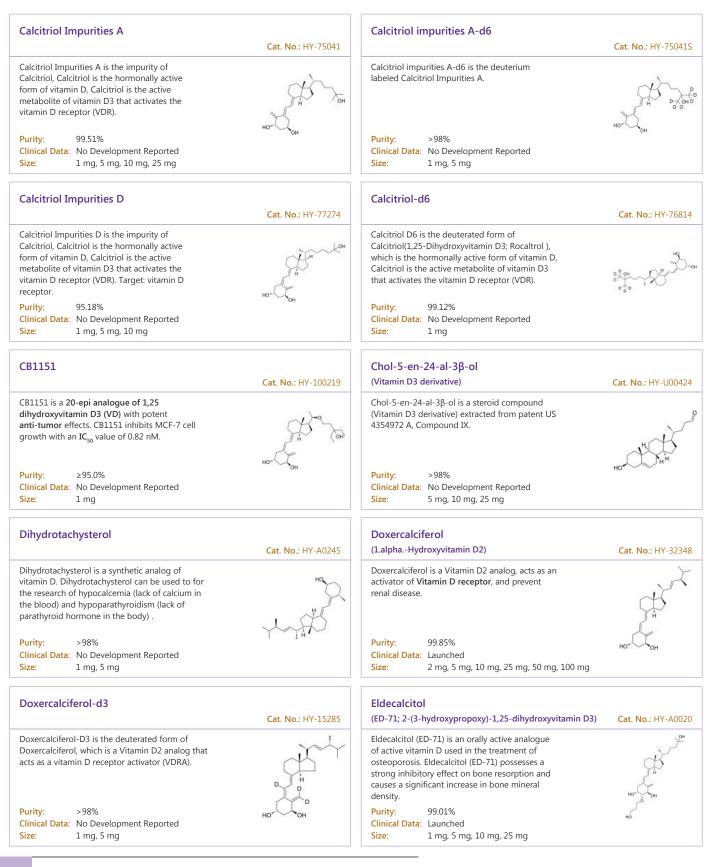
Topical agents containing active vitamin D_3 (calcitriol, 1 α , 25- dihydroxyvitamin D_3 , V D_3) analogues such as Tacalcitol, Calcipotriol and Maxacalcitol are widely used for psoriasis therapy.

VD/VDR Inhibitors, Agonists, Antagonists, Activators, Modulators & Chemicals



25,26-Dihydroxyvitamin D3		25,26-Dihydroxyvitamin D3-d3	
(25,26-Dihydroxyvitamin D3(25,26-dihydroxyvolecalciferol) is a metabolite of vitamin D3 with intestinal calcium transport activity.	Cat. No.: HY-15830	(25,26-Dihydroxycholecalciferol-d3) 25,26-Dihydroxyvitamin D3-d3 (25,26-Dihydroxycholecalciferol-d3) is the deuterium labeled 25,26-Dihydroxyvitamin D3.	Cat. No.: HY-158305
Purity:98.08%Clinical Data:No Development ReportedSize:1 mg, 5 mg, 10 mg		Purity:>98%Clinical Data:No Development ReportedSize:1 mg, 5 mg	
25-Hydroxy VD2-d6	Cat. No. : HY-15328	3-O-(2-Aminoethyl)-25-hydroxyvitamin D3 (25-Hydroxy Vitamin D3 3,3'-Aminopropyl Ether)	Cat. No.: HY-15254
25-Hydroxy VD2-D6 is a labelled metabolite of Vitamin D2.	H D D D	3-O-(2-Aminoethyl)-25-hydroxyvitamin D3 is a Vitamin D3 derivative.	H Y Y OH
Purity:98.96%Clinical Data:No Development ReportedSize:500 μg, 1 mg, 5 mg, 10 mg	HOr	Purity:99.73%Clinical Data:No Development ReportedSize:1 mg, 5 mg, 10 mg	HW. ~ 0. ~
5,6-trans-Vitamin D3 (5,6-trans-Cholecalciferol; 5,6-trans-Colecalciferol)	Cat. No. : HY-15398A	Alfacalcidol (1-hydroxycholecalciferol; 1.alphaHydroxyvitamin D3)	Cat. No.: HY-10003
5,6-trans-Vitamin D3 (5,6-trans-Cholecalciferol;5, 6-trans-Colecalciferol) is a photoproduct of vitamin D3. Vitamin D3 is a naturally occuring form of vitamin D. Vitamin D3 induces cell differentiation and prevents proliferation of cancer cells.	Hq i Sheri	Alfacalcidol (1-hydroxycholecalciferol) is a vitamin D active metabolites, acts as a non-selective VDR activator medication, and widely be used in the management of osteoporosis.	
Purity: 99.44% Clinical Data: No Development Reported Size: 5 mg		Purity: 99.93% Clinical Data: Launched Size: 5 mg, 10 mg, 25 mg, 50 mg, 100 mg	но-сон
Alfacalcidol-d6	Cat. No. : HY-15332	Alfacalcidol-d7 (1-hydroxycholecalciferol-d7; 1.alphaHydroxyvitamin D3-d7)	Cat. No.: HY-10003S
Alfacalcidol-D6, a deuterated Alfacalcidol (1-hydroxycholecalciferol; Alpha D3; 1.alphaHydroxyvitamin D3), is a non-selective VDR activator medication. IC50 value: Target: VDR activator Alfacalcidol (1-hydroxycholecalciferol; Alpha D3; 1.alpha.	HO COH	Alfacalcidol-d7 (1-hydroxycholecalciferol-d7) is the deuterium labeled Alfacalcidol. Alfacalcidol (1-hydroxycholecalciferol) is a vitamin D active metabolites, acts as a non-selective VDR activator medication, and widely be used in the management of osteoprosis.	H States
Purity: ≥ 98.0% Clinical Data: No Development Reported Size: 1 mg, 5 mg	WER: ESTO	Purity: >98% Clinical Data: No Development Reported Size: 1 mg, 5 mg	HOPLOH
Calcifediol (25-hydroxy Vitamin D3)	Cat. No. : HY-32351	Calcifediol monohydrate (25-hydroxy Vitamin D3 monohydrate)	Cat. No.: HY-32351A
Calcifediol (25-hydroxy Vitamin D3), a major circulating metabolite of vitamin D3, is a potent VDR inhibitor.	у Кон	Calcifediol monohydrate (25-hydroxy Vitamin D3 monohydrate), a major circulating metabolite of vitamin D3, is a potent VDR inhibitor.	С
Purity:99.94%Clinical Data:LaunchedSize:5 mg, 100 mg	HO	Purity:99.89%Clinical Data:LaunchedSize:5 mg, 100 mg	HO H2O

Calcifediol-d3		Calcifediol-d6	
(25-hydroxy Vitamin D3-d3)	Cat. No.: HY-32351S		Cat. No.: HY-13332
Calcifediol-d3 is a deuterium labeled Calcifediol. Calcifediol, a major circulating metabolite of vitamin D3, is a potent VDR inhibitor.		Calcifediol-D6 is the deuterated form of Calcifediol(25-hydroxy Vitamin D3), which is a prehormone that is produced in the liver by hydroxylation of vitamin D3 (cholecalciferol) by the enzyme cholecalciferol 25-hydroxylase IC50 value: Target: This metabolite is being	H D D D D D D D D D D D D D D D D D D D
Purity: 99.06% Clinical Data: No Development Reported Size: 1 mg, 5 mg, 10 mg		Purity:98.39%Clinical Data:No Development ReportedSize:500 µg, 1 mg, 5 mg, 10 mg	но
Calcifediol-d6 monohydrate (25-hydroxy Vitamin D3-d6 monohydrate)	Cat. No.: HY-32351AS	Calcipotriol (MC 903; Calcipotriene)	Cat. No.: HY-10001
	Cat. No.: HT-52551A5		Cat. No H1-10001
Calcifediol-d6 (25-hydroxy Vitamin D3-d6) monohydrate is the deuterium labeled Calcifediol monohydrate. Calcifediol monohydrate (25-hydroxy Vitamin D3 monohydrate), a major circulating metabolite of vitamin D3, is a potent VDR inhibitor.		Calcipotriol is a synthetic VitD ₃ analogue with a high affinity for the vitamin D receptor.	С Н Н Н Н
Purity: >98% Clinical Data: No Development Reported Size: 1 mg, 5 mg		Purity:99.77%Clinical Data:LaunchedSize:5 mg, 10 mg, 50 mg, 100 mg	HOPLOH
Calcipotriol Impurity C	Cat. No.: HY-75035	Calcipotriol Impurity C-d4	Cat. No.: HY-75035S
Calcipotriol Impurity C is the impurity of Calcipotriol, Calcipotriol is a ligand of VDR-like receptors. Target: VDR.	HQ. Jon Ho	Calcipotriol Impurity C-d4 is the deuterium labeled Calcipotriol Impurity C. Calcipotriol Impurity C is the impurity of Calcipotriol, Calcipotriol is a ligand of VDR-like receptors.	
Purity:99.20%Clinical Data:No Development ReportedSize:1 mg, 5 mg, 10 mg, 50 mg		Purity:>98%Clinical Data:No Development ReportedSize:1 mg, 5 mg	D
Calcipotriol monohydrate	Cat. No.: HY-10001A	Calcitetrol (1α, 24, 25-Trihydroxy VD3)	Cat. No.: HY-15157
Calcipotriol monohydrate is a synthetic VitD3 analogue with a high affinity for the vitamin D receptor.	J H	Calcitetrol(1 α , 24, 25-Trihydroxy VD3) is the hormonally active form of vitamin D with three hydroxyl groups.	JH
Purity: 99.75% Clinical Data: Launched Size: 5 mg, 10 mg, 50 mg, 100 mg	HO" HO	Purity:98.83%Clinical Data:No Development ReportedSize:1 mg, 5 mg	HOTCH
Calcitriol (1,25-Dihydroxyvitamin D3)	Cat. No.: HY-10002	Calcitriol Derivatives	Cat. No. : HY-76802
Calcitriol is the most active metabolite of vitamin D and also a vitamin D receptor (VDR) agonist.		Calcitriol Derivatives is a vitamin D3 analog. v.	
Purity: 99.81% Clinical Data: Launched Size: 2 mg, 5 mg, 10 mg, 50 mg, 100 mg	но-Сон	Purity: >98% Clinical Data: No Development Reported Size: 1 mg, 5 mg	м,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

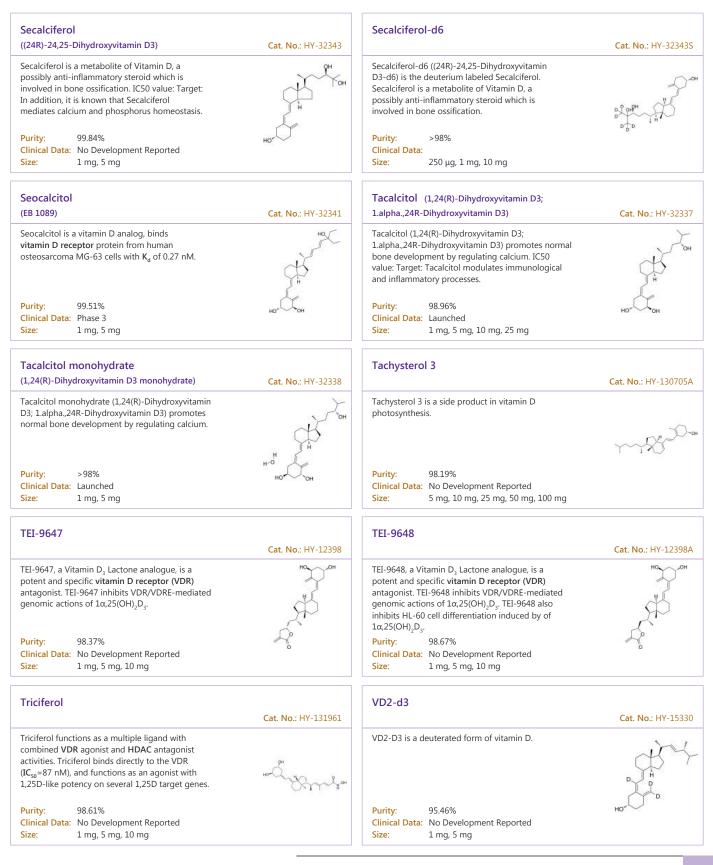


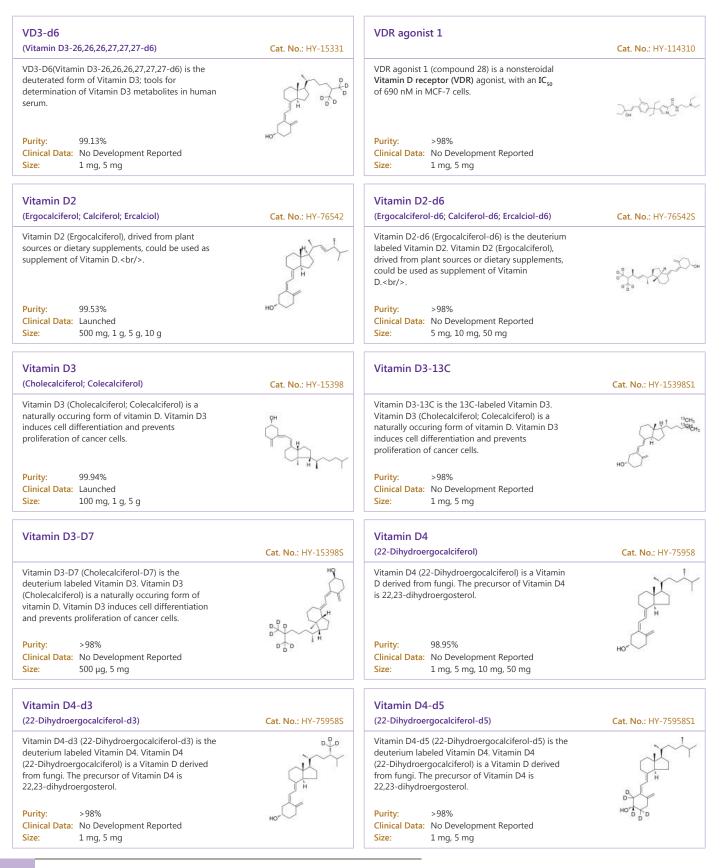
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Eldecalcitol-d6		Elocalcitol	
	Cat. No.: HY-A0020S	(BXL-628; Ro-26-9228)	Cat. No.: HY-32345
Eldecalcitol-d6 is the deuterium labeled Eldecalcitol. Eldecalcitol is an orally active analogue of active vitamin D used in the treatment of osteoporosis.	H D D D D D D D D D D D D D D D D D D D	Elocalcitol (BXL-628) is a selective, orally active vitamin D receptor (VDR) agonist. Elocalcitol shows anti-inflammatory activity. Elocalcitol inhibits growth of prostate cancer cells.	Jon Stor
Purity: 99.26% Clinical Data: No Development Reported Size: 1 mg	но тон о, он	Purity:>98%Clinical Data:No Development ReportedSize:1 mg, 5 mg	
Ercalcidiol (25-hydroxy Vitamin D2)	Cat. No.: HY-32349	Ercalcitriol (1α,25-Dihydroxy Vitamin D2)	Cat. No.: HY-32350
Ercalcidiol is a metabolite of vitamin $D_{2^{\prime}}$ is regarded as an indicator of vitamin D nutritional status.	CTT Set	Ercalcitriol (1α,25-Dihydroxy Vitamin D2) is an active metabolite of vitamin D2.	H. L.
Purity:99.04%Clinical Data:No Development ReportedSize:1 mg, 5 mg, 10 mg, 25 mg	HO	Purity:99.73%Clinical Data:No Development ReportedSize:1 mg, 5 mg, 10 mg, 25 mg	ног Сон
Ercalcitriol-13C,d3 (1α,25-Dihydroxy Vitamin D2-13C,d3)	Cat. No.: HY-32350S	Falecalcitriol	Cat. No.: HY-32342
Ercalcitriol-13C,d3 is the 13C- and deuterium labeled. Ercalcitriol (1α,25-Dihydroxy Vitamin D2) is an active metabolite of vitamin D2.		Falecalcitriol(Fulstan; Hornel) is an analog of calcitriol; has a higher potency both in vivo and in vitro systems, and longer duration of action in vivo.	μ μ μ μ μ μ μ μ μ μ μ μ μ μ μ μ μ μ μ
Purity:>98%Clinical Data:No Development ReportedSize:1 mg, 5 mg	HOFCOH	Purity:95.09%Clinical Data:LaunchedSize:1 mg	нот Сон
Impurity B of Calcitriol (1β,25-Dihydroxyvitamin-D3; 1-Epicalcitriol)	Cat. No. : HY-13292	Impurity C of Alfacalcidol	Cat. No.: HY-13294
Impurity B of Calcitriol, Calcitriol(1,25-Dihydroxyvitamin D3; Rocaltrol) is the hormonally active form of vitamin D, Calcitriol is the active metabolite of vitamin D3 that activates the vitamin D receptor (VDR).	H COH	Impurity of Alfacalcidol. Alfacalcidol (1-hydroxycholecalciferol; Alpha D3; 1.alphaHydroxyvitamin D3) is a non-selective VDR activator medication.	
Purity:98.04%Clinical Data:No Development ReportedSize:1 mg, 5 mg, 10 mg	ностон	Purity:99.81%Clinical Data:No Development ReportedSize:1 mg, 5 mg, 10 mg	HOT
Impurity C of Calcitriol	Cat. No.: HY-13293	Impurity F of Calcipotriol	Cat. No.: HY-15265
Impurity C of Calcitriol, Calcitriol(1,25-Dihydroxyvitamin D3; Rocaltrol) is the hormonally active form of vitamin D, Calcitriol is the active metabolite of vitamin D3 that activates the vitamin D receptor (VDR).		Impurity F of Calcipotriol; Calcipotriol (MC 903; Calcipotriene) is a ligand of VDR-like receptors. IC50 value: Target: Vitamin D3 analog that displays minimal effects on calcium homeostasis.	H H H
Purity:99.98%Clinical Data:No Development ReportedSize:1 mg, 5 mg, 10 mg	. L	Purity:99.40%Clinical Data:No Development ReportedSize:1 mg	X, a o o six

Impurity of Doxercalciferol		Inecalcitol	
	Cat. No.: HY-76937	(TX 522)	Cat. No.: HY-32344
Impurity of Doxercalciferol is an impurity of doxercalciferol, which is a synthetic analog of ergocalciferol (vitamin D2), used as a drug for secondary hyperparathyroidism and metabolic bone disease, and it suppresses parathyroid synthesis and secretion. Purity: 96.08%		Inecalcitol (TX 522), a unique vitamin D3 analog, is an orally active vitamin D receptor (VDR) agonist with a K_d of 0.53 nM. Inecalcitol can induce cell apoptosis and has potent anticancer activities.	HOT I THE TO
Clinical Data: No Development Reported Size: 10 mg, 25 mg	нослон	Purity: 98.11% Clinical Data: No Development Reported Size: 1 mg, 5 mg, 10 mg	
Lexacalcitol (KH1060)	C-4 No. (1)/ 22240	Maxacalcitol (22-Oxacalcitriol)	C-+ N UV 22220
	Cat. No.: HY-32340		Cat. No.: HY-32339
Lexacalcitol (KH1060), a vitamin D analog, is a potent regulator of cell growth and immune responses. Lexacalcitol can be used for the research of graft rejection, psoriasis, cancer and auto-immune diseases.	Энгер Сан	Maxacalcitol (22-Oxacalcitriol) is non-calcemic vitamin D3 analog and ligand of VDR-like receptors.	H Solution
Purity: 99.42% Clinical Data: No Development Reported Size: 1 mg, 5 mg, 10 mg		Purity: 99.71% Clinical Data: Launched Size: 1 mg, 5 mg, 10 mg, 25 mg	HOTCH
Maxacalcitol-d6	Cat. No. : HY-15329	MC 1046 (Impurity A of Calcipotriol)	Cat. No.: HY-15264
Maxacalcitol-D6 is the deuterated form of Maxacalcitol (22-Oxacalcitriol), which is a non-calcemic vitamin D3 analog and VDR ligand of VDR-like receptors. Purity: 96.80% Clinical Data: No Development Reported Size: 1 mg, 5 mg	HO" COH	MC 1046(Impurity A of Calcipotriol) is an impurity of Calcipotriol; Calcipotriol (MC 903; Calcipotriene) is a ligand of VDR-like receptors. IC50 value: Target: Vitamin D3 analog that displays minimal effects on calcium homeostasis. Purity: 91.48% Clinical Data: No Development Reported Size: 1 mg	HORGOH
MC 976	Cat. No. : HY-15267	Paricalcitol	Cat. No.: HY-50919
MC 976 is a Vitamin D3 derivative.	Hof	Paricalcitol, a vitamin D analogue, is a vitamin D receptor agonist, used for the prevention and treatment of secondary hyperparathyroidism (excessive secretion of parathyroid hormone) associated with chronic renal failure.	
Purity: >98% Clinical Data: No Development Reported Size: 1 mg	но ССон	Purity:99.96%Clinical Data:LaunchedSize:1 mg, 5 mg, 10 mg	но-сон
Paricalcitol-d6	Cat. No. : HY-76585	Previtamin D3	Cat. No. : HY-130705
Paricalcitol-D6 is the deuterated form of Paricalcitol(Zemplar), which is a drug used for the prevention and treatment of secondary hyperparathyroidism (excessive secretion of parathyroid hormone) associated with chronic renal failure.		Previtamin D3 is an intermediate in the production of cholecalciferol (vitamin D3).	
Purity: 99.64% Clinical Data: No Development Reported Size: 1 mg, 5 mg, 10 mg	но" Оч	Purity:98.68%Clinical Data:No Development ReportedSize:5 mg, 10 mg	

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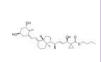


ZK159222

Cat. No.: HY-12397

ZK159222, a 25-carboxylic ester analogue of 1 α ,25-(OH)2D3, is a potent 1 α ,25-(OH)2D3 receptor (VDR) antagonist. The mechanism of ZK159222 antagonistic action is mediated by a lack of ligand-induced vitamin D receptor interaction with coactivators. Purity: 98.59%

r unity.	50.5570
Clinical Data:	No Development Reported
Size:	1 mg



ZK168281

ZK168281 is a 25-carboxylic ester $1\alpha,25(OH)_2D_3$ analog and a pure VDR antagonist with a K_d value of 0.1 nM. ZK168281 is an effective inhibitor of the coactivator (CoA) interaction of its receptor.

 Purity:
 98.43%

 Clinical Data:
 No Development Reported

 Size:
 1 mg

Cat. No.: HY-12407

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