

# Assay Notes

## Cascadion SM 25-Hydroxy Vitamin D Assay



Up to 90% of the global population, depending on location and season, suffers from Vitamin D deficiency or insufficiency, making supplementation necessary. Vitamin D assays are subject to interference from many sources, from Vitamin D metabolites to common dietary supplements complicating the demand for testing.

*The interference in testing may mask insufficiency and delay necessary treatment*

The Centers for Disease Control and Prevention (CDC) has established the liquid chromatography – tandem mass spectroscopy (LC-MS/MS) method as the reference method for Vitamin D testing. This method eliminates the interferences and measures only the relevant fractions ergocalciferol (D<sub>2</sub>) and cholecalciferol (D<sub>3</sub>).

The Thermo Scientific™ Cascadion™ SM 25-Hydroxy Vitamin D assay is the first LC-MS/MS 25-Hydroxy Vitamin D assay to be run on an easy to use fully automated clinical analyzer. The assay maximizes accuracy by measuring 100% of both the 25-Hydroxy Vitamin D<sub>2</sub> and D<sub>3</sub> fractions, with the individual results available to the operator, and by excluding both C3 epimers.

*Cascadion SM Clinical Analyzer provides superior accuracy and precision with its 25-Hydroxy Vitamin D assay*

	Vitamin D <sub>2</sub>	Vitamin D <sub>3</sub>	Total Vitamin D
<b>Lower limit of analytical measuring range</b>	3.4 ng/ml	3.4 ng/ml	3.4 ng/ml
<b>Analytical measuring range</b>	3.4 ng/ml – 132 ng/ml	3.4 ng/ml – 132 ng/ml	3.4 ng/ml – 264 ng/ml
<b>Day-to-Day precision (CV)</b>	3.2 - 6.1 %	2.9 - 7.6 %	2.3 - 7.6 %
<b>Accuracy of CDC-certified reference samples (n=115)</b>	N/A	N/A	1.04 x CDC - 1.582 ng/ml R=0.9966

## Non-interfering compounds

Non-interfering Endogenous and Exogenous Compounds	Non-interfering Metabolites and Compounds with Similar Chemical Structures
Bilirubin	1,25-(OH) <sub>2</sub> Vitamin D <sub>2</sub>
Cholesterol	1,25-(OH) <sub>2</sub> Vitamin D <sub>3</sub>
Triglycerides	Vitamin D <sub>2</sub> (Ergocalciferol)
β-D-Glucose	Vitamin D <sub>3</sub> (Cholecalciferol)
Hemoglobin	25(OH) Vitamin D <sub>2</sub>
Rheumatoid Factor	25(OH) Vitamin D <sub>3</sub>
Biotin	24,25 (OH) <sub>2</sub> Vitamin D <sub>3</sub>
Ascorbic Acid	24,25 (OH) <sub>2</sub> Vitamin D <sub>2</sub>
Acetaminophen	3-Epi-1,25-(OH) <sub>2</sub> Vitamin D <sub>2</sub>
Pantoprazole	3-Epi-1,25-(OH) <sub>2</sub> Vitamin D <sub>3</sub>
Loratadine	3-Epi-25-(OH) Vitamin D <sub>2</sub>
Human γ Globulin, Human Albumin	3-Epi-25-(OH) Vitamin D <sub>3</sub>
Cholic Acid	25,26-(OH) <sub>2</sub> Vitamin D <sub>3</sub>
Sitagliptin	Mesoridazine

Tested substances showing a <10% bias were designated as non-interfering.

Using gold-standard LC-MS/MS technology without requiring manual sample preparations the Cascadion SM Clinical Analyzer delivers accurate and reproducible sample concentrations.

- Direct sampling of serum and plasma from the primary tube
- Maximizing accuracy by measuring 100% of both the 25-OH Vitamin D<sub>2</sub> and D<sub>3</sub> fractions
- Excluding C3 Epimers
- NIST-traceable Calibrators and Controls
- Calibration stable for up to 30 days
- Reporting Total 25-OH-Vitamin D together with components

*Ready to use Internal Standard, Calibrators, and Controls*



## Ordering information

Product	Size	Cat. No.
<b>Cascadion SM 25-Hydroxy Vitamin D Assay</b>		
Cascadion SM 25-Hydroxy Vitamin D Calibrator Set	6 x 5 mL	10018760
Cascadion SM 25-Hydroxy Vitamin D Control 1	6 x 10 mL	10018761
Cascadion SM 25-Hydroxy Vitamin D Control 2	6 x 10 mL	10018762
Cascadion SM 25-Hydroxy Vitamin D Control 3	6 x 10 mL	10018763
Cascadion SM 25-Hydroxy Vitamin D Internal Standard	8 x 29 mL	10018764

## Thermo Fisher Scientific Oy:

Ratastie 2, FI-01620 Vantaa, FINLAND  
Tel. +358 10 329 200

Find out more at [thermofisher.com/cascadion](https://thermofisher.com/cascadion)

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