



Vitamin D in Serum/Plasma LC-MS/MS Analysis Kit

Vitamin D plays a vital role in skeletal metabolism, calcium homeostasis, and also in the functioning of the immune, cardiovascular, and reproductive systems. Vitamin D deficiency leads to rickets and osteomalacia and is also associated with breast and colorectal cancers, multiple sclerosis, dementia, rheumatoid arthritis, diabetes, Parkinson's and Alzheimer's diseases. Consequently, laboratory testing of serum vitamin D levels has experienced phenomenal growth over the past several years. LC-MS/MS is currently the best technique available for the correct quantification of 25-Hydroxy Vitamin D₃ and 25-Hydroxy Vitamin D₂.

Highlights of the Analysis Kit



Simultaneous quantification of 25-hydroxyvitamin D₂ and D₃



Total run time 8.5 min.



Single sample preparation for all steroid hormones with liquid-liquid extraction and protein precipitation without SPE



Long life span of HPLC column

Parameters

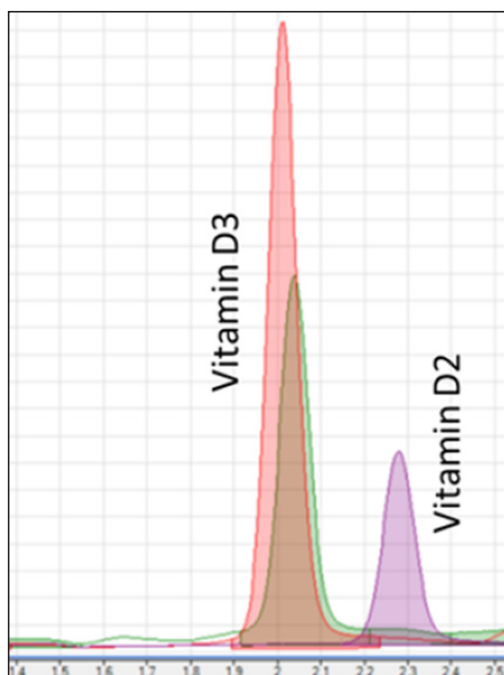
25-Hydroxyvitamin D2 & D3

Sample Type

Serum/Plasma

Sample Preparation

| | |
|---|---|
| 1 | Pipette 200 μ L of the serum sample into a microcentrifuge tube |
| 2 | Add 100 μ L of Reagent-1, vortex for 5 sec. |
| 3 | Add 25 μ L of internal standard solution and additionally vortex for 5 sec. |
| 4 | Add 975 μ L of Reagent-2 and vortex for 15 sec. Then, centrifuge at 3000 rpm for 5 min. |
| 5 | Transfer the supernatant into an HPLC vial prior to LC-MS/MS analysis |



Total ion chromatogram of vitamin D3 and D2

Method Performance

All results were obtained using Agilent 6470 QQQ system

| Analytes | LOQ (µg/L) | Linearity (µg/L) | Recovery (%) | | Repeatability (%CV) | |
|------------------|---------------|---------------------|-----------------|--------|------------------------|------|
| | | | LLQC* | HLQC** | LLQC | HLQC |
| 25-OH-Vitamin D2 | 3.58 | 12.0 – 120.0 | 117 | 112 | 1.98 | 3.15 |
| 25-OH-Vitamin D3 | 3.22 | 13.0 – 130.0 | 93 | 94 | 2.79 | 2.69 |

*LLQC: Low-level quality control

** HLQC: High-level quality control



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