

Vitamin D, 25 - OH (25-hydroxy vitamin D2+D3)

Analyte: Vitamin D, 25-hydroxy

Specimen Type: Serum Inquire for additional option(s)

Optimum Volume: 0.5 mL

Stability:

| 2-8 Degrees C | -20 Degrees C | -70 Degrees C |
|---------------|---------------|---------------|
| 7 days | 1 year | 3 years |

Reporting Units: ng/mL

Method: RIA

Biological or Clinical Significance:

Vitamin D, also known as calciferol; is a group of fat-soluble secosteroids, the two major physiologically relevant forms of which are vitamin D2 (ergocalciferol) and vitamin D3 (cholecalciferol). Vitamin D without a subscript refers to either D2 or D3 or both.

Vitamin D3 is derived mainly from actions of ultraviolet light on the skin while D2 is derived solely from dietary sources. Since these two parent compounds provide various contributions to the overall vitamin D status of the individual, it is important that both forms are measured equally.

As (Vitamin D) enters the circulation, it is metabolized to several forms, the majority of these being 25-hydroxycalciferol (25-OH-D). The first step in the metabolism of vitamin D, 25-hydroxylation, occurs mainly in the liver. Only a small amount of 25-OH-D is metabolized in the kidney to other dihydroxyvitamin D metabolites. Since 25-OH-D is the predominant circulating form of vitamin D in the population, it is considered to be the most reliable index of vitamin D status.

The measurement of 25-OH-D is becoming increasingly important in the management of patients with various disorders of calcium metabolism associated with postmenopausal osteoporosis, neonatal hypocalcemia, pregnancy, nutritional and renal osteodystrophy, hypoparathyroidism, and rickets.

Principle of Test Method:

The 25-(OH) Vitamin D assay is a radioimmunoassay with sample extraction.

References:

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2. Fenske JS, Pieper KA, Belisle KJ, Eastvold M, Singh RJ. LC-MS/MS analysis of 25 OH vitamin D2 and D3 compared to the Diasorin Liaison and RIA methods (abstract). Clin Chem 2005; 51(Suppl 6): A114-A115.
3. Terry AH, Sanrock T, Meikle AW. Measurement of 25-hydroxyvitamin D by the Nichols Advantage, DiaSorin Liaison, DiaSorin RIA, and Liquid Chromatography-Tandem Mass Spectrometry. Clin Chem 2005; 51: 1565-1566.
4. Lensmeyer GL, Wiebe DA, Binkley N, Drezner MK. HPLC method for 25-hydroxyvitamin D measurement: Comparison with contemporary assays. Clin Chem 2006; 52:1120-1126.
5. Souberbielle J-C, Fayol V, Sault C, Lawson-Body E, Kahan A, Cormier C. Assay-specific decision limits for two new automated parathyroid hormone and 25-hydroxyvitamin D assays. Clin Chem 2005; 51: 395-400. 42.
6. Woolton AM. Improving the Measurement of 25-hydroxyvitamin D. Clin Biochem Rev. 2005; 26(1) 33-36.