

Vitamin D2/D3, 25 Hydroxy by LC-MS/MS

CPT Code: 82306

Order Code: C277

Includes: Vitamin D2 (Ergocalciferol), Vitamin D3 (Cholecalciferol), and Total Vitamin D (25-Hydroxycalciferol)

ABN Requirement: No

Synonyms: Vitamin D (D2 and D3); 25-Hydroxycalciferol; 25-OH-D; Cholecalciferol Metabolite

Specimen: EDTA Plasma or Serum

Volume: 0.5 mL

Minimum Volume: 0.2 mL

Container: EDTA (Lavender Top tube) or Gel-barrier tube (SST, Tiger Top)

Collection:

EDTA Plasma:

1. Draw and gently invert 8 to 10 times.
2. Centrifuge for 10 minutes.
3. Pre-squeeze transfer pipet bulb and draw off approximately 2/3 of the upper plasma layer.
Note: *This ensures that the buffy coat and red cells remain undisturbed.*
4. Aliquot plasma into labeled transport tube labeled as "EDTA plasma" and cap tightly. Discard original tube.
5. Store transport tube refrigerated at 2-8°C until ready to ship.

Serum:

1. Collect and label sample according to standard protocols.
2. Gently invert tube 5 times immediately after draw. DO NOT SHAKE.
3. Allow blood to clot 30 minutes.
4. Centrifuge for 10 minutes.

Special Instructions: Minimize sample exposure to direct sunlight.

Transport: Store plasma at 2°C to 8°C after collection and ship the same day per

packaging instructions provided with the Cleveland HeartLab shipping box.

Stability:

Ambient (15-25°C): 21 days

Refrigerated (2-8°C): 21 days

Frozen (-20°C): 185 days

Deep frozen (-70°C): 185 days

Causes for Rejection: Specimens other than EDTA plasma or serum; improper labeling; samples not stored properly; samples older than stability limits; or grossly hemolyzed samples.

Methodology: High Performance Liquid Chromatography/Tandem Mass Spectrometry (LC-MS/MS)

Turn Around Time: 3 to 5 days

Relative Risk - Status of Vitamin D Sufficiency

Comment: Vitamin D, 25-Hydroxy reports concentrations of two common forms, 25-OHD₂ and 25-OHD₃. 25-OHD₃ indicates both endogenous production and supplementation. 25-OHD₂ is an indicator of exogenous sources, such as diet or supplementation. Therapy is based on measurement of Total 25-OHD, with levels <20 ng/mL indicative of Vitamin D deficiency, while levels between 20 ng/mL and 30 ng/mL suggest insufficiency. Optimal levels are ≥30 ng/mL.

Vitamin-D is fat-soluble and therefore inadvertent or intentional ingestion of excessively high amounts could be toxic. Studies in children and adults suggest blood levels would need to exceed 150 ng/ml before there is any concern. Holick MF, Binkley NC, Bischoff-ferrari HA, et al. Evaluation, treatment, and prevention of vitamin D deficiency: an Endocrine Society clinical practice guideline. J Clin Endocrinol Metab.2011;96(7):191130.

Use: Monitoring vitamin D status

Clinical Significance: Vitamin D is a fat-soluble vitamin and plays a major role in calcium homeostasis. Deficiency of vitamin D and subsequent hypocalcaemia have been linked to many skeletal disorders including osteoporosis. Recent studies have shown evidence that vitamin D is linked to protecting the body from a wide range of diseases. Diseases linked to vitamin D deficiency include stroke,

cardiovascular disease, osteoporosis, several forms of cancer, multiple sclerosis, rheumatoid arthritis, type 1 and type 2 diabetes.

Vitamin D exists in two forms, ergocalciferol (vitamin D2) and cholecalciferol (vitamin D3). Vitamin D2 does not occur naturally but is manufactured commercially by irradiating the fungal derived component, ergosterol. Vitamin D2 is the predominant form obtained by prescription in the U.S. Vitamin D3 is produced endogenously from the action of ultraviolet light on the vitamin D precursor, 7-dehydrocholesterol, found in the skin. Vitamin D3 is also found in some foods, over-the-counter vitamin D supplements, and products that contain cholecalciferol. Vitamin D2 and D3 are hydroxylated in the liver to form their 25-hydroxy metabolites (25-hydroxyvitamin D2 and 25-hydroxyvitamin D3). These metabolites are further hydroxylated, primarily in the kidneys, to form 1,25-dihydroxyvitamin D2 and 1,25-dihydroxyvitamin D3, which are the highly active and bind to specific vitamin D receptors in target tissues.

The CPT codes provided are based on AMA guidelines and are for informational purposes only. CPT coding is the sole responsibility of the billing party. Please direct any questions regarding coding to the payer being billed.