TEST: Vitamin D, 25-OH, Total level

PRINCIPLE:
Vitamin D is a fat soluble hormone that plays important role in regulation of calcium and phosphorus homeostasis imperative for bone health. Moreover, more evidence is accumulating in support of Vitamin D's role in cardiovascular diseases, cancers, autoimmune diseases[1]. Vitamin D obtained from sun exposure (D3 type), food (D3 or D2 type), and supplements (D3 or D2 types) is converted in liver into Vitamin D, 25-OH. Vitamin D, 25-OH is the major circulating form of vitamin D and the precursor of the active form (Vitamin D, 1,25-(OH)2). Because Vitamin D, 25-OH is the most stable vitamin D metabolite in human serum with half-life of approximately 3 weeks, its measurements are important for assessing vitamin D status in patients. Test result may be used in conjunction with other clinical or laboratory data to assist the clinician in patient management.
Vitamin D, 25-OH, Total level test is designed to recognize and measure both types of Vitamin D, 25-OH (D2 and D3) equally. Total Vitamin D test is a competitive immunoassay performed using the VITROS 25-OH Vitamin D Total Reagent Pack and the VITROS ECi Immunodiagnostic System[2]. The Vitamin D, 25-OH in the sample competes with the horseradish peroxidase (HRP) labeled Vitamin D, 25-OH conjugate for monoclonal anti-Vitamin D bound to the reaction wells. The HRP in the bound conjugate catalyzes the oxidation of the luminol derivative, producing light that is read by the system. The amount of HPR conjugate bound is indirectly proportional to the concentration of Vitamin D, 25-OH present in serum sample[2].

SPECIMEN REQUIREMENTS:
2ml collected in a serum separator tube (gel barrier). Separate serum from cells ASAP or within 2 hours of collection by centrifugation. Stability after separation from cells: Ambient: 72 Hours; Refrigerated: 1 week; Frozen: 1 year (avoid repeated freeze/thaw cycles).

REJECTION CRITERIA: Plasma or other body fluids. Gross hemolysis

METHOD:
Enhanced chemiluminescence, competitive immunoassay.

REFERENCES:
1. Michael F.Hollick. Vitamin D deficiency. The New England Journal of Medicine, 2007, 357: 266-281.
2. Vitros Immunodiagnostic Products 25-OH Vitamin D total reagent pack. Pub No GEM1361_US_EN.
3. Endocrine Society Guidelines: Holick MF et al, Evaluation, treatment, and Prevention of Vitamin D Deficiency: an Endocrine Society Clinical Practice guideline. J.Clin.Endocrin Metab. July 2011, 96 (7).
The recommendation for Vitamin D, 25-OH levels are based on the Endocrine Society Clinical Practice guideline[3]:

Deficient <20 ng/ml	Insufficient 20 - <30 ng/ml
Sufficient 30 - 100 ng/ml	Upper Safety Limit >100 ng/ml

TURNAROUND TIME: 3 business days