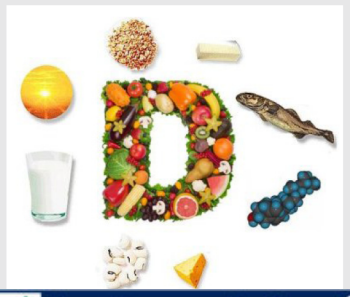
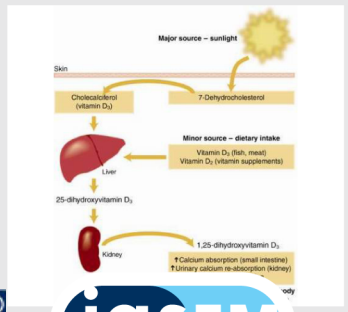




NEW!

interchim®

jasem

25-OH Vitamin D_2- D_3 and 3-epi-25-OH Vitamin D_3 Analysis in HUMAN SERUM by LC-MS/MS

Jasem® Method: Accuracy – High Speed – Simplicity in New Dimensions !

® Patent pending

The aim of single analysis is to identify and quantify

25-OH Vitamin D_2
25-OH Vitamin D_3
epi-25-OH Vitamin D_3

In humans, vitamin D is unique because it can be ingested as cholecalciferol (**vitamin D_3**) or ergocalciferol (**vitamin D_2**) and because the body can also synthesize it from cholesterol when sun exposure is adequate, hence its nickname, the **„sunshine vitamin“.**

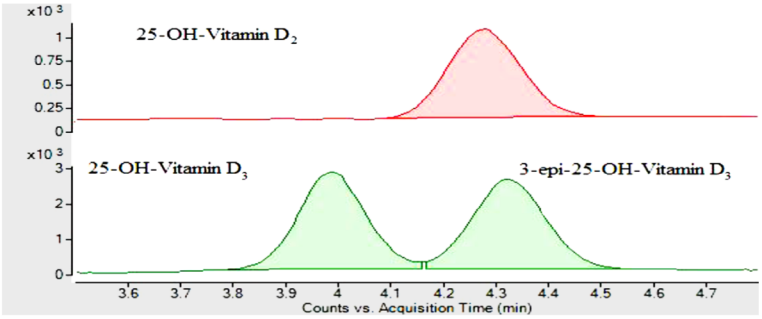
Why 3-epi-25(OH)D_3 is important !

The physiological importance of 3-epi-25(OH)D_3 is uncertain but might affect 25-hydroxyvitamin D test results and thereby reliability of the 25-hydroxyvitamin D_3 [25(OH) D_3] measurement.

The C-3 Epimer of 25-Hydroxyvitamin D_3 Is Present in Adult Serum. G. Lensmeyer, M. Poquette, D. Wiebe and N. Binkley

The Journal of Clinical Endocrinology & Metabolism October 19, 2011 jc.2011-0584

Extracted Ion Chromatogramm



Extracted Chromatogram of spiked serum sample

Features of Jasem® method

- Monitoring also 3-epi-25-OH Vitamin D_3
- Very easy sample preparation
- No need for on-line SPE or SPE
- Use of standard HPLC system methods
- Zero source contamination
- Column life time better than 15.000 injection
- No need to use labelled internal standard
- no matrix effect / no ion suppression
- ESI MS interface

Benefits & Advantages of Jasem® method

- more accurate results, lower cost
- Quick and easy sample preparation time 5.5 minutes (one tube sample prep)
- More sample per day (run time within 6 min.)
- Less frequent maintenance
- More productivity
- Excellent repeatability typically RSD lower than 1%
- Excellent accuracy
- Easy method change to other analytes

jasem

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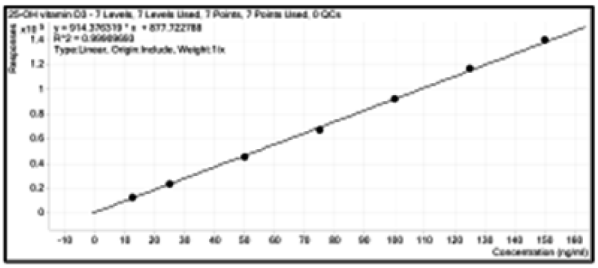
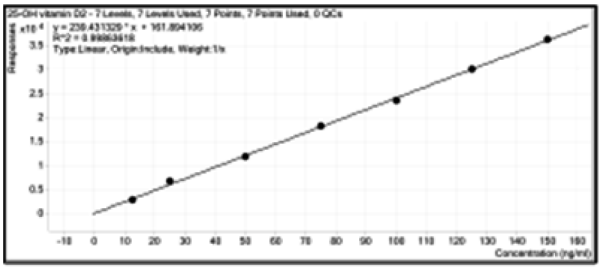
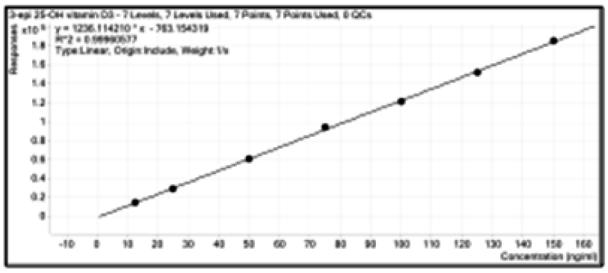


25-OH Vitamin D_3 calibration curve
from 12.5 ppb to 150 ppb



25-OH Vitamin D_2 calibration curve
from 12.5 ppb to 150 ppb



3-epi-25-OH Vitamin D_3 calibration curve
from 12.5 ppb to 150 ppb

Compound	R^2	LOQ (ppb)	LOD (ppb)
25-OH Vitamin D2	0.9986	1.6	0.5
25-OH Vitamin D3	0.9990	0.9	0.3
3-epi-25-OH Vitamin D3	0.9996	0.9	0.3

Why is all over the world medical interest in Vitamin D analysis so rapidly growing ?

Note :

Vitamin D_3 is most often preferred to use for supplementation and fortification. In the United States, vitamin D_2 is in the major form available in supplements and fortified foods. In Europe, vitamin D_3 is more abundantly used.

There are specific health reasons, why governments and private industries, like pharmaceutical companies, are heavily investing in analysis of blood serum in order to find ways to fight the negative impacts of Vitamine-D deficiency to the human body :

- 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.
- E.g. Mayo Medical Laboratory reported vitamin-D testing volumes increased between 80% and 90% per year (* El-Khoury, J.M. et. al., (2011), Clinical Biochemistry, 44, 66-76.)
- LC-MS/MS is currently the best, reliable technique available for the correct quantification of 25-OH Vitamin D_2 and 25-OH Vitamin D_3

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