



## 25(OH) Vitamin D Controls

Catalog Number: ADI-900-215-CTL

Size: 1 vial/low, 1 vial/high

### Background

Recent research efforts have shown that Vitamin D levels affect various disease states and are being linked with numerous indicators of well-being in humans. These include bone diseases such as osteoporosis and arthritis, but also additional disease including hypertension, diabetes, cancer and heart disease to name a few<sup>1</sup>.

The transformation to the active form of Vitamin D begins with 7-dehydrocholesterol being acted upon by UV rays from the sun to form parent Vitamin D<sub>3</sub>. Alternatively, Vitamin D can be ingested as parent Vitamin D<sub>2</sub> from various food sources, native or fortified. These parent compounds are transported to the liver and undergo hydroxylation to 25(OH) Vitamin D. This metabolite is then transported to the kidney where it undergoes a second hydroxylation to 1,25(OH)<sub>2</sub>Vitamin D, the biologically active form of Vitamin D<sup>2</sup>. It is important to note that levels of Vitamin D metabolites increase proportionately with increased uptake of parent Vitamin D. This combined with the greater half-life and stability of 25(OH) Vitamin D in circulation versus the active form (25 days versus 8 hours)<sup>3</sup> are the reasons that the detection of the 25(OH) Vitamin D metabolite is used as the indicator for total Vitamin D concentration.

### Intended Use and Description

The intention is for these products to be used as quantitative controls for the determination of 25(OH) Vitamin D concentration in biological matrices, such as serum and plasma. The concentrations have been determined using the Enzo Life Sciences 25(OH) Vitamin D ELISA kit (ADI-900-215-0001). The liquid controls were prepared in a serum-like diluent and contain 25(OH) Vitamin D<sub>3</sub> at a high and low concentration.

### Storage and Stability

The liquid controls should be stored at or below -20°C. The controls can be stored at -20°C short term but should be stored at -80°C for long term storage. The material should be used before the expiration date indicated on the lot specific Certificate of Analysis.

### Reagent Preparation

The liquid controls are prepared at the working concentration and should be added directly to the plate to be assayed. They are intended to be single-use only.

### Procedure and Expected Values

Please refer to the appropriate lot specific CoA for lot specific ranges for the high and low 25(OH) Vitamin D controls.



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### Technical Information

- The lot specific ranges described on the CoA were determined using the Enzo Life Sciences 25(OH) Vitamin D ELISA Kit (ADI-900-215-0001). Use of ELISA kits other than the 25(OH) Vitamin D ELISA Kit (ADI-900-215-0001) could result in values different than those printed on the corresponding lot Certificate of Analysis.
- Additionally, if the expected values are not obtained please confirm that the correct volume of the control was assayed.

### References

1. Holick, M. (2011). Vitamin D: Evolutionary, physiological and health perspectives. *Current Drug Targets* 12, 4-18.
2. Dusso, A. et al. (2005). Vitamin D. *American Journal of Physiology Renal Physiology* 289, F8-F28.
3. Lips, P. (2009). The relative value of 25(OH)D and 1,25(OH)<sub>2</sub>D measurements. *Endocrine Abstracts* 20, ME11.

Kit booklet number: 25-0777

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