

Appendix S1

Calculated free was measured using the following equation by Bikle (27) and as described before (21):

$$\text{Calculated free 25(OH)D} = \frac{\text{Total 25(OH)D}}{1 + (6 \times 10^3 \times [\text{Albumin}]) + (7 \times 10^8 \times [\text{DBP]})}$$

Where:

the affinity constant of DBP for 25(OH)D = $7 \times 10^8 \text{M}^{-1}$

the affinity constant of albumin for 25(OH)D = $6 \times 10^3 \text{M}^{-1}$

[DBP] = serum DBP concentration in g/l ÷ 66,430 g/mol

[Albumin] = serum albumin concentration in g/l ÷ 58,000 g/mol.