
## DISCOVER DIASOURCE KEY ANTIBODIES FROM THE BONE METABOLISM PANEL

Bone metabolism refers to the continuous process by which bone tissue is renewed by osteoblasts and maintained through resorption by osteoclasts. This cycle ensures that bones remain strong, repair themselves, and adapt to stress. It's regulated by hormones, nutrients and physical activity. Disruption in bone metabolism can lead to conditions like osteoporosis, where bones become weak and brittle.

The following biomarkers are crucial tools for the early detection, monitoring, and management of bone health and metabolic bone diseases.

### 1,25(OH)2 Vitamin D

1,25(OH)2 Vitamin D is the biologically active form of Vitamin D, and binds to the Vitamin D Receptor (VDR). It originates from the hydroxylation of 25OH Vitamin D, and its production is under the control of PTH. The measurement of 1,25(OH)2 Vitamin D is essentially used in the assessment of Vitamin D status in patients with renal disease, but also in renal transplant recipients, in adults under 1OH Vitamin D treatment, in children under therapy known to affect bone mineral status, in children with bone tumors, and in the diagnosis of hypophosphatemic rickets/osteomalacia.

Our 1,25(OH)2 Vitamin D Monoclonal Antibodies recognized the two forms, D2 and D3, of the molecule, which is a must-have nowadays.

**Antibodies**

| Cat# | Name | Size | Type | Subtype | Clone/Host | Format |
|---|---|---|---|---|---|---|
| 5319316 | Monoclonal Antibody against 1,25(OH)$_2$ Vitamin D2/D3 | 1mg | Monoclonal Antibody[1] | Tail | 283/C4 GF3 Mouse | Purified, Unconjugated |
| 5319256 | Monoclonal Antibody against 1,25(OH)$_2$ Vitamin D2/D3 | 1mg | Monoclonal Antibody[1] | Tail | EG4 | Purified, Unconjugated |

## 25OH Vitamin D

25OH Vitamin D is produced from Vitamin D, in the liver, through the action of an enzyme. It represents the storage form of Vitamin D in the body, and is metabolized to the active 1,25(OH)2 Vitamin D under the control of PTH. The measurement of 25OH Vitamin D is the best test to assess Vitamin D deficiency in the general and pathological population. It is also used to monitor Vitamin D supplementation, and to identify hypervitaminosis D.

Our 25OH Vitamin D Monoclonal Antibodies recognized the two forms, D2 and D3, of the molecule, which is a must-have nowadays.

In addition, we have developed a specific collection of Vitamin D analogues that pair with our antibodies and from other antibodies from the market.

Furthermore, DiaSource offers a wide panel of unique displacement solutions, mandatory to release 25OH Vitamin D from its binding proteins, that are compatible with most of the 25OH Vitamin D antibodies.

**Antibodies**

| Cat# | Name | Size | Type | Subtype | Clone/Host | Format |
|---|---|---|---|---|---|---|
| 5319706 | Monoclonal Antibody against 25OH Vitamin D2/D3* | 1mg | Monoclonal Antibody(1) | Tail | LMBP 7013CB | Purified, Unconjugated |
| 5319716 | Monoclonal Antibody against 25OH Vitamin D2/D3* | 1mg | Monoclonal Antibody(1) | Tail | LMBP 7012CB | Purified, Unconjugated |
| 5319726 | Monoclonal Antibody against 25OH Vitamin D2/D3* | 1mg | Monoclonal Antibody(1) | Tail | LMBP 7011CB | Purified, Unconjugated |
| 5319835 | Polyclonal Antibody against 25OH Vitamin D2/D3 | 100µl | Polyclonal Antibody(1) | Tail | Rabbit | Crude |

**Antigens & Conjugates**

| Cat# | Name | Size | Type | Subtype | Clone/Host | Format |
|---|---|---|---|---|---|---|
| 5019700 | Vitamin D derivative - Carboxylic acid | 1mg | Antigen/ Conjugate(1) | Tail | NA | Purified, Carboxylic acid (COOH) |
| 5019701 | Vitamin D derivative - BSA conjugate | 1mg | Antigen/ Conjugate(1) | Tail | NA | Purified, BSA conjugate |
| 5019703 | Vitamin D derivative - amino | 1mg | Antigen/ Conjugate(1) | Tail | NA | Purified, Amino (NH2) |
| 5019708 | Vitamin D derivative - biotin conjugate | 1mg | Antigen/ Conjugate(1) | Tail | NA | Purified, Biotin conjugate |
| 5019502 | Vitamin D antigen - 3-carboxylic acid | 1mg | Antigen/ Conjugate(2) | Position-3 | NA | Purified, Carboxylic acid (COOH) |
| 5019503 | Vitamin D antigen - 3-amino | 1mg | Antigen/ Conjugate(2) | Position-3 | NA | Purified, Amino (NH2) |
| 5019504 | Vitamin D antigen - 3-biotin | 1mg | Antigen/ Conjugate(2) | Position-3 | NA | Purified, Biotin conjugate |
| 3019702 | Vitamin D Release Solution - 10 solutions screening kit | 1 kit | Release Solution | NA | NA | Liquid, ready to use |

## Free 25OH Vitamin D

25OH Vitamin D is a hydrophobic molecule, and circulates on the Vitamin D Binding Protein (VDBP) and Albumin. A tiny fraction is not bound to these binding proteins, and is called Free 25OH Vitamin D. The measurement of Free 25OH Vitamin D is a better marker of Vitamin D deficiency in conditions in which the concentration of VDBP is altered. This includes pregnancy, liver and renal disease, critical illness and proteinuria

**Antibodies**

| Cat# | Name | Size | Type | Subtype | Clone/Host | Format |
|---|---|---|---|---|---|---|
| 5319706 | Monoclonal Antibody against 25OH Vitamin D2/D3* | 1mg | Monoclonal Antibody(1) | Tail | LMBP 7013CB | Purified, Unconjugated |
| 5319716 | Monoclonal Antibody against 25OH Vitamin D2/D3* | 1mg | Monoclonal Antibody(1) | Tail | LMBP 7012CB | Purified, Unconjugated |
| 5319726 | Monoclonal Antibody against 25OH Vitamin D2/D3* | 1mg | Monoclonal Antibody(1) | Tail | LMBP 7011CB | Purified, Unconjugated |
| 5319835 | Polyclonal Antibody against 25OH Vitamin D2/D3 | 100µl | Polyclonal Antibody(1) | Tail | Rabbit | Crude |

**Antigens & Conjugates**

| Cat# | Name | Size | Type | Subtype | Clone/Host | Format |
|---|---|---|---|---|---|---|
| 5019700 | Vitamin D derivative - Carboxylic acid | 1mg | Antigen/ Conjugate(1) | Tail | NA | Purified, Carboxylic acid (COOH) |
| 5019701 | Vitamin D derivative - BSA conjugate | 1mg | Antigen/ Conjugate(1) | Tail | NA | Purified, BSA conjugate |
| 5019703 | Vitamin D derivative - amino | 1mg | Antigen/ Conjugate(1) | Tail | NA | Purified, Amino (NH2) |
| 5019708 | Vitamin D derivative - biotin conjugate | 1mg | Antigen/ Conjugate(1) | Tail | NA | Purified, Biotin conjugate |
| 5019502 | Vitamin D antigen - 3-carboxylic acid | 1mg | Antigen/ Conjugate(2) | Position-3 | NA | Purified, Carboxylic acid (COOH) |
| 5019503 | Vitamin D antigen - 3-amino | 1mg | Antigen/ Conjugate(2) | Position-3 | NA | Purified, Amino (NH2) |
| 5019504 | Vitamin D antigen - 3-biotin | 1mg | Antigen/ Conjugate(2) | Position-3 | NA | Purified, Biotin conjugate |
| 3019702 | Vitamin D Release Solution - 10 solutions screening kit | 1 kit | Release Solution | NA | NA | Liquid, ready to use |

## Aggrecan (PG)

Aggrecan (PG) is the predominant proteoglycan species in articular cartilage. It is composed of a core protein of 210 kDa to which over 100 chondroitin sulfate chains, about20-50 keratan sulfate chains and O-linked as well as N-linked oligosaccharides are covently attached. The core protein contains three distinct globular domains (G1-G3).

**Antibodies**

| Cat# | Size | Type | Clone/Host | Isotype | Format |
|---|---|---|---|---|---|
| 5114616 | 1 mg | Mab | 969D 4D11 2A9* | IgG1 | Purified Unconjugated |
| 5114612 | 1 mg | Mab | 969D 4D11 2A9* | IgG1 | Purified Biotin Conjugated |
| 5114617 | 1 mg | Mab | 969D 4D11 2A9* | IgG1 | Purified F(ab)'2 Unconjugated |
| 5314626 | 1 mg | Mab | 1R1 14A6 3B2* | IgG1 | Purified Unconjugated |
| 5314627 | 1 mg | Mab | 1R1 14A6 3B2* | IgG1 | Purified F(ab)'2 Unconjugated |

**Antigens & Conjugates**

| Cat# | Size | Type | Match with | Format |
|---|---|---|---|---|
| 5114618 | 1 mL | MAb HRP conjugate | 5314626, 5314627 | Liquid, pure conjugate |
| 4114603 | 5.5 mL | MAb HRP conjugate | 5314626, 5314627 | Liquid, ready to use |

## Ferritin

Ferritin is a protein that stores iron in the body and releases it when needed. It is found in most cells, particularly in the liver, spleen, bone marrow, and skeletal muscles. Ferritin serves as a key marker for assessing the body's iron stores, making it crucial in the diagnosis and management of various conditions related to iron metabolism.

**Antibodies**

| Cat# | Size | Type | Clone/Host | Isotype | Format |
|---|---|---|---|---|---|
| 5342006 | 1 mg | mAb | 4E8 7C10 | IgG | Purified Unconjugated |
| 5142006 | 1 mg | mAb | 7C7 15N15 | IgG | Purified Unconjugated |

## Osteocalcin (OST)

Osteocalcin or bone Gla protein (B.G.P) is the major non-collagen protein of the bone matrix. It has a molecular weight of 5800 Da and contains 49 amino-acids, including 3 residues of gamma carboxyl glutamic acid. Osteocalcin is synthesized in the bone by the osteoblasts. After production, it is partly incorporated in the bone matrix and the rest is found in the blood circulation. The exact physiological function of osteocalcin is still unclear. A large number of studies show that the circulating levels of osteocalcin reflect the rate of bone formation.

The determination of the blood levels of osteocalcin is valuable for:

– The identification of women at risk of developing osteoporosis

– Monitoring bone metabolism during the perimenopause and postmenopause

– Monitoring bone metabolism during hormone replacement therapy and treatment of premenopausal women with LH-RH agonists

– Monitoring bone metabolism in patients with growth hormone deficiency, hypothyroidism, hyperthyroidism, chronic renal failure

**Antibodies**

| Cat# | Size | Type | Clone/Host | Isotype | Format |
|---|---|---|---|---|---|
| 5113806 | 1 mg | Mab | 002/12 BD7* | IgG1, Kappa | Purified Unconjugated |
| 5113817 | 1 mg | Mab | 002/12 BD7* | IgG1, Kappa | Purified F(ab)'2 Unconjugated |
| 5313806 | 1 mg | Mab | 001/3 CE3 3H10* | IgG1, Kappa | Purified Unconjugated |
| 5313808 | 1 mg | Mab | 001/3 CE3 3H10* | IgG1, Kappa | Purified Biotin Conjugated |

**Antigens & Conjugates**

| Cat# | Size | Type | Match with | Format |
|---|---|---|---|---|
| 5113818 | 50 µL | MAb HRP conjugate | 5313806, 5313808 | Liquid, pure conjugate |
| 4113822 | 400 µL | MAb HRP conjugate | 5313806, 5313808 | Liquid, concentrate |
| 4113825 | 11 mL | Dilution buffer for 4113822 | NA | Liquid, ready to use |

**Parathyroid Hormone (PTH)**

Human parathyroid hormone (hPTH) is a major physiological regulator of phosphocalcic metabolism. hPTH increases serum calcium concentrations by its actions on kidney (enhancing tubular Ca++ reabsorption and phosphate excretion) and bone (stimulating osteoclastic activity and bone resorption). It indirectly affects intestinal absorption of Ca++ by stimulating renal 1α-hydroxylation of 25 hydroxyvitamin D. The release of PTH is controlled in a negative feedback loop by the serum concentration of Ca++.

Clinical application: The measurement of intact hPTH is used to establish the diagnosis of primary hyperparathyroidism by demonstrating elevated serum levels of bioactive PTH. It allows documenting the occurrence of secondary hyperparathyroidism in patients with Vit.D deficiency, intestinal malabsorption, or renal failure. In this last situation, the absence of interference with the inactive carboxyl-terminal fragments is especially valuable. The specificity and high sensitivity of the assay also allows differentiating clearly low serum PTH levels in hypoparathyroidism or in tumor-induced hypercalcaemia.

**Antibodies**

| Cat# | Size | Type | Clone/Host | Isotype | Format |
|---|---|---|---|---|---|
| 5114906 | 1 mg | Mab | 77B 14H5 1C7 | IgG1, Kappa | Purified Unconjugated |
| 5314926 | 1 mg | Mab | OBP 1* | IgG1 | Purified Unconjugated |

**Antigens & Conjugates**

| Cat# | Size | Type | Match with | Format |
|---|---|---|---|---|
| 5114918 | 100 µL | MAb HRP conjugate | - | Liquid, pure conjugate |
| 4114803 | 11 mL | MAb HRP conjugate | - | Liquid, ready to use |

## FOR ADDITIONAL INFORMATION, PLEASE CONTACT :


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