Human Osteoprotegerin ELISA Kit ab189580

Overview

Product name: Human Osteoprotegerin ELISA Kit
Detection method: Colorimetric

<table>
<thead>
<tr>
<th>Sample type</th>
<th>Intra-assay</th>
<th>Inter-assay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum</td>
<td>n</td>
<td>Mean</td>
</tr>
<tr>
<td>Serum</td>
<td>8</td>
<td>6%</td>
</tr>
<tr>
<td>Serum</td>
<td>3</td>
<td>9%</td>
</tr>
</tbody>
</table>

Sample type: Cell culture supernatant, Serum, Hep Plasma, EDTA Plasma, Cit plasma
Assay type: Sandwich (quantitative)
Sensitivity: 11 pg/ml
Range: 31.25 pg/ml - 2000 pg/ml

Recovery

<table>
<thead>
<tr>
<th>Sample type</th>
<th>Average %</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum</td>
<td>101</td>
<td>100% - 103%</td>
</tr>
<tr>
<td>Cell culture media</td>
<td>88</td>
<td>81% - 96%</td>
</tr>
<tr>
<td>Hep Plasma</td>
<td>89</td>
<td>84% - 92%</td>
</tr>
<tr>
<td>EDTA Plasma</td>
<td>98</td>
<td>86% - 104%</td>
</tr>
<tr>
<td>Cit plasma</td>
<td>88</td>
<td>86% - 90%</td>
</tr>
</tbody>
</table>

Assay time: 1h 30m
Assay duration: One step assay

Species reactivity:
- **Reacts with:** Human
- **Does not react with:** Goat, Cow

Product overview:
Osteoprotegerin Human *in vitro* SimpleStep ELISA® kit is designed for the quantitative measurement of Osteoprotegerin protein in human serum, plasma and cell culture supernatants.

SimpleStep ELISA® technology employs capture antibodies conjugated to an affinity tag that is recognized by the monoclonal antibody used to coat our SimpleStep ELISA® plates. This approach to sandwich ELISA allows the formation of the antibody-analyte sandwich complex in a single step, significantly reducing assay time. See the SimpleStep ELISA® protocol summary in the image section for further details. Our SimpleStep ELISA® technology provides several benefits:

- Single-wash protocol reduces assay time to 90 minutes or less
- High sensitivity, specificity and reproducibility from superior antibodies
- Fully validated in biological samples
- 96-wells plate breakable into 12 x 8 wells strips

A 384-well SimpleStep ELISA® microplate (ab203359) is available to use as an alternative to the 96-well microplate provided with SimpeStep ELISA® kits.

Sensitivity:
- 11 pg/mL in Sample Diluent 25BS
- 13 pg/mL in Sample Diluent NS

Notes:
Human Osteoprotegerin (OPG), also known as Tumor necrosis factor receptor superfamily member 11B (TNFRSF11B), is a 46kDa glycoprotein member of the tumor necrosis factor receptor superfamily. This cytokine is a homodimer expressed and secreted by multiple adult tissues such as the lung, liver, spleen, prostate, ovary, adrenal gland and bone marrow. It plays a critical function in bone homeostasis by acting as a decoy receptor for TNFSF11/RANKL and for the receptor activator of nuclear factor-kappa-B ligand. OPG therefore decreases bone resorption by inhibiting osteoclast differentiation and activation of osteoclast and by stimulating osteoclast apoptosis.

OPG deficiency has been found in Juvenile Paget disease, a rare autosomal recessive osteopathy that presents in infancy and early childhood characterized by rapidly remodeling woven bone, osteopenia, debilitating fractures and deformities due to accelerated bone remodeling. OPG may also play a role in arterial calcification and high levels of OPG have been found to be an independent risk factor for cardiovascular disease and vascular mortality.

Platform: Microplate

Properties:

**Storage instructions:** Store at +4°C. Please refer to protocols.

<table>
<thead>
<tr>
<th>Components</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>10X Human Osteoprotegerin Capture Antibody</td>
<td>1 x 600µl</td>
</tr>
<tr>
<td>10X Human Osteoprotegerin Detector Antibody</td>
<td>1 x 600µl</td>
</tr>
</tbody>
</table>
Acts as decoy receptor for RANKL and thereby neutralizes its function in osteoclastogenesis. Inhibits the activation of osteoclasts and promotes osteoclast apoptosis in vitro. Bone homeostasis seems to depend on the local RANKL/OPG ratio. May also play a role in preventing arterial calcification. May act as decoy receptor for TRAIL and protect against apoptosis. TRAIL binding blocks the inhibition of osteoclastogenesis.

Highly expressed in adult lung, heart, kidney, liver, spleen, thymus, prostate, ovary, small intestine, thyroid, lymph node, trachea, adrenal gland, testis, and bone marrow. Detected at very low levels in brain, placenta and skeletal muscle. Highly expressed in fetal kidney, liver and lung.

Defects in TNFRSF11B are the cause of juvenile Paget disease (JPD) [MIM:239000]; also known as hyperostosis corticalis deformans juvenilis or hereditary hyperphosphatasia or chronic congenital idiopathic hyperphosphatasia. JPD is a rare autosomal recessive osteopathy that presents in infancy or early childhood. The disorder is characterized by rapidly remodeling woven bone, osteopenia, debilitating fractures, and deformities due to a markedly accelerated rate of bone remodeling throughout the skeleton. Approximately 40 cases of JPD have been reported worldwide. Unless it is treated with drugs that block osteoclast-mediated skeletal resorption, the disease can be fatal.

Contains 2 death domains.
Contains 4 TNFR-Cys repeats.
N-glycosylated. Contains siaic acid residues.
The N-terminus is blocked.

Secreted.
SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.

Example of Osteoprotegerin standard curve in Sample Diluent 25BS.

Example of Osteoprotegerin standard curve in Sample Diluent NS.

Background-subtracted data values (mean +/- SD) are graphed.
Ten individual healthy donors were evaluated for the presence of Osteoprotegerin in serum using this assay.

Results were interpolated from the standard curve in Sample Diluent 25BS and corrected by sample dilution (1:2). The mean level of Osteoprotegerin is 378.8 pg/mL with a range of 256.5 – 584.5 pg/mL and a standard deviation of 106.7 pg/mL.

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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