### Overview

**Product name**  
Rat Osteopontin ELISA Kit (OPN)

**Detection method**  
Colorimetric

**Precision**

<table>
<thead>
<tr>
<th>Sample</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>CV%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum</td>
<td>8</td>
<td></td>
<td></td>
<td>7.3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sample</th>
<th>n</th>
<th>Mean</th>
<th>SD</th>
<th>CV%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum</td>
<td>3</td>
<td></td>
<td></td>
<td>8%</td>
</tr>
</tbody>
</table>

**Sample type**  
Cell culture supernatant, Serum, Cell culture media, Hep Plasma, EDTA Plasma, Cit plasma

**Assay type**  
Sandwich (quantitative)

**Sensitivity**  
16.8 pg/ml

**Range**  
50 pg/ml - 3200 pg/ml

### Recovery

<table>
<thead>
<tr>
<th>Sample type</th>
<th>Average %</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell culture supernatant</td>
<td>96</td>
<td>94% - 98%</td>
</tr>
<tr>
<td>Serum</td>
<td>100</td>
<td>98% - 101%</td>
</tr>
<tr>
<td>Cell culture media</td>
<td>110</td>
<td>101% - 119%</td>
</tr>
<tr>
<td>Hep Plasma</td>
<td>110</td>
<td>101% - 115%</td>
</tr>
<tr>
<td>EDTA Plasma</td>
<td>95</td>
<td>90% - 104%</td>
</tr>
<tr>
<td>Cit plasma</td>
<td>106</td>
<td>103% - 109%</td>
</tr>
</tbody>
</table>
Assay time 1h 30m
Assay duration One step assay
Species reactivity Reacts with: Rat
Does not react with: Cow

Product overview
Rat Osteopontin ELISA Kit (OPN) (ab254514) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of Osteopontin (OPN) protein in cell culture media, cell culture supernatant, cit plasma, edta plasma, hep plasma, and serum. It uses our proprietary SimpleStep ELISA® technology. Quantitate Rat Osteopontin (OPN) with 16.8 pg/ml sensitivity.

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 SimpleStep ELISA® kits.

Notes
Osteopontin, known also as Secreted Phosphoprotein 1, is a secreted adhesive glycoprophosphoprotein that belongs to the small integrin-binding ligand N-linked glycoprotein family (SIBLING) and is expressed mainly in bone, teeth, kidney, epithelial lining tissues, activated T-cells and macrophages and found in serum and plasma. It is processed by matrix metalloproteases 3 and 4 as well as thrombin, which generate two functional fragments: an N terminal (RGD) fragment that binds to integrin receptors and a C terminal fragment (containing heparin binding sites) that interacts with CD44. Osteopontin can be present as a cytokine-like soluble protein or an immobilized extracellular matrix protein. Osteopontin is important in multiple physiologic and pathologic processes including survival, adhesion, migration, angiogenesis, apoptosis, inflammation, macrophage migration, B cell proliferation, Ig production, wound healing and tumor metastasis.

Abcam has not and does not intend to apply for the REACH Authorisation of customers’ uses of products that contain European Authorisation list (Annex XIV) substances. It is the responsibility of our customers to check the necessity of application of REACH Authorisation, and any other relevant authorisations, for their intended uses.

Platform
Pre-coated microplate (12 x 8 well strips)

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 Rat Osteopontin (OPN) Capture Antibody</td>
<td>1 x 600µl</td>
</tr>
<tr>
<td>Components</td>
<td>1 x 96 tests</td>
</tr>
<tr>
<td>------------</td>
<td>-------------</td>
</tr>
<tr>
<td>10X Rat Osteopontin (OPN) Detector Antibody</td>
<td>2 vials</td>
</tr>
<tr>
<td>10X Wash Buffer PT (ab206977)</td>
<td>1 x 20ml</td>
</tr>
<tr>
<td>50X Cell Extraction Enhancer Solution (ab193971)</td>
<td>1 x 1ml</td>
</tr>
<tr>
<td>5X Cell Extraction Buffer PTR (ab193970)</td>
<td>1 x 10ml</td>
</tr>
<tr>
<td>Antibody Diluent 5BI</td>
<td>1 x 6ml</td>
</tr>
<tr>
<td>Plate Seals</td>
<td>1 unit</td>
</tr>
<tr>
<td>Rat Osteopontin (OPN) Lyophilized Recombinant Protein</td>
<td>2 vials</td>
</tr>
<tr>
<td>Sample Diluent NS (ab193972)</td>
<td>1 x 12ml</td>
</tr>
<tr>
<td>SimpleStep Pre-Coated 96-Well Microplate (ab206978)</td>
<td>1 unit</td>
</tr>
<tr>
<td>Stop Solution</td>
<td>1 x 12ml</td>
</tr>
<tr>
<td>TMB Development Solution</td>
<td>1 x 12ml</td>
</tr>
</tbody>
</table>

**Function**
- Binds tightly to hydroxyapatite. Appears to form an integral part of the mineralized matrix. Probably important to cell-matrix interaction.
- Acts as a cytokine involved in enhancing production of interferon-gamma and interleukin-12 and reducing production of interleukin-10 and is essential in the pathway that leads to type I immunity.

**Tissue specificity**
- Bone. Found in plasma.

**Sequence similarities**
- Belongs to the osteopontin family.

**Post-translational modifications**
- Extensively phosphorylated on clustered serine residues.
- N- and O-glycosylated.
- Phosphorylation sites are present in the extracellular medium.

**Cellular localization**
- 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.

The Osteopontin standard curve was prepared as described in Section 10. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.

The concentrations of Osteopontin were measured in duplicates, interpolated from the Osteopontin standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 12.5%, plasma (citrate) 12.5%, plasma (heparin) 12.5% and plasma (EDTA) 12.5%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Osteopontin concentration was determined to be 16.57 ng/mL in neat serum, 14.99 ng/mL in neat plasma (citrate), 21.52 ng/mL in neat plasma (heparin), and 17.21 ng/mL in neat plasma (EDTA).
The concentrations of Osteopontin were measured in duplicates, interpolated from the Osteopontin standard curves and corrected for sample dilution. Undiluted samples are as follows: rat lung tissue supernatant 6.25% and rat spleen tissue supernatant 10%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Osteopontin concentration was determined to be 24.49 ng/mL in neat rat lung tissue supernatant and 22.77 ng/mL in neat rat spleen tissue supernatant.

To learn more about the advantages of recombinant antibodies see here.
please visit https://www.abcam.com/abpromise or contact our technical team.

Terms and conditions

- Guarantee only valid for products bought direct from Abcam or one of our authorized distributors