Human Erythropoietin ELISA Kit ab211647

Overview

Product name: Human Erythropoietin ELISA Kit
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>5</td>
<td></td>
<td></td>
<td>4.8%</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>3.3%</td>
</tr>
</tbody>
</table>

Sample type: Cell culture supernatant, Serum, Plasma
Assay type: Sandwich (quantitative)
Sensitivity: 2.8 mU/ml
Range: 15.41 mU/ml - 116 mU/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>105.8</td>
<td>101.5% - 110.8%</td>
</tr>
<tr>
<td>Serum</td>
<td>97.7</td>
<td>91.5% - 102.4%</td>
</tr>
<tr>
<td>Heparin Plasma</td>
<td>100.6</td>
<td>94.3% - 108.2%</td>
</tr>
<tr>
<td>EDTA Plasma</td>
<td>98.7</td>
<td>93.2% - 102.1%</td>
</tr>
<tr>
<td>Citrate Plasma</td>
<td>81.5</td>
<td>78.2% - 84.5%</td>
</tr>
</tbody>
</table>

Assay time: 2h 30m
**Assay duration**  
One step assay

**Species reactivity**  
Reacts with: Human  
Predicted to work with: Rat

**Product overview**  
Erythropoietin (EPO) in vitro ELISA (Enzyme-Linked Immunosorbent Assay) kit is designed for the quantitative measurement of Erythropoietin protein in human serum, plasma and cell culture supernatant samples.

The ELISA employs an affinity tag labeled capture antibody and a reporter conjugated detector antibody which immunocapture the sample analyte in solution. This entire complex (capture antibody/analyte/detector antibody) is in turn immobilized via immunoaffinity of an anti-tag antibody coating the well. To perform the assay, samples or standards are added to the wells, followed by the antibody mix. After incubation, the wells are washed to remove unbound material. TMB substrate is added and during incubation is catalyzed by HRP, generating blue coloration. This reaction is then stopped by addition of Stop Solution completing any color change from blue to yellow. Signal is generated proportionally to the amount of bound analyte and the intensity is measured at 450 nm. Optionally, instead of the endpoint reading, development of TMB can be recorded kinetically at 600 nm.

**Sensitivity:**  
Samples diluted in Sample Diluent NS MDD = 2.8 mU/mL.  
Samples diluted in Sample Diluent 10BS MDD = 3.4 mU/mL.  
Samples diluted in Sample Diluent 30BS MDD = 4.9 mU/mL.

**Notes**  
Erythropoietin is the principal hormone involved in the regulation of erythrocyte differentiation and the maintenance of a physiological level of circulating erythrocyte mass. It is a secreted protein produced by kidney or liver of adult mammals and by liver of fetal or neonatal mammals. Erythropoietin is used for the treatment of anemia. Variations affecting the Erythropoietin gene are associated with microvascular complications of diabetes 2 (MVCD2) [MIM: 612623].

**Tested applications**  
Suitable for: Sandwich ELISA

**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>1 x 96 tests</th>
</tr>
</thead>
<tbody>
<tr>
<td>10X Human Erythropoietin Capture Antibody</td>
<td>1 x 600µl</td>
</tr>
<tr>
<td>10X Human Erythropoietin Detector Antibody</td>
<td>1 x 600µl</td>
</tr>
<tr>
<td>10X Wash Buffer PT <em>(ab206977)</em></td>
<td>1 x 20ml</td>
</tr>
<tr>
<td>Antibody Diluent CPI</td>
<td>1 x 6ml</td>
</tr>
<tr>
<td>Human Erythropoietin Lyophilized Recombinant Protein</td>
<td>2 vials</td>
</tr>
<tr>
<td>Plate Seals</td>
<td>1 unit</td>
</tr>
<tr>
<td>Sample Diluent NBS</td>
<td>1 x 20ml</td>
</tr>
</tbody>
</table>
Human erythropoietin is a member of the EPO/TPO family and encodes a secreted, glycosylated cytokine hormone composed of four alpha helical bundles. The protein is found in the plasma and regulates red cell production by promoting erythroid differentiation and initiating hemoglobin synthesis. This protein also has neuroprotective activity against a variety of potential brain injuries and antiapoptotic functions in several tissue types. It is produced by kidney or liver of adult mammals and by liver of fetal or neonatal mammals.

**Cellular localization**

Secreted

**Applications**

Our Abpromise guarantee covers the use of ab211647 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sandwich ELISA</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
</tr>
</tbody>
</table>

**Images**

Background-subtracted data values (mean +/- SD) are graphed.

Example of human Erythropoietin standard curve in Sample Diluent NS.
Background-subtracted data values (mean +/- SD) are graphed.

Example of human Erythropoietin standard curve in Sample Diluent 10BS.

Example of human Erythropoietin standard curve in Sample Diluent 30BS.

Interpolated concentrations of native Erythropoietin in human serum samples.

The concentrations of Erythropoietin were measured in duplicates, interpolated from the Erythropoietin standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 100%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Erythropoietin concentration was determined to be 43.8 mU/mL in neat serum.
Interpolated concentrations of spiked recombinant Erythropoietin in human serum and cell culture media samples.

The concentrations of Erythropoietin were measured in duplicates, interpolated from the Erythropoietin standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 100%, cell culture media containing 10% bovine serum 100%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2).

Interpolated concentrations of spiked recombinant Erythropoietin in human plasma samples.

The concentrations of Erythropoietin were measured in duplicates, interpolated from the Erythropoietin standard curves and corrected for sample dilution. Undiluted samples are as follows: plasma (citrate) 50%, plasma (EDTA) 100%, plasma (heparin) 100%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2).

Interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Erythropoietin concentration was determined to be 21.3 mU/mL with a range of not detectable – 198.4 mU/mL. Note that not detectable donor # 2, and donor # 7 and 9 were excluded from the mean value.

Serum from nine individual healthy human male donors was measured in duplicate.

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