

# Rat Erythropoietin ELISA Kit (EPO) ab274398

Recombinant SimpleStep ELISA<sup>®</sup>

[1 References](#) [5 Images](#)

### Overview

**Product name** Rat Erythropoietin ELISA Kit (EPO)

**Detection method** Colorimetric

**Precision**

Intra-assay

Sample	n	Mean	SD	CV%
Supernatant	8			4.2%

Inter-assay

Sample	n	Mean	SD	CV%
Supernatant	3			3.5%

**Sample type**

Serum, Cell culture media, Hep Plasma, EDTA Plasma, Cit plasma

**Assay type**

Sandwich (quantitative)

**Sensitivity**

2.8 pg/ml

**Range**

11.72 pg/ml - 750 pg/ml

**Recovery**

Sample specific recovery

Sample type	Average %	Range
Serum	105	101% - 109%
Cell culture media	93	92% - 95%
Hep Plasma	87	81% - 91%
EDTA Plasma	92	88% - 97%
Cit plasma	89	81% - 96%

**Assay time**

1h 30m

**Assay duration**

One step assay

**Species reactivity****Reacts with:** Rat**Product overview**

Rat Erythropoietin ELISA kit (ab274398) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of Rat Erythropoietin protein in serum, plasma and cell culture supernatant. It uses our proprietary SimpleStep ELISA® technology. Quantitate Rat Erythropoietin with 2.8 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**

Erythropoietin is the principal hormone involved in the regulation of erythrocyte proliferation and differentiation and the maintenance of a physiological level of circulating erythrocyte mass. Erythropoietin binds to EPOR leading to EPOR dimerization and JAK2 activation thereby activating specific downstream effectors, including STAT1 and STAT3. Erythropoietin is a secreted protein produced by kidney or liver of adult mammals and by liver of fetal or neonatal mammals. Human erythropoietin is used for the treatment of anemia. Variations affecting the human EPO gene are associated with microvascular complications of diabetes 2. Rat Erythropoietin has 94% amino acids sequence identity to mouse Erythropoietin, and 83% identity to the human Erythropoietin.

The standard is affinity purified.

**Platform**

Pre-coated microplate (12 x 8 well strips)

**Properties****Storage instructions**

Store at +4°C. Please refer to protocols.

Components	1 x 96 tests	1 x 96 tests
10X Rat Erythropoietin (EPO) Capture Antibody	1 x 600µl	1 x 600µl
10X Rat Erythropoietin (EPO) Detector Antibody	1 x 600µl	1 x 600µl
10X Wash Buffer PT (ab206977)	1 x 20ml	1 x 20ml

Components	1 x 96 tests	1 x 96 tests
Antibody Diluent CPR2	1 x 6ml	1 x 6ml
Plate Seals	1 unit	1 unit
Rat Erythropoietin (EPO) Lyophilized Recombinant Protein	2 vials	2 vials
Sample Diluent NS (ab193972)	1 x 50ml	1 x 50ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 unit	1 unit
Stop Solution	1 x 12ml	1 x 12ml
TMB Development Solution	1 x 12ml	1 x 12ml

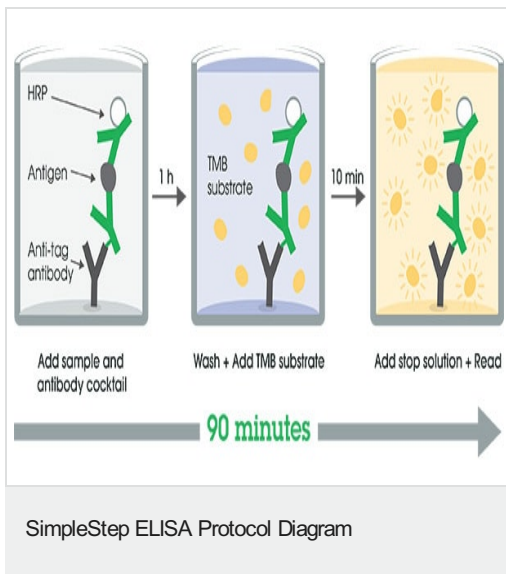
**Relevance**

Human erythropoietin is 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.

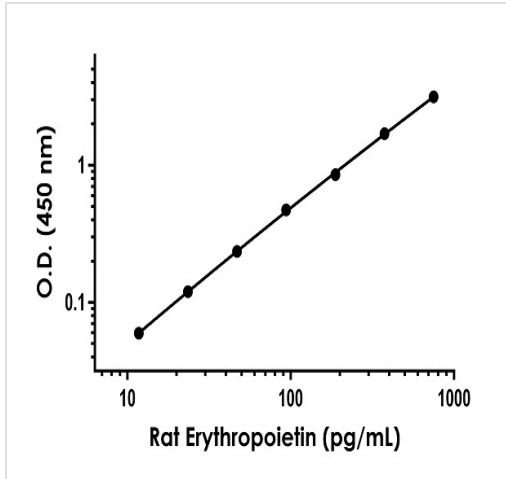
**Cellular localization**

Secreted

**Images**

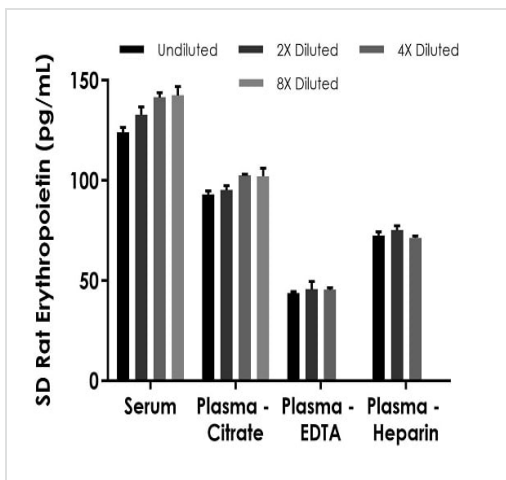


SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.



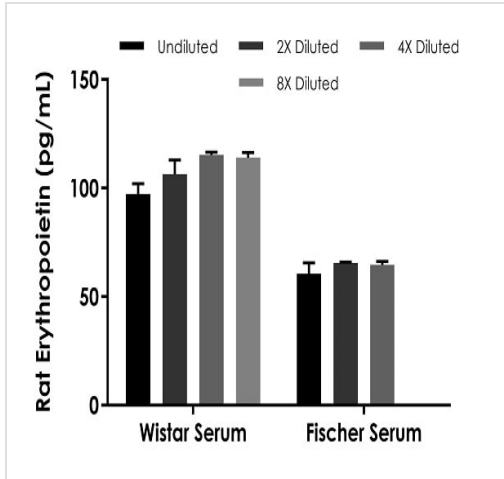
Example of rat Erythropoietin standard curve in Sample Diluent NS.

The Erythropoietin 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.



Interpolated concentrations of native Erythropoietin in Sprague Dawley (SD) rat serum and 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: serum 100%, plasma (citrate) 100%, plasma (EDTA) 100% and plasma (heparin) 100%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Erythropoietin concentration was determined to be 135 pg/mL in neat serum, 98 pg/mL in neat plasma (citrate), 45 pg/mL in neat plasma (EDTA) and 73 pg/mL in neat plasma (heparin).



Interpolated concentrations of native Erythropoietin in Wistar and Fischer rat 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: Wistar serum 100% and Fischer serum 100%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Erythropoietin concentration was determined to be 108 pg/mL in neat Wistar rat serum and 64 pg/mL in neat Fischer rat serum.

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**Research with confidence**  
Consistent and reproducible results

**Long-term and scalable supply**  
Recombinant technology

**Success from the first experiment**  
Confirmed specificity

**Ethical standards compliant**  
Animal-free production

Sandwich ELISA - Rat Erythropoietin ELISA Kit (EPO) (ab274398)

To learn more about the advantages of recombinant antibodies see [here](#).

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

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