

## Product datasheet

# Human Thymidine Kinase 1 ELISA Kit ab223595

SimpleStep ELISA

[5 Images](#)

### Overview

**Product name** Human Thymidine Kinase 1 ELISA Kit

**Detection method** Colorimetric

**Precision**

Intra-assay

Sample	n	Mean	SD	CV%
Cell Extract	5			3.3%

Inter-assay

Sample	n	Mean	SD	CV%
Cell Extract	3			7.8%

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

**Assay type** Sandwich (quantitative)

**Sensitivity** 6.1 pg/ml

**Range** 23.5 pg/ml - 3500 pg/ml

**Recovery**

Sample specific recovery

Sample type	Average %	Range
Cell culture supernatant	100	95% - 104%
Serum	85	75% - 91%
Cell culture extracts	102	86% - 120%
EDTA Plasma	80	80% - 81%
Cit plasma	80	75% - 82%

**Assay time** 1h 30m

<b>Assay duration</b>	One step assay
<b>Species reactivity</b>	<b>Reacts with:</b> Human
<b>Product overview</b>	Thymidine Kinase 1 <i>in vitro</i> SimpleStep ELISA <sup>®</sup> (Enzyme-Linked Immunosorbent Assay) kit is designed for the quantitative measurement of Thymidine kinase 1 protein in human plasma, serum, and cell culture lysate and supernatant samples.

The SimpleStep ELISA<sup>®</sup> 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.

Thymidine kinase 1, or TK1, is a 234- amino acid, zinc binding protein encoded by the Thymidine Kinase 1 gene. The primary function of Thymidine Kinase 1 is the phosphorylation of thymidine to form deoxythymidine 5'-phosphate, dTMP, and is necessary for DNA replication. The activity of Thymidine Kinase 1 is highest during the S phase of cells, and lowers during the G2 phase. Two forms of Thymidine Kinase 1 have been identified, one in the cytosol and the other in mitochondria, which is known as TK2. The presence of Thymidine Kinase 1 in serum may be a biomarker for certain types of cancer.

<b>Platform</b>	Pre-coated microplate (12 x 8 well strips)
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## Properties

<b>Storage instructions</b>	Store at +4°C. Please refer to protocols.
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Components	1 x 96 tests
10X Wash Buffer PT ( <a href="#">ab206977</a> )	1 x 20ml
50X Cell Extraction Enhancer Solution ( <a href="#">ab193971</a> )	1 x 1ml
5X Cell Extraction Buffer PTR ( <a href="#">ab193970</a> )	1 x 10ml
Antibody Diluent CPI - HAMA Blocker ( <a href="#">ab193969</a> )	1 x 6ml
10X Human Thymidine Kinase 1 Capture Antibody	1 x 600µl
10X Human Thymidine Kinase 1 Detector Antibody	1 x 600µl
Human Thymidine Kinase 1 Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
Sample Diluent 50BS	1 x 50ml

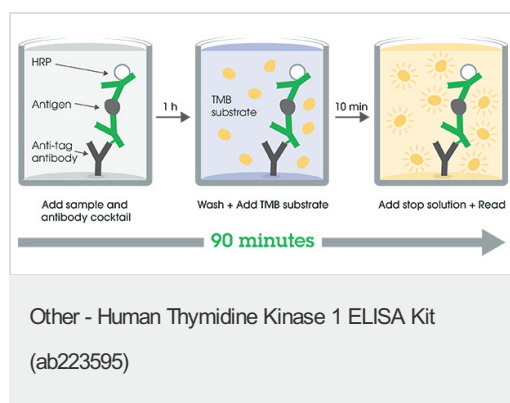
Components	1 x 96 tests
Sample Diluent NS ( <a href="#">ab193972</a> )	1 x 50ml
SimpleStep Pre-Coated 96-Well Microplate ( <a href="#">ab206978</a> )	1 unit
Stop Solution	1 x 12ml
TMB Development Solution	1 x 12ml

**Sequence similarities** Belongs to the thymidine kinase family.

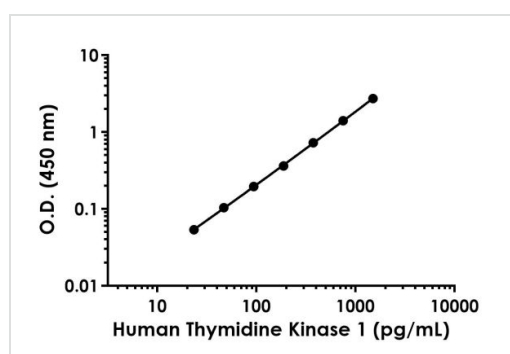
**Post-translational modifications** Phosphorylated on Ser-13 in mitosis.

**Cellular localization** Cytoplasm.

## Images

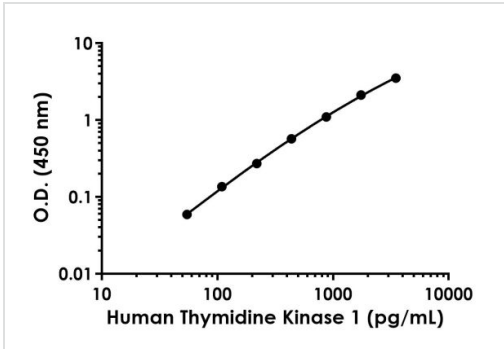


SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.



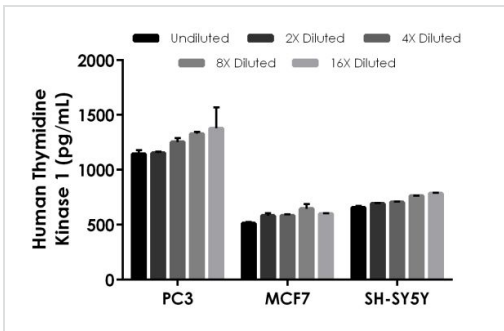
Background-subtracted data values (mean +/- SD) are graphed.

Example of human Thymidine Kinase 1 standard curve in 1X Cell Extraction Buffer PTR.



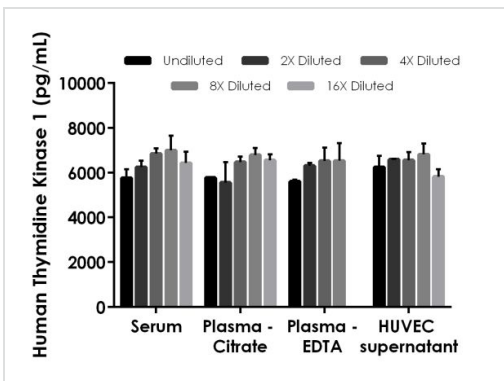
Example of human Thymidine Kinase 1 standard curve in Sample Diluent 50BS.

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



Interpolated concentrations of native Thymidine Kinase 1 in human PC3, MCF7, and SH-SY5Y cell extracts.

Interpolated concentrations of native Thymidine Kinase 1 in human PC-3, MCF7, and SH-SY5Y cell extracts based on a 16 µg/mL extract load. The concentrations of Thymidine Kinase 1 were measured in duplicate and interpolated from the Thymidine Kinase 1 standard curve and corrected for sample dilution. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Thymidine Kinase 1 concentration was determined to be 1251 pg/ml in PC-3, 585 pg/mL in MCF7, 721 pg/mL in SH-SY5Y.



Interpolated concentrations of spiked Thymidine Kinase 1 in human serum, plasma and cell culture supernatant samples.

The concentrations of Thymidine Kinase 1 were measured in duplicates, interpolated from the Thymidine Kinase 1 standard curves and corrected for sample dilution. Undiluted samples are as follows: serum 50%, plasma (citrate) 50%, plasma (EDTA) 25% and HUVEC supernatant 50%. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2).

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

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