

## Product datasheet

# Human Caspase-7 ELISA Kit ab274396

**KO VALIDATED** Recombinant SimpleStep ELISA

7 Images

### Overview

**Product name** Human Caspase-7 ELISA Kit

**Detection method** Colorimetric

**Precision**

Intra-assay

Sample	n	Mean	SD	CV%
Extract	11			4%

**Sample type**

Cell Lysate

**Assay type**

Sandwich (quantitative)

**Sensitivity**

41 pg/ml

**Range**

93.75 pg/ml - 6000 pg/ml

**Recovery**

Sample specific recovery

Sample type	Average %	Range
Cell Lysate	104	94% - 118%

**Assay time**

1h 30m

**Assay duration**

One step assay

**Species reactivity**

**Reacts with:** Human

**Product overview**

Human Caspase-7 ELISA kit (ab274396) is a single-wash 90 min sandwich ELISA designed for the quantitative measurement of Human Caspase-7 protein in cell and tissue extracts. It uses our proprietary SimpleStep ELISA® technology. Quantitate Human Caspase-7 with 41 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

Human Caspase-7 is a cytoplasmic cysteine protease involved in the activation cascade of caspases responsible for execution of apoptosis. Caspase-7 cleaves and activates sterol regulatory element binding proteins (SREBPs). Caspase-7 cleaves poly(ADP-ribose) polymerase (PARP). Caspase-7 overexpression promotes programmed cell death. Caspase-7 is expressed as an inactive pro-form (pro caspase-7). In apoptosis, the pro caspase-7 is activated by proteolytic cleavages at Asp23-Ala24, Asp198-Ser199 and Asp206-Ala207 bonds catalyzed by granzyme B and caspase-10, generating two subunits p20 and p11 that are assembled into hetero-tetrameric active enzyme. This kit does not differentiate between the inactive and active forms Caspase-7; it measures Caspase-7 whether in pro form or cleaved form.

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

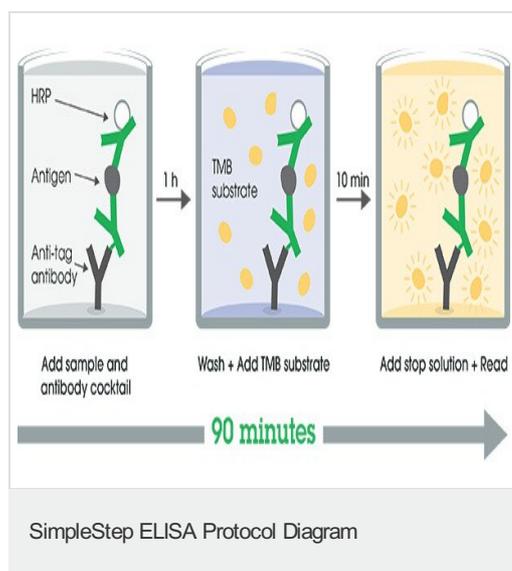
**Storage instructions** Store at +4°C. Please refer to protocols.

Components	
Plate Seals	1 x unit
10X Wash Buffer PT ( <a href="#">ab206977</a> )	1 x 20ml
5X Cell Extraction Buffer PTR ( <a href="#">ab193970</a> )	1 x 10ml
TMB&nbsp;Development Solution	1 x 12ml
Stop Solution	1 x 12ml
SimpleStep Pre-Coated 96-Well Microplate ( <a href="#">ab206978</a> )	1 x unit
Sample Diluent NS ( <a href="#">ab193972</a> )	1 x 12ml
Antibody Diluent&nbsp;CPI - HAMA Blocker ( <a href="#">ab193969</a> )	1 x 6ml

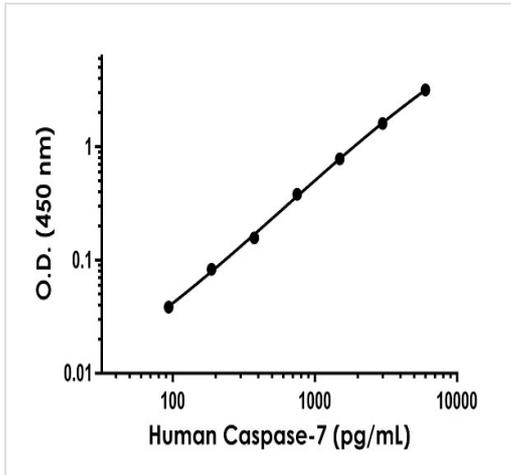
Components	
Human Caspase-7 Lyophilized Recombinant Protein	2 x 1 vial
10X Human Caspase-7 Capture Antibody	1 x 600µl
10X Human Caspase-7 Detector Antibody	1 x 600µl

<b>Function</b>	Involved in the activation cascade of caspases responsible for apoptosis execution. Cleaves and activates sterol regulatory element binding proteins (SREBPs). Proteolytically cleaves poly(ADP-ribose) polymerase (PARP) at a '216-Asp-Gly-217' bond. Overexpression promotes programmed cell death.
<b>Tissue specificity</b>	Highly expressed in lung, skeletal muscle, liver, kidney, spleen and heart, and moderately in testis. No expression in the brain.
<b>Sequence similarities</b>	Belongs to the peptidase C14A family.
<b>Post-translational modifications</b>	Cleavages by granzyme B or caspase-10 generate the two active subunits. Propeptide domains can also be cleaved efficiently by caspase-3. Active heterodimers between the small subunit of caspase-7 and the large subunit of caspase-3, and vice versa, also occur.
<b>Cellular localization</b>	Cytoplasm.

## Images

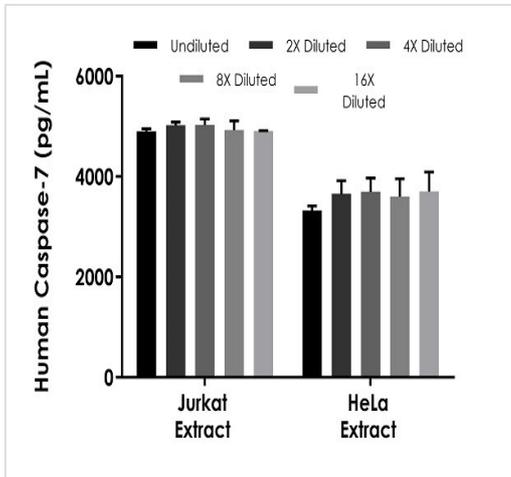


SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.



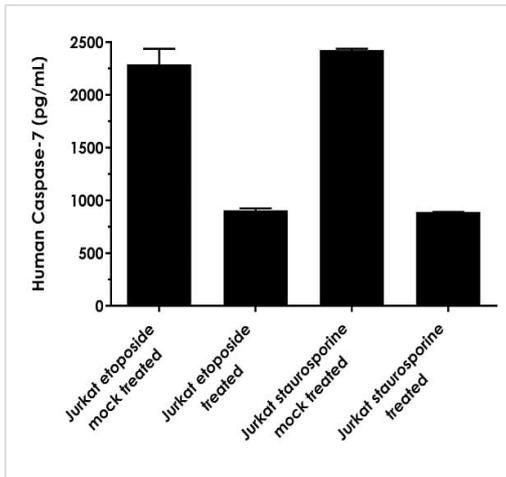
The Caspase-7 standard curve was prepared as described in Section 10. Raw data values are shown in the table. Background-subtracted data values (mean +/- SD) are graphed.

Example of human Caspase-7 standard curve in 1X Cell Extraction Buffer PTR.



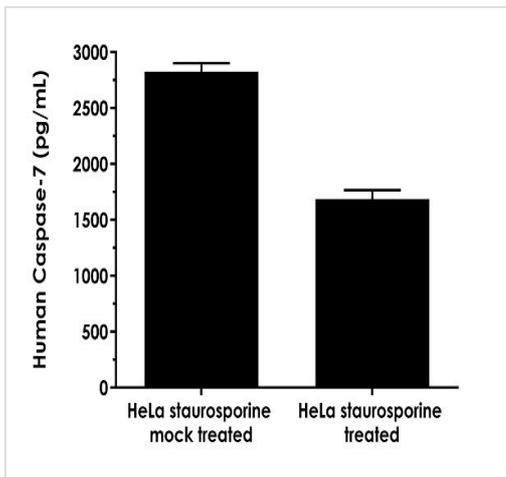
The concentrations of Caspase-7 were measured in duplicate and interpolated from the Caspase-7 standard curve and corrected for sample dilution. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Caspase-7 concentration was determined to be 4,958 pg/mL in Jurkat extract and 3,596 pg/mL in HeLa extract.

Interpolated concentrations of native Caspase-7 in human Jurkat and HeLa cell based on 80 µg/mL and 200 µg/mL extract loads, respectively.



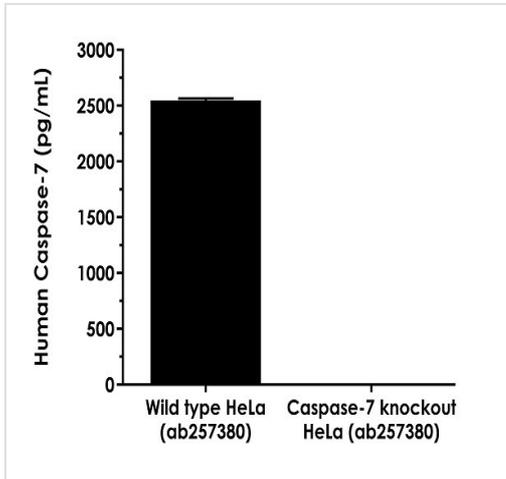
Interpolated concentrations of native Caspase-7 in human Jurkat cell treated with or without etoposide (25  $\mu$ M, overnight) and staurosporine (1  $\mu$ M, 4 hours) based on 50  $\mu$ g/mL extract loads.

The concentrations of Caspase-7 were measured in duplicate and interpolated from the Caspase-7 standard curve and corrected for sample dilution. The interpolated dilution factor corrected values are plotted (mean  $\pm$  SD, n=2). The mean Caspase-7 concentration was determined to be 2,290 pg/mL in Jurkat etoposide mock treated extract, 905 pg/mL in Jurkat etoposide treated extract, 2,423 pg/mL in Jurkat staurosporine mock treated extract and 889 pg/mL in Jurkat staurosporine treated extract. Note that the lower measured Caspase-7 concentrations in drug treated cells are most likely caused by a leakage of cell content from apoptotic cells.



Interpolated concentrations of native Caspase-7 in human HeLa cell treated with or without staurosporine (1  $\mu$ M, 4 hours) based on 200  $\mu$ g/mL extract loads.

The concentrations of Caspase-7 were measured in duplicate and interpolated from the Caspase-7 standard curve and corrected for sample dilution. The interpolated dilution factor corrected values are plotted (mean  $\pm$  SD, n=2). The mean Caspase-7 concentration was determined to be 2,826 pg/mL in HeLa staurosporine mock treated extract and 1,687 pg/mL in HeLa staurosporine treated extract. Note that the lower measured Caspase-7 concentrations in drug treated cells are most likely caused by a leakage of cell content from apoptotic cells.



The concentrations of Caspase-7 were measured in duplicate and interpolated from the Caspase-7 standard curve and corrected for sample dilution. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean Caspase-7 concentration was determined to be 2,548 pg/mL in wild type HeLa extract and undetectable in Caspase-7 knockout HeLa extract.

Interpolated concentrations of native Caspase-7 in human HeLa cell wild type and Caspase-7 knockout (

[ab257380](#)

) based on 200 µg/mL extract loads.

Powered by recombinant antibodies

 <p><b>Research with confidence</b> Consistent and reproducible results</p>	 <p><b>Long-term and scalable supply</b> Recombinant technology</p>
 <p><b>Success from the first experiment</b> Confirmed specificity</p>	 <p><b>Ethical standards compliant</b> Animal-free production</p>

Sandwich ELISA - Human Caspase-7 ELISA Kit (ab274396)

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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