

## Product datasheet

# Human UCHL1 ELISA Kit ab229201

SimpleStep ELISA<sup>®</sup>

[6 Images](#)

### Overview

**Product name** Human UCHL1 ELISA Kit

**Detection method** Colorimetric

**Precision**

Inter-assay

Sample	n	Mean	SD	CV%
293T extract	3			5.1%

**Sample type**

Cell culture supernatant, Cell culture extracts, Tissue Extracts

**Assay type**

Sandwich (quantitative)

**Sensitivity**

48 pg/ml

**Range**

313 pg/ml - 20000 pg/ml

**Recovery**

Sample specific recovery

Sample type	Average %	Range
Cell culture extracts	117	108% - 123%
Tissue Extracts	114	109% - 119%
Cell culture media	97	96% - 98%

**Assay time**

1h 30m

**Assay duration**

One step assay

**Species reactivity**

**Reacts with:** Human

**Product overview**

UCHL1 *in vitro* SimpleStep ELISA<sup>®</sup> (Enzyme-Linked Immunosorbent Assay) kit is designed for the quantitative measurement of UCHL1 protein in human cell culture extracts, tissue extracts and cell culture supernatant.

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.

Ubiquitin carboxy-terminal hydrolase L1 (UCHL1), also known as PGP9.5, is a deubiquitinating thiol protease that hydrolyzes at the C-terminal glycine of ubiquitin, resulting in the ubiquitin monomer. Although mature UCHL1 is comprised only of 220 amino acids, it forms complicated knot structures, which is thought to protect the protein from unintended proteasomal degradation. It is present in all neurons, cells of the neuroendocrine system, associated tumors, and in the testes/ovaries. UCHL1 is highly abundant in neurons, comprising 1-2% of total brain protein. The UCHL1 gene is required for normal synaptic and cognitive function. Polymorphisms or loss of gene function have been associated with Parkinson's and Alzheimer's diseases.

This kit is knockout validated for specifically detecting UCHL1 in human HAP1 cells.

Serum and plasma samples are not compatible with this kit due to severe matrix effects.

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

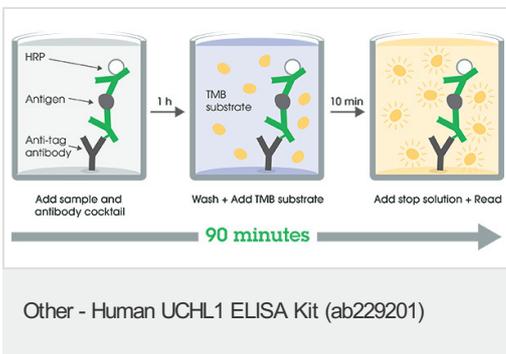
## Properties

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

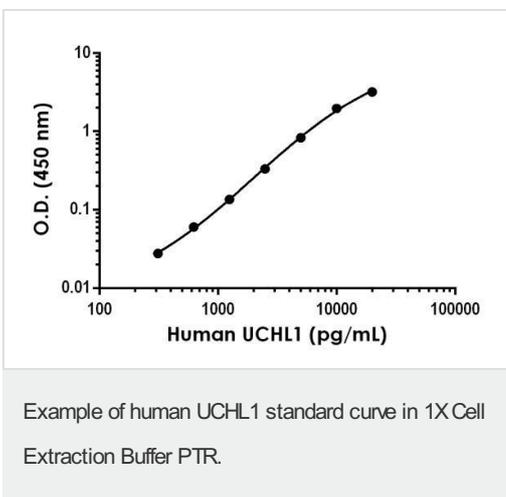
Components	1 x 96 tests
10X Human UCHL1 Capture Antibody	1 x 600µl
10X Human UCHL1 Detector Antibody	1 x 600µl
10X Wash Buffer PT ( <a href="#">ab206977</a> )	1 x 20ml
50X Cell Extraction Enhancer Solution ( <a href="#">ab193971</a> )	1 x 1ml
5X Cell Extraction Buffer PTR ( <a href="#">ab193970</a> )	1 x 10ml
Antibody Diluent CPI - HAMA Blocker ( <a href="#">ab193969</a> )	1 x 6ml
Human UCHL1 Lyophilized Recombinant Protein	2 vials
Plate Seals	1 unit
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

Components	1 x 96 tests
TMB Development Solution	1 x 12ml
<b>Function</b>	Ubiquitin-protein hydrolase involved both in the processing of ubiquitin precursors and of ubiquitinated proteins. This enzyme is a thiol protease that recognizes and hydrolyzes a peptide bond at the C-terminal glycine of ubiquitin. Also binds to free monoubiquitin and may prevent its degradation in lysosomes. The homodimer may have ATP-independent ubiquitin ligase activity.
<b>Tissue specificity</b>	Found in neuronal cell bodies and processes throughout the neocortex (at protein level). Expressed in neurons and cells of the diffuse neuroendocrine system and their tumors. Weakly expressed in ovary. Down-regulated in brains from Parkinson disease and Alzheimer disease patients.
<b>Involvement in disease</b>	Parkinson disease 5 Neurodegeneration with optic atrophy, childhood-onset
<b>Sequence similarities</b>	Belongs to the peptidase C12 family.
<b>Post-translational modifications</b>	O-glycosylated.
<b>Cellular localization</b>	Cytoplasm. Endoplasmic reticulum membrane. About 30% of total UCHL1 is associated with membranes in brain.

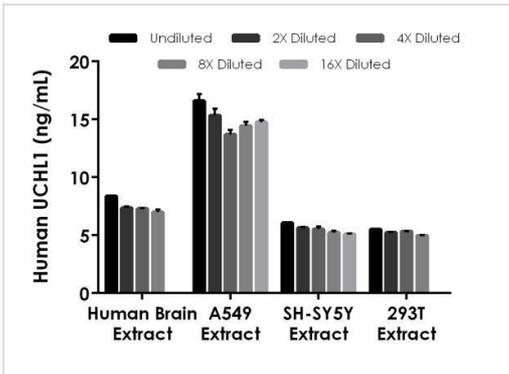
## Images



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.

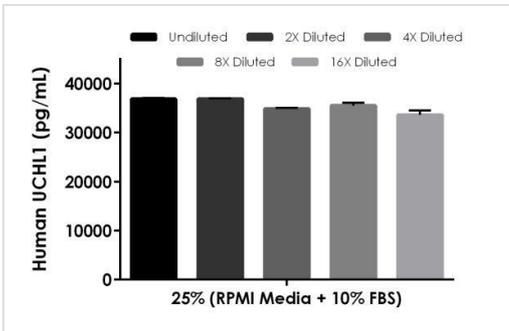


The UCHL1 standard curve was prepared as described in Section 10. Background-subtracted data values (mean +/- SD) are graphed.



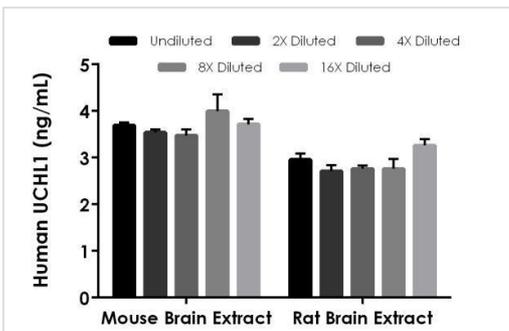
Interpolated concentrations of native UCHL1 in human brain extract, A549 cell extract, SH-SY5Y cell extract, and 293T cell extract samples.

The concentrations of UCHL1 were measured in duplicates, interpolated from the UCHL1 standard curves and corrected for sample dilution. Undiluted samples are as follows: human brain extract 2.5 µg/mL, A549 extract 50 µg/mL, SH-SY5Y extract 2.5 µg/mL, and 293T extract 15 µg/mL. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean UCHL1 concentration in the undiluted samples was determined to be 7.5 ng/mL in brain extract, 15 ng/mL in A549 extract, 5.5 ng/mL in SH-SY5Y extract, and 5.2 ng/mL in 293T extract.



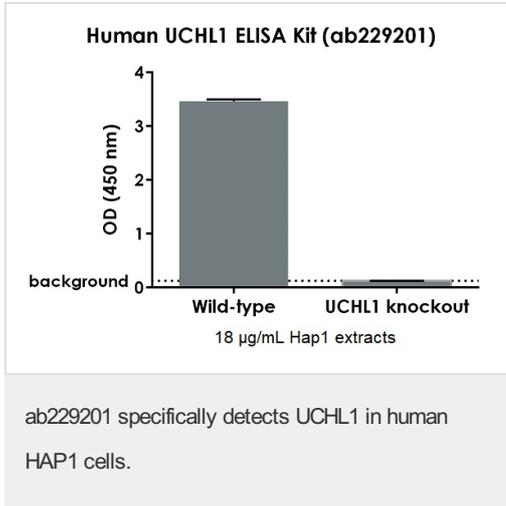
Interpolated concentrations of spiked UCHL1 in cell culture media.

The concentrations of UCHL1 were measured in duplicate and interpolated from the UCHL1 standard curve and corrected for sample dilution. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2).



Interpolated concentrations of native UCHL1 in mouse brain extract and rat brain extract samples.

The concentrations of UCHL1 were measured in duplicates, interpolated from the UCHL1 standard curves and corrected for sample dilution. Undiluted samples are as follows: mouse brain extract 2.5 µg/mL and rat brain extract 1.25 µg/mL. The interpolated dilution factor corrected values are plotted (mean +/- SD, n=2). The mean UCHL1 concentration in the undiluted samples was determined to be 3.7 ng/mL in mouse brain extract and 2.9 ng/mL in rat brain extract.



Raw data is plotted for wild-type and UCHL1-knockout HAP1 cell extracts tested at 18 µg/mL.

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