

# UCHL1 Chicken Polyclonal Antibody

## CPCA-UCHL1

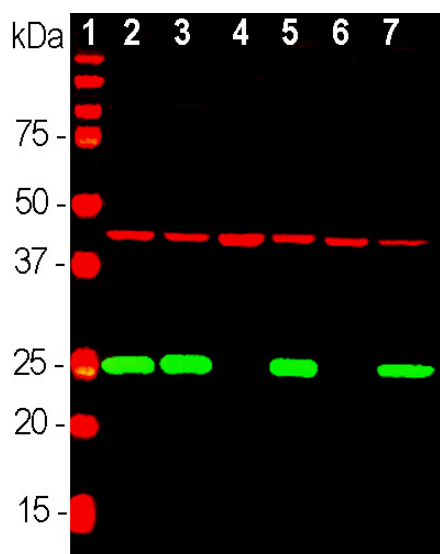
**Ordering Information**  
Web [www.encorbio.com](http://www.encorbio.com)  
Email [admin@encorbio.com](mailto:admin@encorbio.com)  
Phone 352-372-7022  
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**HGNC Name:** UCHL1  
**UniProt:** P09936  
**RRID:** AB\_2572393  
**Immunogen:** Recombinant full length human UCHL1 expressed in and purified from *E. coli*.  
**Format:** Concentrated IgY preparation in PBS plus 0.02% NaN<sub>3</sub>  
**Storage:** Store at 4°C  
**Recommended dilutions:**  
WB: 1:2,000-5,000. IF/ICC: 1:500-1,000. IHC not recommended

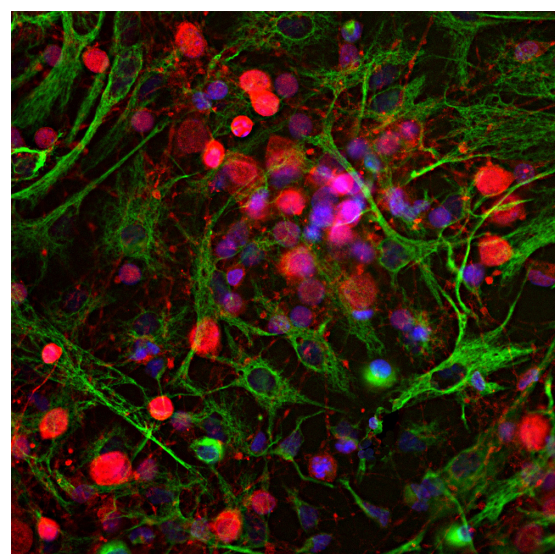
### References:

1. Doran JF, Jackson P, Kynoch PA, Thompson RJ. Isolation of PGP 9.5, a new human neurone-specific protein detected by high-resolution two-dimensional electrophoresis. *J Neurochem.* 40:1542-7 (1983).
2. Wilkinson KD, et al. The neuron-specific protein PGP 9.5 is a ubiquitin carboxyl-terminal hydrolase. *Science* 246:670-3 (1989).
3. Kurihara LJ, Kikuchi T, Wada K, Tilghman SM. Loss of Uch-L1 and Uch-L3 leads to neurodegeneration, posterior paralysis and dysphagia. *Hum. Mol. Genet.* 10:1963-70 (2001).
4. Maraganore DM, et al. UCHL1 is a Parkinson's disease susceptibility gene. *Ann Neurol.* 55:512-21 (2004).
5. Bilguvar K, et al. Recessive loss of function of the neuronal ubiquitin hydrolase UCHL1 leads to early-onset progressive neurodegeneration. *PNAS* 110:3489-94 (2013).
6. Liu Y, et al. The UCH-L1 gene encodes two opposing enzymatic activities that affect alpha-synuclein degradation and Parkinson's disease susceptibility. *Cell* 111:209-18 (2002).
7. Leroy E, et al. The ubiquitin pathway in Parkinson's disease. *Nature* 395:451-2 (1998).
8. Day IN, Thompson RJ. UCHL1 (PGP 9.5): Neuronal biomarker and ubiquitin system protein. *Prog. Neurobiol.* 90:327-62 (2009).
9. Mondello S, et al. Clinical utility of serum levels of ubiquitin C-terminal hydrolase as a biomarker for severe traumatic brain injury. *Neurosurgery* 70:666-75 (2012).

| Applications    | Host    | Isotype | Molecular Wt. | Species Cross-Reactivity |
|-----------------|---------|---------|---------------|--------------------------|
| WB, IF/ICC, IHC | Chicken |         | 24kDa         | Hu, Rt, Ms, Co, Pi, Ho   |



Western blot analysis of equal amounts of different tissue and cell lysates using chicken pAb to UCHL1, CPCA-UCHL1, dilution 1:2,000 in green, and mouse mAb to Actin, [MCA-5J11](#), dilution 1:1,000, in red: [1] protein standard, [2] rat brain, [3] mouse brain, [4] NIH-3T3, [5] HEK293, [6] HeLa and [7] SH-SY5Y cells. The single band at 24 kDa mark corresponds to UCHL1 protein which is detectable in CNS extracts and lysates of cells with neuronal properties.



Immunofluorescent analysis of cortical neuron-glial cell culture from E20 rat stained with chicken pAb to UCHL1, CPCA-UCHL1, dilution 1:500 in red, and costained with mouse mAb to vimentin, [MCA-2A52](#), dilution 1:2,000, in green. The blue is Hoechst staining of nuclear DNA. The UCHL1 antibody produces strong staining of the cell body and dendrites in neurons. The vimentin antibody stains intermediate filaments in fibroblastic and developing glial cells.

### Background:

Ubiquitin C-terminal hydrolase 1 (UCHL1) is an extremely abundant protein of brain, where it is localized only in neurons. It was originally named PGP9.5 and discovered as a major protein spot on 2D gels of brain extracts which was absent on similar gels of other tissues (1). Later it was found that the PGP9.5 protein was an enzyme which could cleave ubiquitin monomers from ubiquitin conjugates and polyubiquitin chains, resulting in recycling of ubiquitin monomers and the renaming of PGP9.5 to UCHL1 to reflect this enzymatic activity (2). UCHL1 is an essential enzyme and defects in UCHL1 protein expression are involved in Parkinson's disease (PD) and other more serious disease states (3-6). Genetic studies defined defects in the *PARK5* gene as causative of PD in a German family, the *PARK5* gene encoding UCHL1 (7). In addition UCHL1 may be released into cerebrospinal fluid (CSF) and blood following CNS damage and disease resulting in neuronal loss. As a result detection of this protein may give information about CNS compromise and recovery (8,9). The CPCA-UCHL1 antibody was made against full length recombinant human UCHL1 expressed in and purified from *E. coli* and can be used to identify neurons and their processes in culture or in sections. The immunogen used to generate this antibody is available from EnCor, [PROT-r-UCHL1](#). The antibody works cleanly on western blots of appropriate lysates of cell and tissues. It works well for IF and ICC but is not recommended for IHC. Considerable interest has been focused on the detection of UCHL1 in the blood and CSF of patients with traumatic injuries to the brain or spinal cord. This antibody has been widely used as both a capture and a detection reagent in ELISA type assays for measuring UCHL1 levels in blood and CSF samples. In addition we supply a rabbit polyclonal antibody to UCHL1, [RPCA-UCHL1](#), and also a widely used mouse monoclonal [MCA-BH7](#). We also supply an ELISA kit for the detection of UCHL1 in blood, CSF and other biological fluids, [ELISA-UCHL1](#).

**FOR RESEARCH USE ONLY. NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE.**

### Abbreviation Key:

**mAb—Monoclonal Antibody pAb—Polyclonal Antibody WB—Western Blot IF—Immunofluorescence ICC—Immunocytochemistry IHC—Immunohistochemistry E—ELISA Hu—Human Mo—Monkey Do—Dog Rt—Rat Ms—Mouse Co—Cow Pi—Pig Ho—Horse Ch—Chicken Dr—D. rerio Dm—D. melanogaster Sm—S. mutans Ce—C. elegans Sc—S. cerevisiae Sa—S. aureus Ec—E. coli.**