Ubiquitin C-terminal Hydrolase 1 (UCHL1), Mouse Monoclonal Antibody

Catalog no. 480012

(See product label for lot information)

Product Description
Mouse monoclonal antibody

Clone/PAD: A98
Isotype: IgG1
Qty: 100µl

Formulation
unpurified, concentrated culture supernatant 10 mM sodium azide.

Purification Method
Unpurified, concentrated culture supernatant.

Validation
See www.invitrogen.com/antibodies for protocols
Validated for use in WB and IF.

WB: 1:5,000 IF: 1:500

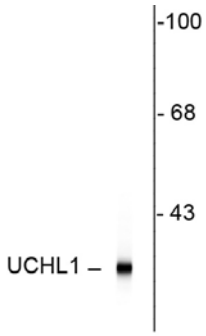
Reactivity
This product had been directly tested for reactivity with Bovine, human, mouse and rat.

Immunogen
Recombinant full length human UCHL1 purified from *E. coli*.

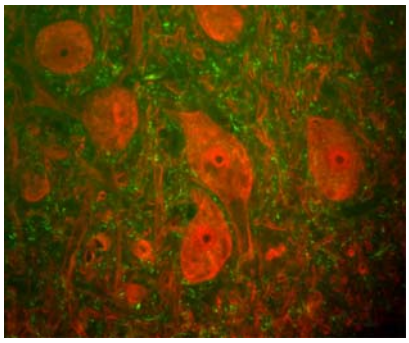
Storage
2-8°C for up to 1mo, -20°C for long term storage. Avoid repeated freezing and thawing.

Expiration Date
Expires one year from date of receipt when stored as instructed.

Background
Ubiquitin C-terminal hydrolase 1 (UCHL1) is also known as ubiquitin carboxyl esterase L1, ubiquitin thiolesterase, neuron-specific protein PGP9.5 and Park5. It was originally identified as a major component of the neuronal cytoplasm from 2-dimensional gel analysis of brain tissues, and was given the name PGP9.5 (1). It was later found that ubiquitin C-terminal hydrolase enzyme activity was associated with the PGP9.5 protein (2). The ubiquitin C-terminal hydrolases cleave ubiquitin from other molecules. Regulation of the ubiquitin pathway is very important and many disease states are associated with defects in this pathway. Genetic knockout of UCHL1 in mice results in a motor neuron degeneration similar to the spontaneous gracile axonal dystrophy (gad) mutant mice (3). Point mutations in the UCHL1 gene are associated with some forms of human Parkinson's disease (4). Since UCHL1 is heavily expressed in neurons, it is released in large amounts following injury or degeneration, so the detection of UCHL1 in CSF and other bodily fluids can be used as a biomarker.



Western blot of rat hippocampal homogenate showing specific immunolabeling of the ~ 24k UCHL1 protein.



Rat spinal cord stained with anti-UCHL1(red) and anti-neurofilament NF-H antibody (green). The large cells are a-motorneurons and UCHL1 fills the cytoplasm of their perikarya and dendrites.

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, Lee KM, Deshpande S, Duerksen-Hughes P, Boss JM, Pohl J. The neuron-specific protein PGP 9.5 is a ubiquitin carboxyl-terminal hydrolase. Science. 1989 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. Liu Y, Fallon L, Lashuel HA, Liu Z, Lansbury PT Jr. The UCH-L1 gene encodes two opposing enzymatic activities that affect alpha-synuclein degradation and Parkinson's disease susceptibility. Cell 111:209-18 (2002).

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