UCH-L1 (13C4): sc-58594

SANTA CRUZ®

BIOTECHNOLOGY

The Power to Question

BACKGROUND

UCH-L1 (ubiquitin C-terminal hydrolase) is a member of a gene family whose products hydrolyze small C-terminal adducts of ubiquitin to generate the ubiquitin monomer. Expression of UCH-L1 is highly specific to neurons and to cells of the diffuse neuroendocrine system and their tumors. UCH-L1 is expressed in brain neurons. Examination of specific brain regions reveals expression in all areas tested, particularly in the substantia nigra. UCH-L1 represents 1 to 2% of total soluble brain protein. Its occurrence in Lewy bodies and its function in the proteasome pathway make it a compelling candidate gene in Parkinson disease. The gene which encodes UCH-L1 maps to human chromosome 4p13. The 230 amino acid human UCH-L3 protein is 54% identical to that of UCH-L1. UCH-L3 is the predominant thiol protease and has high-affinity binding sites for ubiquitin.

REFERENCES

1. Doran, J.F., et al. 1983. Isolation of PGP 9.5, a new human neurone-specific protein detected by high resolution two-dimensional electrophoresis. J. Neurochem. 40: 1542-1547.

2. Wilkinson, K.D., et al. 1989. The neuron-specific protein PGP 9.5 is a ubiquitin carboxyl-terminal hydrolase. Science 246: 670-673.

CHROMOSOMAL LOCATION

Genetic locus: UCHL1 (human) mapping to 4p13; Uchl1 (mouse) mapping to 5 C3.1.

SOURCE

UCH-L1 (13C4) is a mouse monoclonal antibody raised against native UCH-L1 protein of human origin.

PRODUCT

Each vial contains 200 µg IgG$_{2a}$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

UCH-L1 (13C4) is recommended for detection of UCH-L1 on neuronal cell bodies and axons in the CNS and periphery, small nerve fibers in peripheral tissues, neuroendocrine cells in the pituitary, thyroid, pancreas and tumors of the DNES of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500); also recommended for detection of UCH-L1 in human adult gut.

Suitable for use as control antibody for UCH-L1 siRNA (h): sc-42304, UCH-L1 siRNA (m): sc-42305, UCH-L1 shRNA Plasmid (h): sc-42304-SH, UCH-L1 shRNA Plasmid (m): sc-42305-SH, UCH-L1 shRNA (h) Lentiviral Particles: sc-42304-V and UCH-L1 shRNA (m) Lentiviral Particles: sc-42305-V.

Molecular Weight of UCH-L1: 25 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, IMR-32 cell lysate: sc-2409 or PC-12 cell lysate: sc-2250.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA
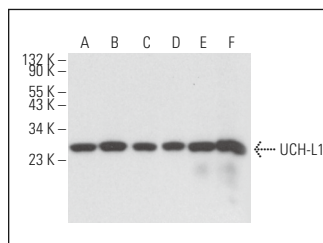
UCH-L1 (13C4): sc-58594. Western blot analysis of UCH-L1 expression in IMR-32 (**A**), Neuro-2A (**B**), PC-12 (**C**) and SH-SY5Y (**D**) whole cell lysates and mouse brain (**E**) and rat brain (**F**) tissue extracts. Detection reagent used: m-IgGκ BP-HRP: sc-516102.
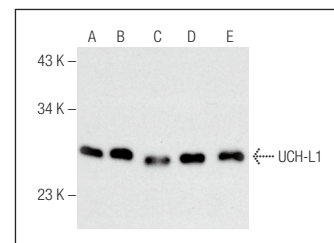
UCH-L1 (13C4): sc-58594. Western blot analysis of UCH-L1 expression in IMR-32 (**A**), Neuro-2A (**B**), PC-12 (**C**) and SK-N-SH (**D**) whole cell lysates and mouse brain tissue extract (**E**).

SELECT PRODUCT CITATIONS

1. Ozgul, S., et al. 2015. Linking a compound-heterozygous Parkin mutant (Q311R and A371T) to Parkinson's disease by using proteomic and molecular approaches. Neurochem. Int. 85-86: 1-13.

2. Guo, Y.Y., et al. 2017. Ubiquitin C-terminal hydrolase L1 (UCH-L1) promotes hippocampus-dependent memory via its deubiquitinating effect on TrkB. J. Neurosci. 37: 5978-5995.

3. Uslubas, I., et al. 2021. Effect of aflibercept on proliferative vitreoretinopathy: proteomic analysis in an experimental animal model. Exp. Eye Res. 203: 108425.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.