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Product Information

Anti-UCH-L3 (C-terminal)
produced in rabbit, affinity isolated antibody

Product Number **U7133**

Product Description

Anti-UCH-L3 (C-terminal) is produced in rabbit using as immunogen a synthetic peptide corresponding to a sequence at the C-terminal of human UCH-L3 (GeneID 7347) conjugated to KLH. This sequence is identical in rat Uchl3 and mouse Uchl4. The antibody is affinity-purified using the immunizing peptide immobilized on agarose.

Anti-UCH-L3 (C-terminal) specifically recognizes human, mouse, and rat UCH-L3 by immunoblotting (~30 kDa). Staining of the UCH-L3 band by immunoblotting is specifically inhibited by the UCH-L3 immunizing peptide.

The ubiquitin-proteasome system (UPS) is involved in the pathogenic mechanisms of several common neurodegenerative diseases.[1,2] Under conditions that induce the accumulation of misfolded proteins, including oxidative stress or neurotoxin exposure, misfolded proteins aggregate and form inclusion bodies leading to loss of cell function and neuronal cell death. UCH-L3 (ubiquitin C-terminal esterase L3) belongs to the ubiquitin-C-terminal hydrolase family that deubiquitinates ubiquitin-protein conjugates in the UPS. The major function of UCHs is related to mono-ubiquitin recycling, thereby sustaining protein degradation. The genes encoding for at least four human UCHs, UCH-L1, UCH-L2, UCH-L3, and UCH-L5 have been identified. UCH-L1 and UCH-L3 are the predominant UCHs, sharing 52% amino acid identity. An additional UCH member, murine Uchl4 shows 94% identity to human UCH-L3. UCH-L1 is highly expressed in neurons and testis, whereas UCH-L3 mRNA is ubiquitously expressed. UCH-L3 has been shown to bind to the small ubiquitin-like protein Nedd8 and process its C-terminus.[3] Loss of Uchl3 in mice displays distinct degenerative defects. Loss of both UCH-L1 and UCH-L3 leads to exacerbated defects, including neurodegeneration, posterior paralysis, dysphagia and early-onset death, suggesting that UCH-L1 and UCH-L3 have both separate and overlapping functions.[4] UCH-L3 deletion mutant in mice results in mitochondrial oxidative stress leading to photoreceptor cell apoptosis and retinal degeneration.[5]

Reagent

Supplied as a solution in 0.01 M PBS, pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody concentration: ~1.5 mg/mL

Precautions and Disclaimer

For R&D use only. Not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2–8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working antibody concentration of 0.5-1.0 μg/mL is recommended using mouse and rat brain extracts (S1 fraction) and HEK-293T cells expressing human UCH-L3.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

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3. Wada, H. et al., *Biochem. Biophys. Res. Commun.,* **251**, 688-692 (1998).
4. Kurihara, L.J. et al., *Hum. Mol. Genet.,* **10**, 1963-1970 (2001).
5. Sano, Y. et al., *Am. J. Pathol.*, **169**, 132-141 (2006).

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