Product Datasheet

UCH-L1/PGP9.5 Antibody
NB110-58872

Unit Size: 0.1 ml

Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.

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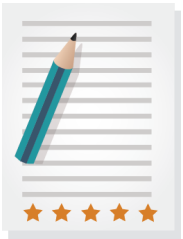
Updated 10/23/2024 v.20.1



NB110-58872

UCH-L1/PGP9.5 Antibody

Product Information

Unit Size	0.1 ml
Concentration	Please see the vial label for concentration. If unlisted please contact technical services.
Storage	Store at 4C short term. Aliquot and store at -20C long term. Avoid freeze-thaw cycles.
Clonality	Polyclonal
Preservative	0.035% Sodium Azide
Isotype	IgY
Purity	IgY purified
Buffer	Supplied as concentrated total IgY preparation from egg yolk. Exact concentration of target specific IgY is not quantifiable as the preparation contains both immune IgY specific for the target and also irrelevant, non-immune IgY.
Target Molecular Weight	24 kDa

Product Description

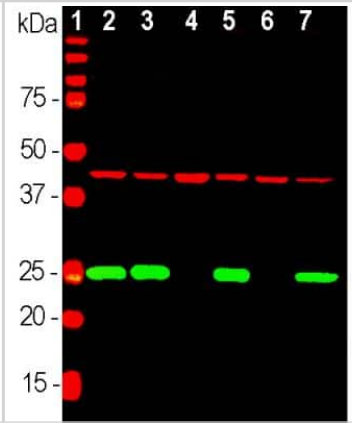
Host	Chicken
Gene ID	7345
Gene Symbol	UCHL1
Species	Human, Mouse, Rat, Porcine, Bovine, Equine
Marker	pan-Neuronal Marker
Immunogen	Recombinant full length human UCHL1 purified from E. coli. [UniProt# P09936]
Notes	Chicken products cannot be exported to Canada.

Product Application Details

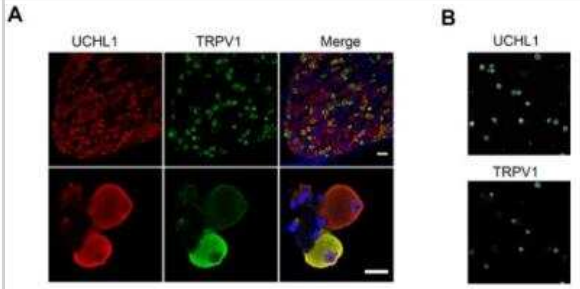
Applications	Western Blot, Immunocytochemistry/ Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Frozen
Recommended Dilutions	Western Blot 1:10000, Immunohistochemistry 1:1000, Immunocytochemistry/ Immunofluorescence 1:1000, Immunohistochemistry-Frozen
Application Notes	This UCHL1 antibody is useful for ICC/IF and WB, where a band is seen at ~24 kDa. Use in IHC-Fr reported in scientific literature (PMID: 24190886).

Images

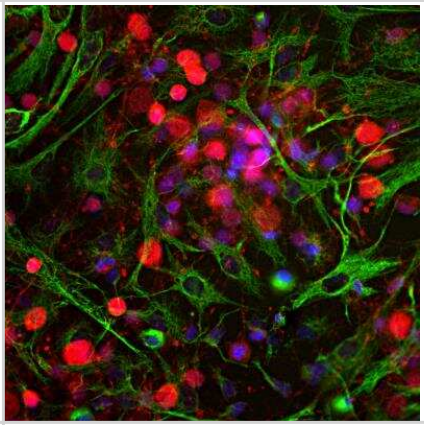
Western Blot: UCH-L1/PGP9.5 Antibody [NB110-58872] - Analysis of equal amounts of different tissue and cell lysates using chicken pAb to UCHL1, NB110-58872, dilution 1:2,000 in green, and mouse mAb to Actin, dilution 1:1,000, in red: [1] protein standard, [2] rat brain, [3] mouse brain, [4] NIH-3T3, [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 but not in lysates of HeLa, NIH-3T3 and other non-neuronal cells. Actin is detected with apparent molecular weight of 42 kDa and provides an excellent loading control.



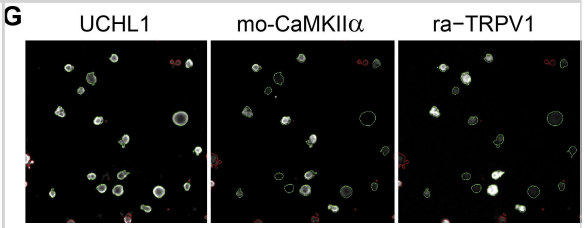
Immunocytochemistry/Immunofluorescence: UCH-L1/PGP9.5 Antibody [NB110-58872] - (A) Immunolabeling of the neuronal marker UCHL1 and TRPV1 in frozen DRG sections and cultured sensory neurons from rat. TRPV1 is selectively expressed in a subpopulation of sensory neurons. (B) Representative view field showing the automated image analysis to quantify TRPV1 expression in cultured sensory neurons. Green encircled objects represent sensory neurons marked by UCHL1. Image collected and cropped by CiteAb from the following publication (journals.plos.org/plosone/article?id=10.1371/journal.pone.0115731), licensed under a CC-BY license.



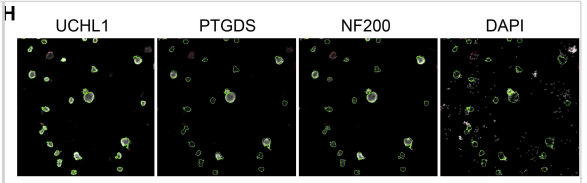
Immunocytochemistry/Immunofluorescence: UCH-L1/PGP9.5 Antibody [NB110-58872] - Analysis of cortical neuron-glial cell culture from E20 rat stained with chicken pAb to UCHL1, NB110-58872 , dilution 1:500 in red, and costained with mouse mAb to vimentin, dilution 1:2,000, in green. The blue is DAPI staining 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.



Immunocytochemistry/ Immunofluorescence: UCH-L1/PGP9.5 Antibody [NB110-58872] - Validation of the transcriptome data by single cell based quantitative High Content Screening (HCS) microscopy focusing on selected signaling-relevant proteins.(A) Triple staining of the neuronal marker UCHL1 & two different TRPV1 antibodies derived from rabbit & goat, respectively, to facilitate the analysis of various targets. The staining intensities obtained with both TRPV1 antibodies correlated significantly (Spearmans ρ=0.96, p<2.2e-16). (B-E, G) Co-labeling of TRPV1 & CART (B), Nos1 (C), KChIP1 (D), KChIP2 (E), & CaMKIIα (G). Plots of respective controls are shown in S1 Fig. (F) Average fluorescence intensities of TRPV1 & the indicated targets in TRPV1-negative (grey) & -positive (black) neurons. Signal intensities of all analyzed targets were significantly higher within the TRPV1(+) population (n=3 with>3000 analyzed neurons per experiment, paired two-tailed t-tests). Image collected & cropped by CiteAb from the following publication (https://dx.plos.org/10.1371/journal.pone.0115731), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



Immunocytochemistry/ Immunofluorescence: UCH-L1/PGP9.5 Antibody [NB110-58872] - PGD2 is a paracrine mediator synthesized in myelinated large-diameter neurons acts on TRPV1(+) neurons.(A) Dose-dependent induction of RII phosphorylation in sensory neurons after 1 min stimulation w/ PGD2 (EC50=377 nM, n=3,>2000 neurons/condition; one-way ANOVA w/ Bonferroni's multiple comparisons test). (B) PGD2 did not induce pRII in non-neuronal cells of same cultures shown in A. (C) Time course of RII phosphorylation indicating long-lasting effects of PGD2 (10 µM) on sensory neurons. (D) Stimulation w/ PGD2 also results in phosphorylation of ERK1/2 measured in same cultures shown in D. (E) Representative experiment demonstrating induction of RII phosphorylation is enhanced in TRPV1(+) neurons (total of 3664 neurons). Plots of respective controls are shown in S2 Fig. (F) Fold changes of pRII intensities in TRPV1(−) (grey bars) & TRPV1(+) (black bars) neurons after 1 min stimulation w/ 10 µM PGD2 (n=3,>2000 neurons/condition, one-way ANOVA w/ Bonferroni's multiple comparisons test). (G) Co-labeling of TRPV1 & PTGDS revealing PTGDS is expressed in neurons lacking TRPV1 (total of 9951 neurons, also refer to S2 Fig. for control plots). (H) Co-labeling of NF200 & PTGDS showing PTGDS(+) neurons express NF200 (total of 12966 neurons, also refer to S2 Fig. for control plots).(I) Size distribution of PTGDS(+) (green), NF200(+) (red), & all sensory neurons (black) indicating PTGDS(+) neurons are larger than other neurons. (J) Suggested pathway of interneuronal communication between subgroups of sensory neurons. Large-diameter mechanosensitive neurons express PTGDS resulting in production of PGD2, which activates DP1 receptors present on nociceptive neurons expressing TRPV1. Image collected & cropped by CiteAb from following publication (https://dx.plos.org/10.1371/journal.pone.0115731), licensed under a CC-BY license. Not internally tested by Novus Biologicals.



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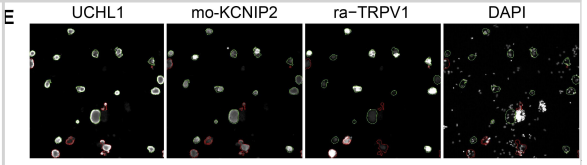

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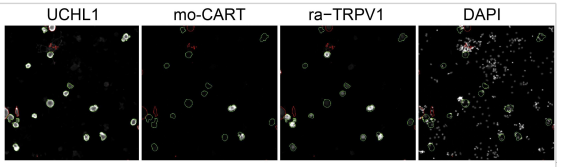

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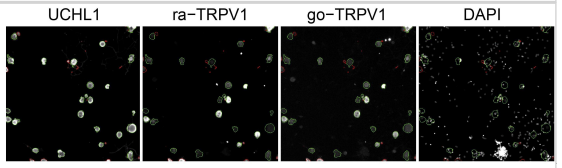

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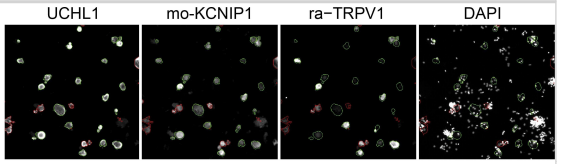

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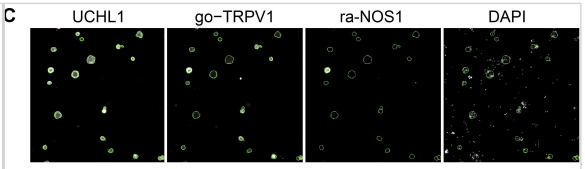

Publications

Alexander G. Foote, Vlasta Lungova, Susan L. Thibeault Piezo1 -expressing vocal fold epithelia modulate remodeling via effects on self-renewal and cytokeratin differentiation Cellular and Molecular Life Sciences 2022-11-14 [PMID: 36376494]

R□derer P, Belu A, Heidrich L et al. Emergence of nociceptive functionality and opioid signaling in human induced pluripotent stem cell-derived sensory neurons Pain 2023-08-01 [PMID: 36727909] (Immunocytochemistry/ Immunofluorescence)

Guan Q, Velho R, Jordan A et al. Nociceptin/Orphanin FQ Opioid Peptide-Receptor Expression in the Endometriosis-Associated Nerve FibersPossible Treatment Option? Cells 2023-05-15 [PMID: 37408230] (IHC-P, Human)

Yang NJ, Isensee J, Neel DV et al. Anthrax toxins regulate pain signaling and can deliver molecular cargoes into ANTXR2+ DRG sensory neurons Nature neuroscience 2021-12-20 [PMID: 34931070] (ICC/IF, Mouse)

JettE, M E, Clary, M S Et al. Chemical receptors of the arytenoid: A comparison of human and mouse. Laryngoscope 2020-02-01 [PMID: 30908677] (WB, Human)

Isensee J, van Cann M, Despang P Et al. Depolarization induces nociceptor sensitization by CaV1.2-mediated PKA-II activation The Journal of cell biology 2021-10-04 [PMID: 34431981]

Lopez E Investigating Mechanisms in Nociceptors Driving Ongoing Activity and Ongoing Pain Thesis 2021-01-01

Lopez ER, Carbajal AG, Tian JB et al. Serotonin enhances depolarizing spontaneous fluctuations, excitability, and ongoing activity in isolated rat DRG neurons via 5-HT4 receptors and cAMP-dependent mechanisms Neuropharmacology 2020-11-18 [PMID: 33220305]

Isensee J, Schild C et al. Crosstalk from cAMP to ERK1/2 emerges during postnatal maturation of nociceptive neurons and is maintained during aging. J Cell Sci 2017-01-07 [PMID: 28515230] (ICC/IF, Rat)

Loos C, Moeller K et al. A Hierarchical, Data-Driven Approach to Modeling Single-Cell Populations Predicts Latent Causes of Cell-To-Cell Variability. Cell Syst 2018-05-23 [PMID: 29730254] (ICC/IF, Rat)

Isensee J, Kaufholz M et al. PKA-RII subunit phosphorylation precedes activation by cAMP and regulates activity termination. J Cell Biol 2018-03-04 [PMID: 29615473] (ICC/IF, Rat)

van Cann M, Kuzmenkov A, Isensee J et al. Scorpion toxin MeuNaTx alpha-1 sensitizes primary nociceptors by selective modulation of voltage-gated sodium channels FEBS J 2020-10-13 [PMID: 33051988]

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NB300-675PEP	UCH-L1/PGP9.5 Antibody Blocking Peptide

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