abcam

ab86808

Anti-PGP9.5 antibody [346CT2.5.1] - Neuronal Marker

Recombinant

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	346CT2.5.1
Purification technique	Affinity purification Protein A
Concentration	1.137 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/100
Notes	-

Species	Mouse
Dilution info	1/100
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	-

Species	Rat
Dilution info	1/50
Notes	-

Species	Mouse

Dilution info	1/50
Notes	-

Target data

See full target information UCHL1

Function	Deubiquitinase that plays a role in the regulation of several processes such as maintenance of synaptic function, cardiac function, inflammatory response or osteoclastogenesis (PubMed:22212137, PubMed:23359680). Abrogates the ubiquitination of multiple proteins including WWTR1/TAZ, EGFR, HIF1A and beta-site amyloid precursor protein cleaving enzyme 1/BACE1 (PubMed:22212137, PubMed:25615526). In addition, recognizes and hydrolyzes a peptide bond at the C-terminal glycine of ubiquitin to maintain a stable pool of monoubiquitin that is a key requirement for the ubiquitin-proteasome and the autophagy-lysosome pathways (PubMed:12408865, PubMed:8639624, PubMed:9774100). Regulates amyloid precursor protein/APP processing by promoting BACE1 degradation resulting in decreased amyloid beta production (PubMed:22212137). Plays a role in the immune response by regulating the ability of MHC I molecules to reach cross-presentation compartments competent for generating Ag-MHC I complexes (By similarity). Mediates the 'Lys-48'-linked deubiquitination of the transcriptional coactivator WWTR1/TAZ leading to its stabilization and inhibition of osteoclastogenesis (By similarity). Deubiquitinates and stabilizes epidermal growth factor receptor EGFR to prevent its degradation and to activate its downstream mediators (By similarity). Modulates oxidative activity in skeletal muscle by regulating key mitochondrial oxidative proteins (By similarity). Enhances the activity of hypoxia-inducible factor 1-alpha/HIF1A by abrogateing its VHL E3 ligase-mediated ubiquitination and consequently inhibiting its degradation (PubMed:25615526).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

This monoclonal antibody to PGP9.5 has been knockout validated in Western blot. The expected band for PGP9.5 was observed in wild type cells and the band was not seen in knockout cells.

The production method has been switched from hybridoma to recombinant on 24th Oct 2025.

Want a custom formulation?
This antibody clone is manufactured by Abcam. If you require a custom buffer formulation or conjugation for your experiments, please contact orders@abcam.com

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Protein Gene Product 9.5 (PGP9.5) also known as ubiquitin carboxyl-terminal hydrolase L1 (UCH-L1) is an enzyme of approximately 27 kDa mass. PGP9.5 is highly expressed in neurons and neuroendocrine cells and is involved in the processing of ubiquitinated proteins. Ubiquitination and deubiquitination are critical for maintaining cellular protein homeostasis. PGP9.5 is present in the central and peripheral nervous systems. Researchers often utilize PGP9.5 as a neuronal marker due to its strong expression in nerve tissues. Antibody clone 13C4 is commonly used in PGP9.5 immunohistochemistry to visualize this protein in histopathology sections.
Biological function summary	PGP9.5 plays a significant role in the ubiquitin-proteasome pathway where it regulates protein degradation. It functions by cleaving ubiquitin from ubiquitin-protein conjugates which can recycle ubiquitin for reuse impacting protein turnover. This process is important for removing misfolded or damaged proteins maintaining cellular integrity. PGP9.5 has not been documented as a part of any large multimeric complex; its action is rather individual yet vital in cellular processes.
Pathways	PGP9.5 is an important participant in the ubiquitin-dependent proteolysis pathway. This pathway controls the degradation of proteins that regulate cell cycle differentiation and neuromodulation. PGP9.5 works in tandem with other proteins such as the proteasome complex to remove proteins tagged for destruction. Another important pathway linked with PGP9.5 is the neuronal development pathway in which its activity supports neuron growth and repair.
Associated diseases and disorders	Defective PGP9.5 function associates mainly with neurodegenerative diseases such as Parkinson's disease and Alzheimer's disease. Mutations or dysregulation in

PGP9.5 expression are implicated in the pathogenesis of these conditions affecting protein degradation and neuronal health. Other proteins like α-synuclein in Parkinson's disease interact with PGP9.5 pathways indicating their involvement in disease mechanisms. Researchers consider PGP9.5 a potential biomarker for neuronal pathology through methods like PGP9.5 IHC allowing for evaluation of nerve damage and neuroendocrine tumor diagnosis.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

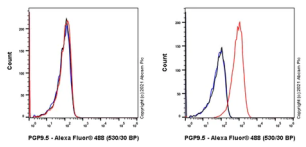
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

8 product images

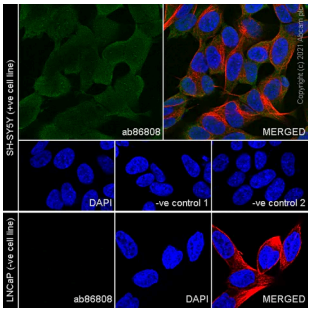


Flow Cytometry (Intracellular) - Anti-PGP9.5 antibody [346CT2.5.1] - Neuronal Marker (ab86808)

PGP9.5 Flow Cytometry (Intracellular) staining using mouse Anti-PGP9.5 antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized LNCaP (Human prostate carcinoma epithelial cell, Left) / SH-SY5Y (Human neuroblastoma epithelial cell, Right) cells labelling PGP9.5 with ab86808 at 1/100 dilution (1ug) followed by Goat anti-Mouse IgG (Alexa Fluor® 488, ab150113) secondary at 1/2000 dilution (Red) compared with a Mouse monoclonal IgG isotype control (Black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

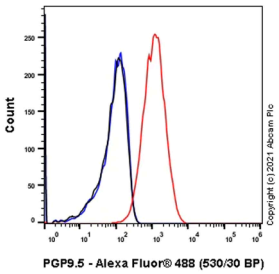
Negative control: LNCaP.



Immunocytochemistry/ Immunofluorescence - Anti-PGP9.5 antibody [346CT2.5.1] - Neuronal Marker (ab86808)

PGP9.5 Immunocytochemistry/ Immunofluorescence staining of SH-SY5Y (human neuroblastoma epithelial cell) cells using mouse Anti-PGP9.5 antibody

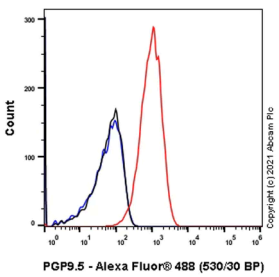
Immunofluorescent analysis of 4% Paraformaldehyde fixed, 0.1% Triton X-100 permeabilized SH-SY5Y cells with ab86808 at 1/50 dilution followed by ab150113 Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used for counterstain at a 1/200 dilution followed by ab150080 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) at 1/500 dilution (Red). Nuclear DNA was labelled with DAPI (shown in blue) Confocal image showing cytoplasmic and weak nuclear staining in SH-SY5Y cells and no staining in LNCaP cells.
Negative control: LNCaP(PMID: 17929277)



Flow Cytometry (Intracellular) - Anti-PGP9.5 antibody [346CT2.5.1] - Neuronal Marker (ab86808)

PGP9.5 Flow Cytometry (Intracellular) staining of Neuro-2a (Mouse neuroblastoma neuroblast) using mouse Anti-PGP9.5 antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized Neuro-2a (Mouse neuroblastoma neuroblast) cells labelling PGP9.5 with ab86808 at 1/1000 dilution (0.1ug) followed by Goat anti-Mouse IgG (Alexa Fluor® 488, ab150113) secondary at 1/2000 dilution (Red) compared with a Mouse monoclonal IgG isotype control (Black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

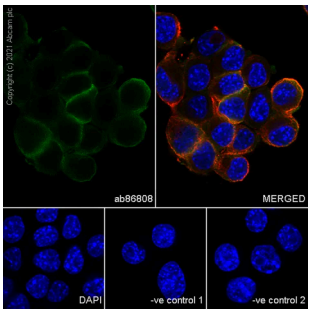


Flow Cytometry (Intracellular) - Anti-PGP9.5 antibody [346CT2.5.1] - Neuronal Marker (ab86808)

PGP9.5 Flow Cytometry (Intracellular) staining of PC-12 (Rat adrenal gland pheochromocytoma) using mouse Anti-PGP9.5 antibody

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized PC-12 (Rat adrenal gland pheochromocytoma) cells labelling PGP9.5 with ab86808 at 1/1000 dilution (0.1ug) followed by Goat anti-Mouse IgG (Alexa Fluor® 488, ab150113) secondary at 1/2000 dilution (Red)

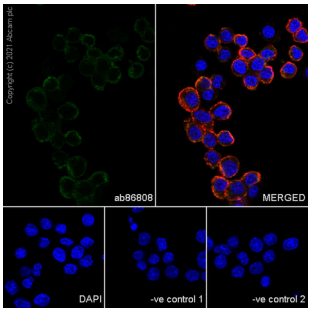
compared with a Mouse monoclonal IgG isotype control (Black) and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).



Immunocytochemistry/ Immunofluorescence - Anti-PGP9.5 antibody [346CT2.5.1] - Neuronal Marker (ab86808)

PGP9.5 Immunocytochemistry/ Immunofluorescence staining of Neuro-2a (mouse neuroblastoma neuroblast) cells using mouse Anti-PGP9.5 antibody

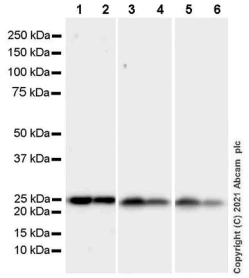
Immunofluorescent analysis of 4% Paraformaldehyde fixed, 0.1% Triton X-100 permeabilized Neuro-2a cells with ab86808 at 1/50 dilution followed by ab150113 Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used for counterstain at a 1/200 dilution followed by ab150080 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) at 1/500 dilution (Red). Nuclear DNA was labelled with DAPI (shown in blue)
Confocal image showing mainly cytoplasmic staining in Neuro-2a cells.



Immunocytochemistry/ Immunofluorescence - Anti-PGP9.5 antibody [346CT2.5.1] - Neuronal Marker (ab86808)

PGP9.5 Immunocytochemistry/ Immunofluorescence staining of PC-12 (rat adrenal gland pheochromocytoma) cells using mouse Anti-PGP9.5 antibody

Immunofluorescent analysis of 4% Paraformaldehyde fixed, 0.1% Triton X-100 permeabilized PC-12 cells with ab86808 at 1/50 dilution followed by ab150113 Goat Anti-Mouse IgG H&L (Alexa Fluor® 488) antibody at 1/1000 dilution (Green). ab179513 Anti-beta Tubulin rabbit monoclonal antibody was used for counterstain at a 1/200 dilution followed by ab150080 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 594) at 1/500 dilution (Red). Nuclear DNA was labelled with DAPI (shown in blue)
Confocal image showing mainly cytoplasmic staining in PC-12 cells



Western blot - Anti-PGP9.5 antibody [346CT2.5.1] - Neuronal Marker (ab86808)

PGP9.5 Western blot staining using mouse Anti-PGP9.5 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

Exposure time:
Lane 1,2: 37 seconds
Lane 3-6: 10 seconds
All lanes:
Western blot - Anti-PGP9.5 antibody [346CT2.5.1] - Neuronal Marker (ab86808) at 1/1000 dilution

Lane 1:
Human testis tissue lysate at 20 µg

Lane 2:
Human kidney tissue lysate at 20 µg

Lane 3:
Mouse brain tissue lysate at 20 µg

Lane 4:
Mouse testis tissue lysate at 20 µg

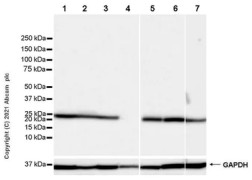
Lane 5:
Rat brain tissue lysate at 20 µg

Lane 6:
Rat testis tissue lysate at 20 µg

Secondary

All lanes:
Peroxidase-Conjugated Goat anti-Mouse IgG (H+L) at 1/10000 dilution

Predicted band size: 25 kDa



Western blot - Anti-PGP9.5 antibody [346CT2.5.1] - Neuronal Marker (ab86808)

PGP9.5 Western blot staining using mouse Anti-PGP9.5 antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.

Exposure time:
Lane 1-6: 10 seconds
Lane 7: 37 seconds
Negative control: LNCap (PMID: 17929277)

All lanes:
Western blot - Anti-PGP9.5 antibody [346CT2.5.1] - Neuronal Marker (ab86808) at 1/1000 dilution

Lane 1:
SH-SY5Y (human neuroblastoma epithelial cell), whole cell lysate at 20 µg

Lane 2:
Y79 (human retinoblastoma retinoblastoma), whole cell lysate at 20 µg

Lane 3:
U-87 MG (human glioblastoma-astrocytoma epithelial cell), whole cell lysate at 20 µg

Lane 4:
LNCaP (human prostate carcinoma epithelial cell), whole cell lysate at 20 µg

Lane 5:
RAW264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage), whole cell lysate at 20 µg

Lane 6:
Neuro-2a (mouse neuroblastoma neuroblast), whole cell lysate at 20 µg

Lane 7:
PC-12 (rat adrenal gland pheochromocytoma), whole cell lysate at 20 µg

Secondary

All lanes:
Peroxidase-Conjugated Goat anti-Mouse IgG (H+L) at 1/10000 dilution

Predicted band size: 25 kDa

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