Datasheet: 7863-1004

Description:	MOUSE ANTI HUMAN PROTEIN GENE PRODUCT 9.5
Specificity:	PROTEIN GENE PRODUCT 9.5
Other names:	PGP 9.5, UCHL1
Format:	Purified
Product Type:	Monoclonal Antibody
Clone:	31A3
Isotype:	IgG1
Quantity:	0.2 mg

Product Details

Applications

This product has been reported to work in the following applications. This information is derived from testing within our laboratories, peer-reviewed publications or personal communications from the originators. Please refer to references indicated for further information. For general protocol recommendations, please visit www.bio-rad-antibodies.com/protocols.

	Yes	No	Not Determined	Suggested Dilution
Immunohistology - Paraffin (1)	▪			1/100 - 1/400
ELISA	▪			1/500 - 1/2000
Western Blotting	▪			

The PrecisionAb label is reserved for antibodies that meet the defined performance criteria within Bio-Rad's ongoing antibody validation programme. Click here to learn how we validate our PrecisionAb range. Where this product has not been tested for use in a particular technique this does not necessarily exclude its use in such procedures. Suggested working dilutions are given as a guide only. It is recommended that the user titrates the product for use in their own system using the appropriate negative/positive controls.

(1) **This antibody is suitable for use on paraffin embedded tissue sections. We do however recommend fixation in 95% ethanol/5% acetic acid for 2-3 hours prior to paraffin embedding. Specimens which have not been fixed in acetic acid/alcohol will require pretreatment using the microwave-citrate buffer method.**

Target Species

Human

Species Cross Reactivity

Reacts with: Rat, Rabbit, Pig, Water Buffalo
Does not react with:Guinea Pig
N.B. Antibody reactivity and working conditions may vary between species. Cross reactivity is derived from testing within our laboratories, peer-reviewed publications or

	personal communications from the originators. Please refer to references indicated for further information.
Product Form	Purified IgG - liquid
Preparation	Purified IgG prepared by affinity chromatography on Protein A from tissue culture supernatant
Buffer Solution	Phosphate buffered saline
Preservative Stabilisers	0.09% Sodium Azide (NaN_3)
Carrier Free	Yes
Approx. Protein Concentrations	1mg/ml
Immunogen	Native, from brain
External Database Links	**UniProt:** P09936 Related reagents **Entrez Gene:** 7345 UCHL1 Related reagents
RRID	AB_620256
Specificity	**Mouse anti Human Protein Gene Product 9.5 antibody, clone 31A3** recognizes protein gene product 9.5 (PGP9.5), a ubiquitin hydrolase which is widely expressed in neuronal tissues and represents 1-2% of total soluble brain proteins. PGP9.5, also known as ubiquitin C-terminal hydrolase 1 (UCHL-1), is involved in the regulation of the ubuiquitin pathway. Mouse anti Human Protein Gene Product 9.5 antibody, clone 31A3 stains neuronal cell bodies and axons in the CNS and periphery, small nerve fibres in peripheral tissues, neuroendocrine cells in the pituitary, thyroid, pancreas and tumours of the DNES. Clones 31A3 and 13C4 each recognise a different epitope towards the N-terminus of the protein. Mouse anti Human Protein Gene Product 9.5 antibody, clone 31A3 also recognizes PGP9.5 in other species, including rat and rabbit but evidence suggests it does not bind to PGP9.5 in guinea pigs (Wilson *et al.* 1988). Mouse anti Human Protein Gene Product 9.5 antibody, clone 31A3 has been used successfully as a capture reagent with clone 13C4 as a detection reagent in a sandwich ELISA to evaluate contamination of processed meat samples with neuronal tissue (Gaunitz *et al.* 2009).
References	1. Wilson, P.O. *et al.* (1988) The immunolocalization of protein gene product 9.5 using rabbit polyclonal and mouse monoclonal antibodies. Br J Exp Pathol. 69 (1): 91-104.

2. Nonclercq, D. *et al.* (2002) Phenotypic variations and dynamic topography of transformed cells in an experimental model of diethylstilbestrol-induced renal tumour in male Syrian hamster. Histochem J. 34 (10): 487-97.
3. García-Añoveros, J. *et al.* (2001) Transport and localization of the DEG/ENaC ion channel BNaC1alpha to peripheral mechanosensory terminals of dorsal root ganglia neurons. J Neurosci. 21 (8): 2678-86.
4. Verhein, K.C. *et al.* (2011) Three days after a single exposure to ozone, the mechanism of airway hyperreactivity is dependent on substance P and nerve growth factor. Am J Physiol Lung Cell Mol Physiol. 300: L176-84.
5. Caballero, O.L. *et al*. (2002) Interaction and colocalization of PGP9.5 withJAB1 and p27(Kip1). Oncogene. 21:3003-10.
6. Kondo, T. *et al.* (2013) Prostaglandin E2 mediates acid-induced heartburn in healthy volunteers. Am J Physiol Gastrointest Liver Physiol. 304(6):G568-73
7. Mihara, H. *et al.* (2010) Involvement of TRPV2 activation in intestinal movement through nitric oxide production in mice. J Neurosci. 30: 16536-44.
8. Forsgren, K. *et al.* (1999) Regeneration of nerve fibres in the maxillary sinus mucosa after experimental surgery. An immunocytochemical double-labelling study in the rabbit. Acta Otolaryngol. 119: 486-91.
9. Yee, C.L. *et al.* (2001) "Type III" cells of rat taste buds: immunohistochemical and ultrastructural studies of neuron-specific enolase, protein gene product 9.5, and serotonin. J Comp Neurol. 440: 97-108.
10. Pauza, D.H. *et al.* (2014) A combined acetylcholinesterase and immunohistochemical method for precise anatomical analysis of intrinsic cardiac neural structures. Ann Anat. pii: S0940-9602(14)00159-9.
11. Sugimoto, K. *et al.* (2011) Olmesartan ameliorates peripheral nerve dysfunction in Zucker diabetic fatty rats. J Hypertens. 29: 1337-46.
12. Bishop, P. *et al.* (2014) The ubiquitin C-terminal hydrolase L1 (UCH-L1) C terminus plays a key role in protein stability, but its farnesylation is not required for membrane association in primary neurons. J Biol Chem. 289 (52): 36140-9.
13. Moldovan, M. *et al.* (2013) Peptide mimetic of the S100A4 protein modulates peripheral nerve regeneration and attenuates the progression of neuropathy in myelin protein P0 null mice. Mol Med. 19: 43-53.
14. Kaleczyc, J. *et al.* (2007) The distribution and chemical coding of intramural neurons supplying the porcine stomach - the study on normal pigs and on animals suffering from swine dysentery. Anat Histol Embryol. 36 (3): 186-93.
15. Silva, I. *et al.* (2015) Activation of P2Y6 Receptors Facilitates Nonneuronal Adenosine Triphosphate and Acetylcholine Release from Urothelium with the Lamina Propria of Men with Bladder Outlet Obstruction. J Urol. 194 (4): 1146-54.
16. Gaunitz C *et al.* (2009) Suitability of antigens PGP 9.5 and neurofilament light as marker proteins for detection of neuronal tissue in processed meat products. J Food Prot. 72 (5): 1070-7.
17. Forsgren, K. *et al.* (1999) Regeneration of nerve fibres in the maxillary sinus mucosa after experimental surgery. An immunocytochemical double-labelling study in the rabbit. Acta Otolaryngol. 119 (4): 486-91.
18. Pauziene, N. *et al.* (2016) Innervation of the rabbit cardiac ventricles. J Anat. 228 (1): 26-46.
19. Rashwan, A. *et al.* (2016) Ontogeny and innervation of taste buds in mouse palatal

gustatory epithelium. J Chem Neuroanat. 71: 26-40.
20. Inokaitis, H. *et al.* (2016) Innervation of sinoatrial nodal cells in the rabbit. Ann Anat. Apr 1. pii: S0940-9602(16)30039-5. [Epub ahead of print]
21. Lee, W-Y. *et al.* (2016) Establishment of a surgically induced cryptorchidism canine recipient model for spermatogonial stem cell transplantation. Laboratory Animal Research. 32 (4): 257.
22. Lee, K.H. *et al.* (2016) Vitrified canine testicular cells allow the formation of spermatogonial stem cells and seminiferous tubules following their xenotransplantation into nude mice. Sci Rep. 6: 21919.
23. Lakritz, J.R. *et al.* (2017) An oral form of methylglyoxal-bis-guanylhydrazone reduces monocyte activation and traffic to the dorsal root ganglia in a primate model of HIV-peripheral neuropathy. J Neurovirol. May 1 [Epub ahead of print]
24. Day, I.N. & Thompson, R.J. (2010) UCHL1 (PGP 9.5): neuronal biomarker and ubiquitin system protein. Prog Neurobiol. 90 (3): 327-62.
25. Park, H.J. *et al.* (2017) Stage-specific expression of Sal-like protein 4 in boar testicular germ cells. Theriogenology. 101: 44-52.
26. Hur, T.Y. *et al.* (2017) Dose-dependent effects of busulfan on dog testes in preparation for spermatogonial stem cell transplantation. Lab Anim Res. 33 (3): 264-9.
27. Park, H.J. *et al.* (2018) Species-specific expression of phosphoglycerate kinase 2 (PGK2) in the developing porcine testis. Theriogenology. 110: 158-167.
28. Zalecki, M. (2019) Gastric ulcer induced changes in substance P and Nk1, Nk2, Nk3 receptors expression in different stomach localizations with regard to intrinsic neuronal system. Histochem Cell Biol. 151 (1): 29-42.
29. Ceredig, R.A. *et al.* (2018) Peripheral delta opioid receptors mediate duloxetine antiallodynic effect in a mouse model of neuropathic pain. Eur J Neurosci. 48 (5): 2231-46.
30. Zalecki, M. *et al.* (2020) Inferior vagal ganglion galaninergic response to gastric ulcers. PLoS One. 15 (11): e0242746.
31. Zhang, P.F. *et al.* (2020) Integrated analysis of phosphoproteome and ubiquitylome in epididymal sperm of buffalo (*Bubalus bubalis*). Mol Reprod Dev. Nov 02 [Epub ahead of print].
32. Xu, H. *et al.* (2020) Derivation and propagation of spermatogonial stem cells from human pluripotent cells. Stem Cell Res Ther. 11 (1): 408.
33. Park, H.J. *et al.* (2020) Expression of paired box protein PAX7 in prepubertal boar testicular gonocytes. Acta Histochem. 122 (6): 151595.
34. Yang, H. *et al.* (2021) Isolation, Cultivation and Identification of Spermatogonial Stem Cells from Juvenile Buffalo Testes Pakistan Journal of Zoology. 53 (3) [Epub ahead of print].
35. Park, J.K. *et al.* (2021) Helix-loop-helix protein ID4 expressed in bovine Sertoli cells. Acta Histochem. 123 (8): 151800.
36. Narasimhaiah, D. & Mahadevan, A. (2022) Role of skin punch biopsy in diagnosis of small fiber neuropathy-A review for the neuropathologist. Indian J Pathol Microbiol. 65 (Supplement): S329-S336.

Storage

This product is shipped at ambient temperature. It is recommended to aliquot and store at -20°C on receipt. When thawed, aliquot the sample as needed. Keep aliquots at 2-8°C for short term use (up to 4 weeks) and store the remaining aliquots at -20°C.

	Avoid repeated freezing and thawing as this may denature the antibody. Storage in frost-free freezers is not recommended.
Guarantee	12 months from date of despatch
Acknowledgements	PrecisionAb is a trademark of Bio-Rad Laboratories
Health And Safety Information	Material Safety Datasheet documentation #10040 available at: 10040: https://www.bio-rad-antibodies.com/uploads/MSDS/10040.pdf
Regulatory	For research purposes only

Related Products

Recommended Secondary Antibodies

Goat Anti Mouse IgG (STAR77...)	HRP
Rabbit Anti Mouse IgG (STAR12...)	RPE
Goat Anti Mouse IgG (STAR70...)	FITC
Goat Anti Mouse IgG IgA IgM (STAR87...)	Alk. Phos., HRP
Rabbit Anti Mouse IgG (STAR9...)	FITC
Goat Anti Mouse IgG (STAR76...)	RPE
Goat Anti Mouse IgG (H/L) (STAR117...)	Alk. Phos., DyLight®488, DyLight®550, DyLight®650, DyLight®680, DyLight®800, FITC, HRP
Rabbit Anti Mouse IgG (STAR13...)	HRP
Goat Anti Mouse IgG (Fc) (STAR120...)	FITC, HRP

Recommended Negative Controls

MOUSE IgG1 NEGATIVE CONTROL (MCA928)

North & South America Tel: +1 800 265 7376 Fax: +1 919 878 3751 Email: antibody_sales_us@bio-rad.com

Worldwide Tel: +44 (0)1865 852 700 Fax: +44 (0)1865 852 739 Email: antibody_sales_uk@bio-rad.com

Europe Tel: +49 (0) 89 8090 95 21 Fax: +49 (0) 89 8090 95 50 Email: antibody_sales_de@bio-rad.com

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