

Datasheet: 8450-0505

Description:	RAT ANTI SUBSTANCE P
Specificity:	SUBSTANCE P
Format:	S/N
Product Type:	Monoclonal Antibody
Clone:	NC1/34
Isotype:	IgG2a
Quantity:	0.1 ml

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 - Frozen	▪			1/100 - 1/200
Immunohistology - Paraffin (1)	▪			1/100 - 1/200
Immunofluorescence	▪			

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 appropriate negative/positive controls.

(1) This product does not require antigen retrieval prior to staining of formalin fixed, paraffin embedded sections.

Species Cross Reactivity

Reacts with: Pig, Pigeon, Bichir, Rabbit, Human, Bovine, Guinea Pig, Calanus sp., Cancer sp., Panilurus sp., Homarus sp., Mudpuppy, Lamprey, Crayfish, Zebrafish, Bullfrog, Cockroach, Sheep, Cowbird, Rat, Spadefoot toad, Chicken, Chinchilla, Camel
Based on sequence similarity, is expected to react with: Mammals, Crustacea, Amphibia
N.B. Antibody reactivity and working conditions may vary between species.

Product Form

Tissue Culture Supernatant - liquid

Preservative Stabilisers

0.05% Thiomersal

Immunogen

Substance P conjugated to Bovine Serum Albumin.

External Database Links

UniProt:

[P20366](#) [Related reagents](#)

Entrez Gene:

[6863](#) TAC1 [Related reagents](#)

Synonyms	NKA, NKNA, TAC2
Fusion Partners	Spleen cells from immunised Wistar rat were fused with cells of the NS1/1-Ag 4-1 myeloma cell line.
Specificity	<p>Rat anti substance P antibody, clone NC1/34 recognizes the COOH terminal end of substance P, a short polypeptide neurotransmitter that regulates the excitability of dorsal horn nociceptive neurons. It is known to have a role in several physiologic activities such as pain transmission, the vomiting reflex, salivary secretion and smooth muscle contraction.</p> <p>5% reactivity is observed with eleodoisin. It does not react with Leu or Met-enkephalin, somatostatin or beta-endorphin.</p>
References	<ol style="list-style-type: none"> 1. Kozsurek, M. <i>et al.</i> (2009) Nonselective innervation of lamina I projection neurons by cocaine- and amphetamine-regulated transcript peptide (CART)-immunoreactive fibres in the rat spinal dorsal horn. Eur J Neurosci. 29: 2375-87. 2. Cuello AC <i>et al.</i> (1980) Use of monoclonal antibodies in immunocytochemistry with special reference to the central nervous system. Brain Res Bull. 5 (5): 575-87. 3. Pioro, E.P. <i>et al.</i> (1985) Loss of substance P immunoreactivity in the nucleus of the spinal trigeminal tract after intradural tumour compression of the trigeminal nerve. Neurosci Lett. 58: 7-12. 4. Mai, J.K. <i>et al.</i> (1986) Substance P in the human brain. Neuroscience. 17 (3): 709-39. 5. Cuello, A.C. <i>et al.</i> (1979) Detection of substance P in the central nervous system by a monoclonal antibody. Proc Natl Acad Sci U S A. 76 (7): 3532-6. 6. Czujkowska, H. & Arciszewski, M.B. (2011) Expression of corticotropin releasing factor (CRF) in the enteric nervous system of the jejunum of sheep Veterinarni medicina 56: 551-60. 7. Kato, A. <i>et al.</i> (2012) Endocannabinoid-dependent plasticity at spinal nociceptor synapses. J Physiol. 590 (Pt 19): 4717-33. 8. Arciszewski, M.B. <i>et al.</i> (2009) Expression of vasoactive intestinal polypeptide, substance P and neuropeptide Y in jejunal enteric nerves is altered in rabbits suffering from long term <i>Trichinella spiralis</i> infection: an immunohistochemical study Veterinarni Medicina, 54: 589-597 9. Bulc, M. <i>et al.</i> (2013) Immunohistochemical characterization of the porcine nodose ganglion. Acta Histochem. 115 (5): 440-6. 10. Boorsma, D.M. <i>et al.</i> (1982) Direct immunocytochemistry with a horseradish peroxidase-conjugated monoclonal antibody against substance P. J Histochem Cytochem. 30: 1211-6. 11. Pioro, E.P. <i>et al.</i> (1984) Loss of substance P and Enkephalin immunoreactivity in the human substantia nigra after striato-pallidal infarction Brain Res. 292: 339-47. 12. Mortimer, S.T. <i>et al.</i> (1990) Immunohistochemical identification of calcitonin gene-related peptide and substance P in nerves of the bovine parathyroid gland. Cell Tissue Res. 261: 339-45. 13. Galligan, J.J. <i>et al.</i> (1988) Changes in surviving nerve fibers associated with submucosal arteries following extrinsic denervation of the small intestine. Cell Tissue Res. 253: 647-56. 14. Horn, J.P. and Stofer, W.D. (1989) Preganglionic and sensory origins of calcitonin gene-related peptide-like and substance P-like immunoreactivities in bullfrog sympathetic ganglia. J Neurosci. 9: 2543-61. 15. Verhaert, P. & De Loof, A. (1985) Substance P-like immunoreactivity in the central nervous system of the blattarian insect <i>Periplaneta americana</i> L. revealed by a monoclonal antibody. Histochemistry. 83: 501-7. 16. Polgár, E. <i>et al.</i> (2007) A population of large neurons in laminae III and IV of the rat spinal cord that have long dorsal dendrites and lack the neurokinin 1 receptor. Eur J Neurosci. 26: 1587-98. 17. Nowicki, M. <i>et al.</i> (2007) Peptidergic and nitrergic innervation of the pineal gland in the domestic pig: an immunohistochemical study. Anat Histol Embryol. 36: 311-20. 18. Nair-Roberts, R.G. <i>et al.</i> (2006) Distribution of substance P reveals a novel subdivision in the hippocampus of parasitic South American cowbirds. J Comp Neurol. 496: 610-26. 19. Song, Y. <i>et al.</i> (2013) Bilateral increase in expression and concentration of tachykinin in a

- unilateral rabbit muscle overuse model that leads to myositis. [BMC Musculoskelet Disord. 14: 134.](#)
20. Szczurkowski, A. *et al.* (2013) Morphology and immunohistochemical characteristics of the pterygopalatine ganglion in the chinchilla (*Chinchilla laniger*, Molina). [Pol J Vet Sci. 16 \(2\): 359-68.](#)
21. Pidsudko, Z. (2014) Immunohistochemical characteristics and distribution of sensory dorsal root Ganglia neurons supplying the urinary bladder in the male pig. [J Mol Neurosci. 52 \(1\): 71-81.](#)
22. Zacharko-Siembida, A. *et al.* (2014) Co-expression patterns of cocaine- and amphetamine-regulated transcript (CART) with neuropeptides in dorsal root ganglia of the pig. [Acta Histochem. 116 \(2\): 390-8.](#)
23. Dudek, A. *et al.* (2012) Immunohistochemical characterization of neurons in the vestibular ganglion (Scarpa's ganglion) of the pig. [Pol J Vet Sci. 15: 499-507.](#)
24. Ibrahim, D. *et al.* (2015) Immunohistochemical studies for the neuronal elements in the vomeronasal organ of the one-humped camel. [J Vet Med Sci. 77 \(2\): 241-5.](#)
25. Christensen, J. *et al.* (2015) Protease-activated receptors in the Achilles tendon—a potential explanation for the excessive pain signalling in tendinopathy. [Mol Pain. 11: 13.](#)
26. Bossowska, A. *et al.* (2015) *Botulinum* Toxin Type A Induces Changes in the Chemical Coding of Substance P-Immunoreactive Dorsal Root Ganglia Sensory Neurons Supplying the Porcine Urinary Bladder. [Toxins \(Basel\). 7 \(11\): 4797-816.](#)
27. Sienkiewicz, W. *et al.* (2015) Innervation of the chinchilla testis, epididymis, and vas deferens. [Bulletin of the Veterinary Institute in Pulawy. 59 \(4\): 547-56.](#)
28. Czujkowska, A. & Arciszewski, M.B. (2016) Galanin is Co-Expressed with Substance P, Calbindin and Corticotropin-Releasing Factor (CRF) in The Enteric Nervous System of the Wild Boar (*Sus scrofa*) Small Intestine. [Anat Histol Embryol. 45 \(2\): 115-23.](#)
29. Klimczuk, M. *et al.* (2016) Immunohistochemical characterisation of neurons in the mandibular ganglion and nerve fibres supplying the porcine mandibular gland. [Veterinarni Medicina. 61: 361-73.](#)
30. Gańko, M. & Całka, J. (2014) Localization and chemical coding of the dorsal motor vagal nucleus (DMX) neurons projecting to the porcine stomach prepyloric area in the physiological state and after stomach partial resection. [J Mol Neurosci. 52 \(1\): 90-100.](#)
31. Pidsudko, Z. *et al.* (2008) Distribution and chemical coding of intramural neurons in the porcine ileum during proliferative enteropathy. [J Comp Pathol. 138 \(1\): 23-31.](#)
32. 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.](#)
33. Gańko M & Całka J (2014) Prolonged acetylsalicylic-acid-supplementation-induced gastritis affects the chemical coding of the stomach innervating vagal efferent neurons in the porcine dorsal motor vagal nucleus (DMX). [J Mol Neurosci. 54 \(2\): 188-98.](#)
34. Dudek, A. *et al.* (2016) Chemical Coding of Sensory Neurons Supplying the Hip Joint Capsule in the Sheep. [Anat Histol Embryol. Jun 28. \[Epub ahead of print\]](#)
35. Zacharko-siembidaAn, n.a. *et al.* (2017) An Immunohistochemical Study of Cocaine- and Amphetamine-Regulated Transcript (Cart) Expression in the Pterygopalatine Ganglion of the Pig [Acta Veterinaria. 67 \(3\) \[Epub ahead of print\].](#)

Storage	Store at +4°C or at -20°C if preferred. Storage in frost-free freezers is not recommended. This product should be stored undiluted. Avoid repeated freezing and thawing as this may denature the antibody. Should this product contain a precipitate we recommend microcentrifugation before use.
Shelf Life	18 months from date of despatch.
Health And Safety Information	Material Safety Datasheet documentation #10522 available at: 10522: https://www.bio-rad-antibodies.com/uploads/MSDS/10522.pdf

Related Products

Recommended Secondary Antibodies

Rabbit Anti Rat IgG (STAR16...)	DyLight®800
Goat Anti Rat IgG (STAR73...)	RPE
Rabbit Anti Rat IgG (STAR21...)	HRP
Rabbit Anti Rat IgG (STAR17...)	FITC
Goat Anti Rat IgG (MOUSE ADSORBED) (STAR71...)	DyLight®549 , DyLight®649 , DyLight®800
Goat Anti Rat IgG (STAR131...)	Alk. Phos. , Biotin
Goat Anti Rat IgG (STAR69...)	FITC
Goat Anti Rat IgG (STAR72...)	HRP

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