Datasheet: AHP206

BATCH NUMBER 147166

Description:	SHEEP ANTI HUMAN CARBONIC ANHYDRASE II
Specificity:	CARBONIC ANHYDRASE II
Other names:	CA2
Format:	Purified
Product Type:	Polyclonal Antibody
Isotype:	Polyclonal IgG
Quantity:	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
Flow Cytometry			▪	
Immunohistology - Frozen			▪	
Immunohistology - Paraffin			▪	
ELISA			▪	
Immunoprecipitation			▪	
Western Blotting	▪			1/1000
Immunodiffusion	▪			
Immunofluorescence	▪			

Where this antibody 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 antibody for use in their own system using appropriate negative/positive controls

Target Species

Human

Product Form

Purified IgG - liquid

Antiserum Preparation

Antisera to human carbonic anhydrase II were raised by repeated immunisation of sheep with highly purified antigen. Purified IgG was prepared from whole serum by ion exchange chromatography.

Buffer Solution

Glycine buffered saline

Preservative Stabilisers	0.09% Sodium Azide 0.1% EACA 1mM EDTA 0.01% Benzamidine
Immunogen	Purified human carbonic anhydrase II (CAII) prepared from erythrocytes.
External Database Links	**UniProt:** P00918 Related reagents **Entrez Gene:** 760 CA2 Related reagents
RRID	AB_321215
Specificity	**Sheep anti Human carbonic anhydrase II antibody** recognizes human carbonic anhydrase II, also known as Carbonate dehydratase II or Carbonic anhydrase C. Carbonic anhydrase II is a 259 amino acid ~30 kDa enzyme essential for bone resorption and osteoclast differrentiation. Mutations in the CA2 gene has been identified as the cause of osteopetrosis, autosomal recessive 3 (OPTB3), a rare disease characterized by particularly dense bone, cerebral calcification and renal tubular acidosis (Shah *et al* 2004). Product identity is confirmed by double diffusion vs human CAII. No reactivity is seen in immunodiffusion against CAI.
Western Blotting	Sheep anti human carbonic anyhdrase II recognises a band of ~18kDa in rat adrenomedullary chromaffin cell lysates, see Salman *et al.* for details.
References	1. Toye, A.M. *et al.* (2002) Band 3 Walton, a C-terminal deletion associated with distal renal tubular acidosis, is expressed in the red cell membrane but retained internally in kidney cells. Blood. 99 (1): 342-7. 2. Garcia, A.D. *et al.* (2010) Sonic hedgehog regulates discrete populations of astrocytes in the adult mouse forebrain. J Neurosci. 30: 13597-608. 3. Doyle, K.P. *et al.*. (2010) TGFβ signaling in the brain increases with aging and signals to astrocytes and innate immune cells in the weeks after stroke. J Neuroinflammation. 7: 62. 4. Alvarez, B.V. *et al.* (2005) Metabolon disruption: a mechanism that regulates bicarbonate transport. EMBO J. 24: 2499-511. 5. Tzartos, J.S. *et al.* (2008) Interleukin-17 production in central nervous system-infiltrating T cells and glial cells is associated with active disease in multiple sclerosis. Am J Pathol. 172: 146-55. 6. Sudarov, A. *et al.* (2011) Ascl1 genetics reveals insights into cerebellum local circuit assembly. J Neurosci. 31: 11055-69. 7. Salman, S. *et al.* (2013) Chronic exposure of neonatal rat adrenomedullary chromaffin cells to opioids in vitro blunts both hypoxia and hypercapnia chemosensitivity. J Physiol.

591 (Pt 2): 515-29.
8. Salman, S. *et al.* (2014) Chronic opioids regulate K_{ATP} channel subunit Kir6.2 and carbonic anhydrase I and II expression in rat adrenal chromaffin cells via HIF-2α and protein kinase A. Am J Physiol Cell Physiol. 307: C266-77.
9. Gailly, P. *et al.* (2008) A novel renal carbonic anhydrase type III plays a role in proximal tubule dysfunction. Kidney Int. 74 (1): 52-61.
10. Sterling, D. *et al.* (2002) The functional and physical relationship between the DRA bicarbonate transporter and carbonic anhydrase II. Am J Physiol Cell Physiol. 283 (5): C1522-9.
11. Alvarez, L. *et al.* (2001) Carbonic anhydrase II associated with plasma membrane in a human pancreatic duct cell line (CAPAN-1). J Histochem Cytochem. 49 (8): 1045-53.
12. Alvarez, B.V. *et al.* (2003) Direct extracellular interaction between carbonic anhydrase IV and the human NBC1 sodium/bicarbonate co-transporter. Biochemistry. 42 (42): 12321-9.
13. Sterling, D. *et al.* (2002) The extracellular component of a transport metabolon. Extracellular loop 4 of the human AE1 Cl-/HCO3- exchanger binds carbonic anhydrase IV. J Biol Chem. 277 (28): 25239-46.

Storage	Store at +4°C or at -20°C if preferred. This product should be stored undiluted. Storage in frost free freezers is not recommended. Avoid repeated freezing and thawing as this may denature the antibody. Should this product contain a precipitate we recommend microcentrifugation before use.
Guarantee	12 months from date of despatch
Health And Safety Information	Material Safety Datasheet documentation #10087 available at: https://www.bio-rad-antibodies.com/SDS/AHP206 10087
Regulatory	For research purposes only

Related Products

Recommended Secondary Antibodies

Rabbit Anti Sheep IgG (H/L) (5184-2304...) Biotin

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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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