

Product Datasheet

Carbonic Anhydrase IX/CA9 Antibody NB100-417SS

Unit Size: 0.025 ml

Store at -20C. Avoid freeze-thaw cycles.

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Updated 6/15/2014 v.20.1

NB100-417SS

Carbonic Anhydrase IX/CA9 Antibody

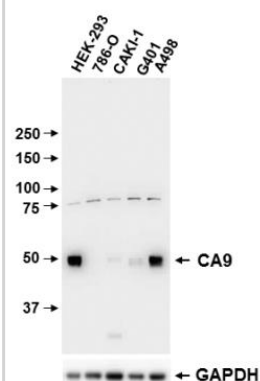
Product Information	
Unit Size	0.025 ml
Concentration	1.0 mg/ml
Storage	Store at -20C. Avoid freeze-thaw cycles.
Clonality	Polyclonal
Preservative	0.1% Sodium Azide
Purity	Immunogen affinity purified
Buffer	Tris-citrate/phosphate, pH 7-8
Target Molecular Weight	55 kDa

Product Description	
Host	Rabbit
Gene ID	768
Gene Symbol	CA9
Species	Human, Mouse, Rat, Canine
Species Reactivity	Human, dog, rat and mouse (PMID 22842475).
Marker	Hypoxia Marker
Immunogen	A synthetic peptide made to a C-terminal sequence of human Carbonic Anhydrase IX (within residues 400-500) [UniProt Q16790]

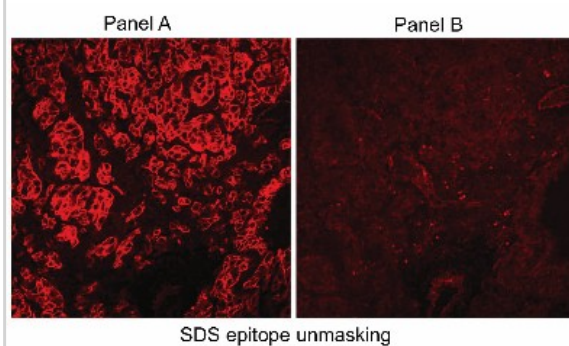
Product Application Details	
Applications	Western Blot, Simple Western, Gel Super Shift Assays, Immunocytochemistry/Immunofluorescence, Immunohistochemistry, Immunohistochemistry-Frozen, Immunohistochemistry-Paraffin
Recommended Dilutions	Immunocytochemistry/Immunofluorescence 1:1000, Immunohistochemistry 1:1000, Immunohistochemistry-Frozen 1:1000, Immunohistochemistry-Paraffin 1:1000, Western Blot 1:2000, Gel Super Shift Assays, Simple Western 1:50
Application Notes	This Carbonic Anhydrase IX antibody is useful for Western blot, Immunofluorescence/Immunocytochemistry, and Immunohistochemistry. Gel Super Shift Assays was reported in scientific literature. In Western blot a band is observed ~53 kDa. In Simple Western only 10-15 uL of the recommended dilution is used per data point.

Images

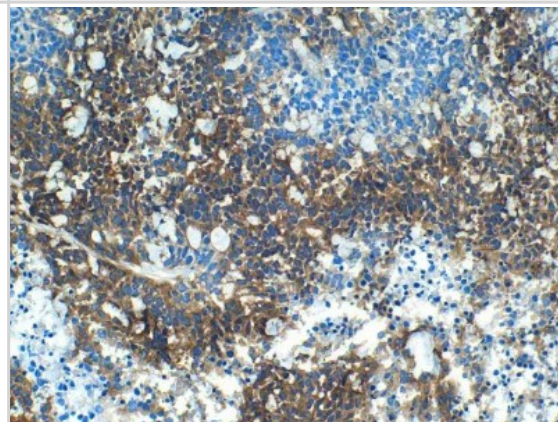
Western Blot: Carbonic Anhydrase IX Antibody [NB100-417] - Carbonic Anhydrase IX on various human cell lysates. Image from verified customer review.



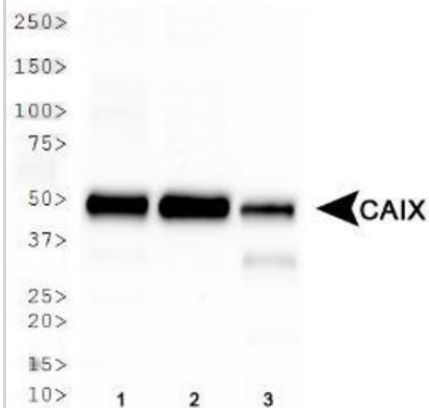
Immunocytochemistry/Immunofluorescence: Carbonic Anhydrase IX Antibody [NB100-417] - Immunofluorescence of human RCC tumor cryosections using NB100-417 (Panel A). Panel B shows staining with normal rabbit serum.



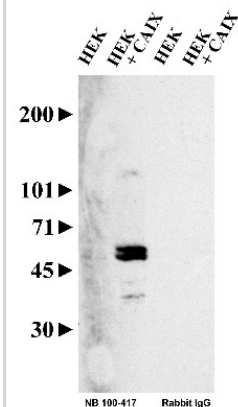
Immunohistochemistry-Frozen: Carbonic Anhydrase IX Antibody [NB100-417] - Analysis of human colon carcinoma, xenografted in mice. Image courtesy of an anonymous product review.



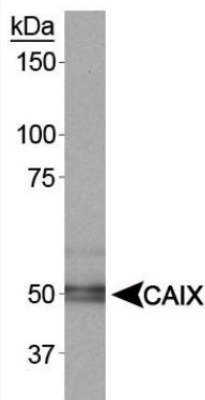
Western Blot: Carbonic Anhydrase IX Antibody [NB100-417] - Analysis of Carbonic Anhydrase IX expression in 1) HeLa, 2) MDA-MB-231 and 3) A549 whole cell lysates.



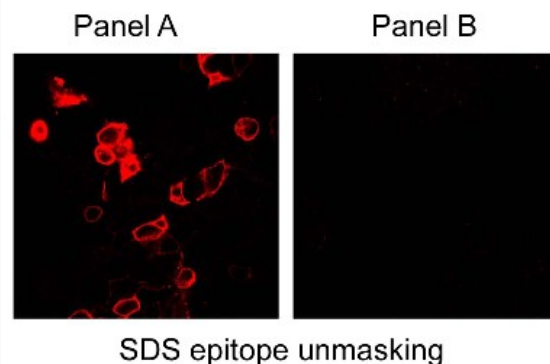
Western Blot: Carbonic Anhydrase IX Antibody [NB100-417] - Detection of carbonic anhydrase IX in transfected HEK cell lysate using NB 100-417. Rabbit IgG was used as a negative control.



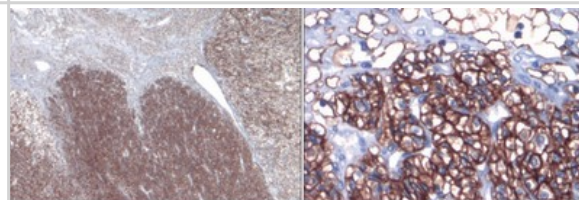
Western Blot: Carbonic Anhydrase IX Antibody [NB100-417] - Analysis of CAIX on rat renal cortex using NB100-417.



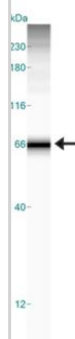
Immunocytochemistry/Immunofluorescence: Carbonic Anhydrase IX Antibody [NB100-417] - Immunofluorescence of HEK 293 cells using NB100-417. Panel A shows CAIX-transfected cells (epitope-unmasked with SDS) and panel B shows mock transfected cells.



Immunohistochemistry: Carbonic Anhydrase IX Antibody [NB100-417] - Renal carcinoma tissue stained with polyclonal carbonic anhydrase IX.



Simple Western: Carbonic Anhydrase IX/CA9 Antibody [NB100-417] - Simple Western lane view shows a specific band for CAIX in 0.1 mg/ml of HeLa lysate. This experiment was performed under reducing conditions using the 12-230 kDa separation system.



Publications

Kang HJ, Kim IH, Sung CO et al. Expression of carbonic anhydrase 9 is a novel prognostic marker in resectable hepatocellular carcinoma *Virchows Arch.* 2015 Jan 11 [PMID: 25577552] (IHC-P, Human)

Details:

Carbonic Anhydrase IX/CA9 antibody used at 1:1000 dilution for IHC-P staining on formalin-fixed, paraffin-embedded tissue sections/TMAs created from surgically resected hepatocellular carcinoma/HCC and adjacent non-neoplastic liver tissue - 32 minutes of heat-induced epitope retrieval with Cell Conditioning 1 /CC1 buffer, 16 minutes of primary antibody incubation on Ventana's autoimmunostainer/Bench Mark XT automatic immunostaining device, staining development with Ventana's OptiView DAB IHC Detection Kit. Fig 2a-f documents the staining images showing weak, moderate and strong membranous expression levels of carbonic anhydrase 9 protein and the overall data in this study establishes CA9 protein as a poor prognostic factor in resectable HCC patients.

Lee H, Yoon C, Park DJ et al. Inhibition of Vascular Endothelial Growth Factor A and Hypoxia-Inducible Factor 1alpha Maximizes the Effects of Radiation in Sarcoma Mouse Models Through Destruction of Tumor Vasculature. *Int. J. Radiat. Oncol. Biol. Phys.* 2014 Dec 24 [PMID: 25544668]

Janmohamed SR, Brinkhuizen T, den Hollander JC et al. Support for the hypoxia theory in the pathogenesis of infantile haemangioma. *Clin. Exp. Dermatol.* 2014 Dec 16 [PMID: 25511669] (IHC-P, Human)

Gellert LL, Mehra R, Chen YB et al. The diagnostic accuracy of percutaneous renal needle core biopsy and its potential impact on the clinical management of renal cortical neoplasms. *Arch. Pathol. Lab. Med.* 2014 Dec 01 [PMID: 25427045] (IHC-P, Human)

Details:

Carbonic Anhydrase IX/CA9 antibody used for IHC-P on sections of human renal biopsies having sarcomatoid area with focal necrosis and clear cell renal cell carcinoma (Figure 3.).

Lin XY, Zhang H, Tang N et al. Expression and diagnostic implications of carbonic anhydrase IX in several tumours with predominantly clear cell morphology. *Histopathology.* 2014 Nov 27 [PMID: 25431204] (IHC-P, Human)

Details:

Carbonic Anhydrase IX/CA9 antibody used for IHC-P on sections of clear cell renal cell carcinoma (ccRCC; primary and metastatic) and several other type of tumors with predominantly clear cell morphology - tissues previously fixed in 10% neutral buffered formalin and embedded in paraffin, 4um sections, routine IHC-P processing with streptavidin-peroxidase detection system. ccRCC, and breast / pulmonary/hepatic clear cell carcinoma, urothelial carcinoma with clear cell change, clear cell meningioma/ependymoma, haemangioblastoma, and clear cell hidradenoma showed expression of CAIX. See full text for staining images and the expression levels.

Santos Cd, Tijeras-Raballand A, Serova M et al. Effects of preset sequential administrations of sunitinib and everolimus on tumour differentiation in Caki-1 renal cell carcinoma. *Br. J. Cancer.* 2014 Nov 25 [PMID: 25422908] (IHC-P, Human)

Hwa JS, Kwon OJ, Park JJ et al. The prognostic value of immunohistochemical markers for oral tongue squamous cell carcinoma. *Eur Arch Otorhinolaryngol.* 2014 Aug 29 [PMID: 25169079]

Chen LQ, Howison CM, Spier C et al. Assessment of carbonic anhydrase IX expression and extracellular pH in B-cell lymphoma cell line models. *Leuk. Lymphoma.* 2014 Aug 17 [PMID: 25130478]

Motzer RJ, Hutson TE, Hudes GR et al. Investigation of novel circulating proteins, germ line single-nucleotide polymorphisms, and molecular tumor markers as potential efficacy biomarkers of first-line sunitinib therapy for advanced renal cell carcinoma. *Cancer Chemother. Pharmacol.* 2014 Aug 07 [PMID: 25100134] (IHC-P, Human)

Details:

Rabbit polyclonal Carbonic Anhydrase IX/CA-IX antibody used for IHC on formalin-fixed paraffin-embedded (FFPE) blocks or unstained slides from tumor specimens.



Sadlecki P, Bodnar M, Grabiec M. The Role of Hypoxia-Inducible Factor-1a, Glucose Transporter-1,(GLUT-1) and Carbon Anhydrase IX in Endometrial Cancer Patients. BioMed Research International 3/12/2014 [PMID: 24745019] (IHC-P, Human)

Kwon OJ, Park JJ, Ko GH et al. HIF-1a and CA-IX as predictors of locoregional control for determining the optimal treatment modality for early-stage laryngeal carcinoma. Head Neck 2/12/2014 [PMID: 24677746] (IHC-P, Human)

Chen X, Iliopoulos D, Zhang Q et al. XBP1 promotes triple-negative breast cancer by controlling the HIF1a pathway. Nature 4/3/2014 [PMID: 24670641] (IHC-P, Human)

More publications at <http://www.novusbio.com/NB100-417>



Procedures

Immunohistochemistry protocol for Carbonic Anhydrase IX Antibody (NB100-417)

Immunohistochemistry Procedure

1. Using paraffin-embedded tissue sections, dewax and rehydrate the tissue, as per standard protocol.
2. Block the slides with peroxidase for 5 minutes.
3. Incubate slides with primary antibody [NB 100-417], 1:1,000 diluted in 10% normal serum, for 30 minutes at room temperature (RT).
4. Wash slides for 5 minutes.
5. Incubate slides with secondary antibody [envision, DAKO] for 30 minutes at RT.
6. Wash slides for 5 minutes.
7. Incubate slides with DAB chromagen for 6 minutes.
8. Counterstain slides with Hematoxylin. NOTE: Antigen retrieval was not used.

Western Blot protocol (NB100-417)

Western Blot Protocol

1. Perform SDS-PAGE on samples to be analyzed, loading 25 ug of total protein per lane.
2. Transfer proteins to membrane according to the instructions provided by the manufacturer of the membrane and transfer apparatus.
3. Stain according to standard Ponceau S procedure (or similar product) to assess transfer success, and mark molecular weight standards where appropriate.
4. Rinse the blot.
5. Block the membrane using standard blocking buffer for at least 1 hour.
6. Wash the membrane in wash buffer three times for 10 minutes each.
7. Dilute primary antibody in blocking buffer and incubate 1 hour at room temperature.
8. Wash the membrane in wash buffer three times for 10 minutes each.
9. Apply the diluted HRP conjugated secondary antibody in blocking buffer (as per manufacturers instructions) and incubate 1 hour at room temperature.
10. Wash the blot in wash buffer three times for 10 minutes each (this step can be repeated as required to reduce background).
11. Apply the detection reagent of choice in accordance with the manufacturers instructions.

**Note: Tween-20 can be added to the blocking or antibody dilution buffer at a final concentration of 0.05-0.2%.





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Limitations

This product is for research use only and is not approved for use in humans or in clinical diagnosis. Primary Antibodies are guaranteed for 1 year from date of receipt.

For more information on our guarantee, please visit www.novusbio.com/guarantee.

