

Anti-Carbonic anhydrase 2/CA2 antibody [EPR5195] ab124687

KO VALIDATED Recombinant RabMAb

★★★★★ [1 Abreviews](#) [19 References](#) [9 Images](#)

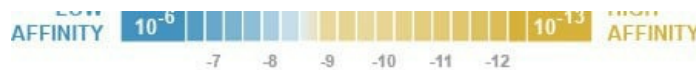
Overview

Product name	Anti-Carbonic anhydrase 2/CA2 antibody [EPR5195]
Description	Rabbit monoclonal [EPR5195] to Carbonic anhydrase 2/CA2
Host species	Rabbit
Specificity	The mouse and rat recommendation is based on the WB results. We do not guarantee IHC-P for mouse and rat.
Tested applications	Suitable for: WB, IHC-P
Species reactivity	Reacts with: Mouse, Rat, Human
Immunogen	Synthetic peptide corresponding to Human Carbonic anhydrase 2/CA2 aa 200-300 (C terminal).
Positive control	WB: HAP1, A431, HEK293, HEK293T, and Caco-2 cell lysates, and Mouse brain, Mouse heart, Rat brain, Rat spleen, Rat kidney, and Human heart tissue lysates. IHC-P: Human colon, Rat kidney, Mouse kidney, and Human clear cell carcinoma tissues.
General notes	<p>This product is a recombinant monoclonal antibody, which offers several advantages including:</p> <ul style="list-style-type: none"> - High batch-to-batch consistency and reproducibility - Improved sensitivity and specificity - Long-term security of supply - Animal-free production <p>For more information see here.</p> <p>Our RabMAb[®] technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb[®] patents.</p>

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C long term. Avoid freeze / thaw cycle.
Dissociation constant (K_D)	K _D = 5.42 x 10 ⁻¹⁰ M





[Learn more about K_D](#)

Storage buffer	pH: 7.20 Preservative: 0.01% Sodium azide Constituents: 40% Glycerol (glycerin, glycerine), 59% PBS, 0.05% BSA
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR5195
Isotype	IgG

Applications

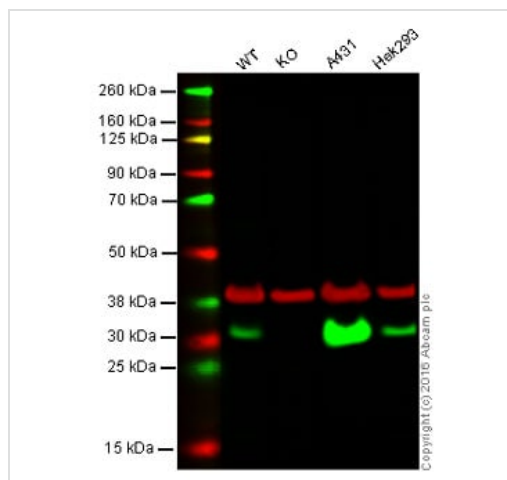
The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab124687 in the following tested applications. The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB	★★★★★ (1)	1/1000 - 1/10000. Detects a band of approximately 29 kDa (predicted molecular weight: 29 kDa).
IHC-P		1/1600. Perform heat mediated antigen retrieval before commencing with IHC staining protocol. The mouse and rat recommendation is based on the WB results. We do not guarantee IHC-P for mouse and rat. For unpurified use at 1/250 - 1/500.

Target

Function	Essential for bone resorption and osteoclast differentiation (By similarity). Reversible hydration of carbon dioxide. Can hydrates cyanamide to urea. Involved in the regulation of fluid secretion into the anterior chamber of the eye.
Involvement in disease	Defects in CA2 are the cause of osteopetrosis autosomal recessive type 3 (OPTB3) [MIM:259730]; also known as osteopetrosis with renal tubular acidosis, carbonic anhydrase II deficiency syndrome, Guibaud-Vainsel syndrome or marble brain disease. Osteopetrosis is a rare genetic disease characterized by abnormally dense bone, due to defective resorption of immature bone. The disorder occurs in two forms: a severe autosomal recessive form occurring in utero, infancy, or childhood, and a benign autosomal dominant form occurring in adolescence or adulthood. Autosomal recessive osteopetrosis is usually associated with normal or elevated amount of non-functional osteoclasts. OPTB3 is associated with renal tubular acidosis, cerebral calcification (marble brain disease) and in some cases with mental retardation.
Sequence similarities	Belongs to the alpha-carbonic anhydrase family.
Cellular localization	Cytoplasm.

Images



Western blot - Anti-Carbonic anhydrase 2/CA2 antibody [EPR5195] (ab124687)

Lane 1: Wild-type HAP1 cell lysate (40 µg)

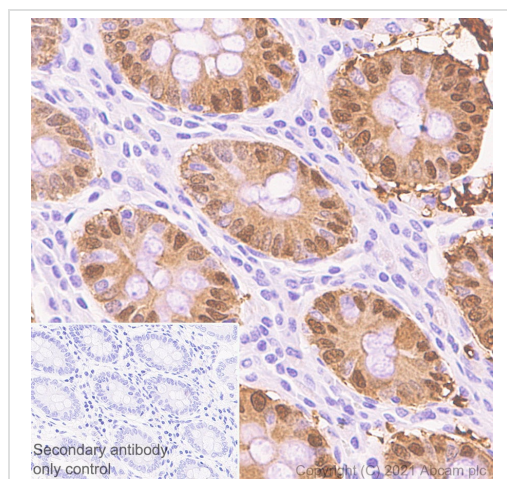
Lane 2: Carbonic anhydrase 2/CA2 knockout HAP1 cell lysate (40 µg)

Lane 3: A431 cell lysate (40 µg)

Lane 4: HEK293 cell lysate (40 µg)

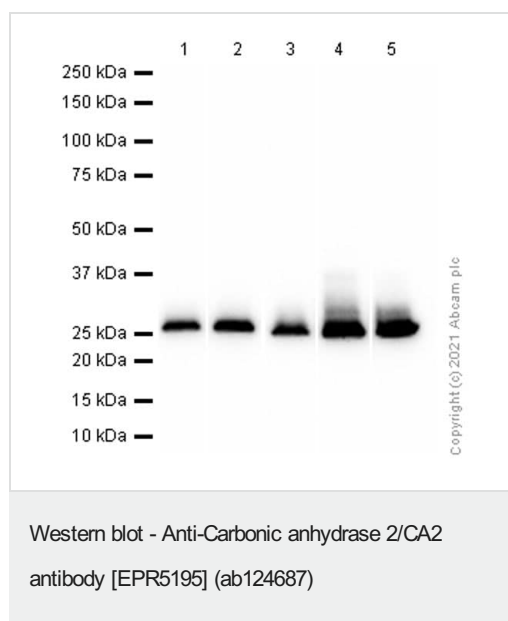
Lanes 1 - 4: Merged signal (red and green). Green - ab124687 observed at 32 kDa. Red - loading control, **ab8245**, observed at 37 kDa.

ab124687 was shown to specifically react with Carbonic anhydrase 2/CA2 when Carbonic anhydrase 2/CA2 knockout samples were used. Wild-type and Carbonic anhydrase 2/CA2 knockout samples were subjected to SDS-PAGE. Ab124687 and **ab8245** (loading control to GAPDH) were diluted at 1/1000 and 1/10,000 dilution respectively and incubated overnight at 4°C. Blots were developed with IRDye® 800CW Goat anti-Rabbit IgG (H + L) and IRDye® 680 Goat anti-Mouse IgG (H + L) secondary antibodies at 1/10,000 dilution for 1 hour at room temperature before imaging.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Carbonic anhydrase 2/CA2 antibody [EPR5195] (ab124687)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human colon tissue sections labeling Carbonic anhydrase 2/CA2 with purified ab124687 at 1/1600 (0.063 µg/ml). Heat mediated antigen retrieval was performed using Bond™ Epitope Retrieval Solution 2 (pH 9.0). Tissue was counterstained with Hematoxylin. Rabbit specific IHC polymer detection kit HRP/DAB (**ab209101**) secondary antibody was used at 1/0 dilution. PBS instead of the primary antibody was used as the negative control. The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



All lanes : Anti-Carbonic anhydrase 2/CA2 antibody [EPR5195] (ab124687) at 1/5000 dilution

Lane 1 : Mouse brain lysate

Lane 2 : Mouse heart lysate

Lane 3 : Rat brain lysate

Lane 4 : Rat spleen lysate

Lane 5 : Rat kidney lysate

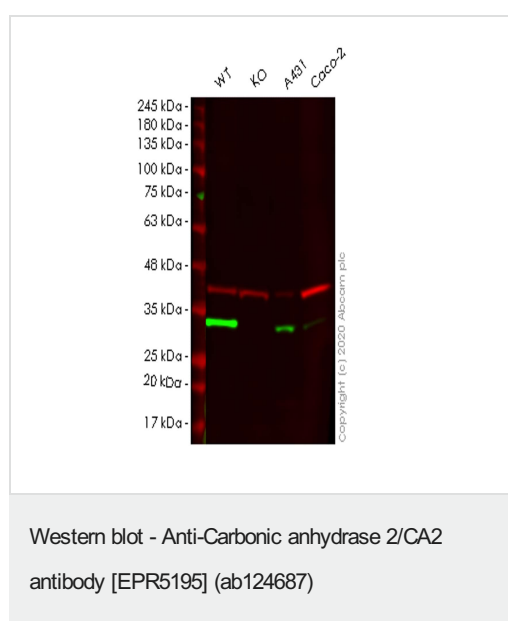
Lysates/proteins at 20 µg per lane.

Secondary

All lanes : Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

Predicted band size: 29 kDa

Observed band size: 29 kDa



All lanes : Anti-Carbonic anhydrase 2/CA2 antibody [EPR5195] (ab124687) at 1/1000 dilution

Lane 1 : Wild-type HEK293T cell lysate

Lane 2 : CA2 knockout HEK293T cell lysate

Lane 3 : A431 cell lysate

Lane 4 : Caco-2 cell lysate

Lysates/proteins at 20 µg per lane.

Secondary

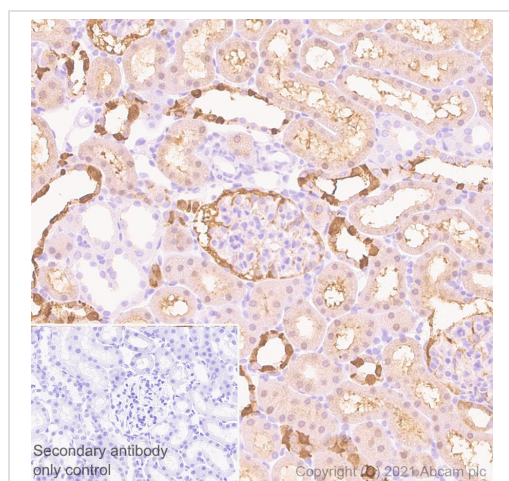
All lanes : Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed ([ab216773](#)) at 1/10000 dilution

Predicted band size: 29 kDa

Observed band size: 29 kDa

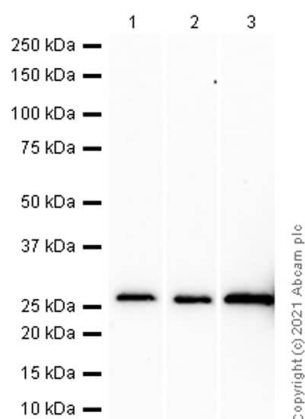
Lanes 1-4: Merged signal (red and green). Green - ab124687 observed at 29 kDa. Red - loading control **ab8245** observed at 36 kDa.

ab124687 Anti-Carbonic anhydrase 2/CA2 antibody [EPR5195] was shown to specifically react with Carbonic anhydrase 2/CA2 in wild-type HEK293T cells. Loss of signal was observed when knockout cell line **ab265072** (knockout cell lysate **ab257084**) was used. Wild-type and Carbonic anhydrase 2/CA2 knockout samples were subjected to SDS-PAGE. ab124687 and Anti-GAPDH antibody [6C5] - Loading Control (**ab8245**) were incubated at room temperature for 2.5 hours at 1 in 1000 dilution and 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (**ab216773**) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (**ab216776**) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of rat kidney tissue sections labeling Carbonic anhydrase 2/CA2 with purified ab124687 at 1/1600 (0.063 µg/ml). Heat mediated antigen retrieval was performed using Bond™ Epitope Retrieval Solution 2 (pH 9.0). Tissue was counterstained with Hematoxylin. Rabbit specific IHC polymer detection kit HRP/DAB (**ab209101**) secondary antibody was used at 1/0 dilution. PBS instead of the primary antibody was used as the negative control. The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Carbonic anhydrase 2/CA2 antibody [EPR5195] (ab124687)



Western blot - Anti-Carbonic anhydrase 2/CA2 antibody [EPR5195] (ab124687)

All lanes : Anti-Carbonic anhydrase 2/CA2 antibody [EPR5195] (ab124687) at 1/5000 dilution (Purified)

Lane 1 : HEK-293 (Human embryonic kidney epithelial cell) whole cell lysate

Lane 2 : Caco-2 (Human colorectal adenocarcinoma epithelial cell) whole cell lysate

Lane 3 : Human heart lysate

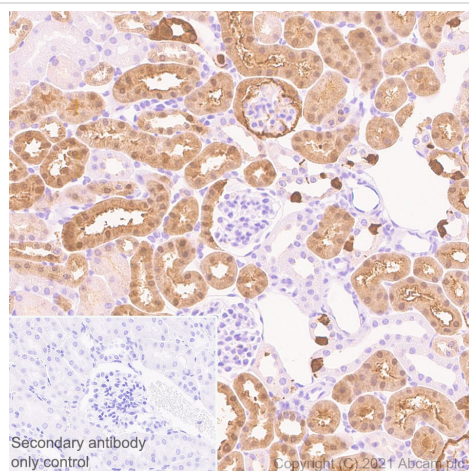
Lysates/proteins at 20 µg per lane.

Secondary

All lanes : Goat Anti-Rabbit IgG (HRP) with minimal cross-reactivity with human IgG at 1/2000 dilution

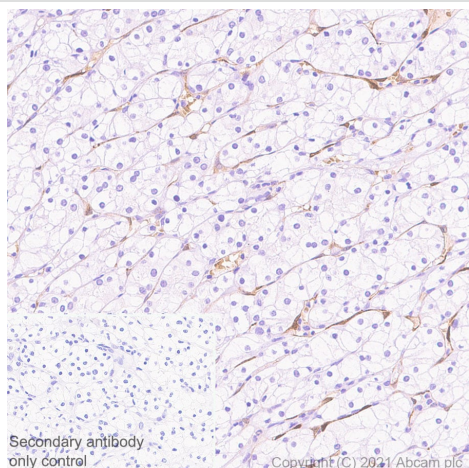
Predicted band size: 29 kDa

Observed band size: 29 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Carbonic anhydrase 2/CA2 antibody [EPR5195] (ab124687)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of mouse kidney tissue sections labeling Carbonic anhydrase 2/CA2 with Purified ab124687 at 1/1600 (0.063 µg/ml). Heat mediated antigen retrieval was performed using Bond™ Epitope Retrieval Solution 2 (pH 9.0). Tissue was counterstained with Hematoxylin. Rabbit specific IHC polymer detection kit HRP/DAB ([ab209101](#)) secondary antibody was used at 1/0 dilution. PBS instead of the primary antibody was used as the negative control. The immunostaining was performed on a Leica Biosystems BOND® RX instrument.



Secondary antibody
only control

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Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Carbonic anhydrase 2/CA2 antibody [EPR5195] (ab124687)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human clear cell carcinoma tissue sections labeling Carbonic anhydrase 2/CA2 with purified ab124687 at 1/1600 (0.063 µg/ml). Heat mediated antigen retrieval was performed Bond™ Epitope Retrieval Solution 2 (pH 9.0). Tissue was counterstained with Hematoxylin. Rabbit specific IHC polymer detection kit HRP/DAB (**ab209101**) secondary antibody was used at 1/0 dilution. PBS instead of the primary antibody was used as the negative control. The immunostaining was performed on a Leica Biosystems BOND® RX instrument.

Why choose a recombinant antibody?



Research with confidence
Consistent and reproducible results



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Recombinant technology



Success from the first experiment
Confirmed specificity



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Anti-Carbonic anhydrase 2/CA2 antibody [EPR5195] (ab124687)

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