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Anti-Carbonic Anhydrase I/CA1 Picoband™ Antibody (monoclonal, 4D5)

Catalog # ABO14994

Product Information

Application	WB, IHC, FC
Primary Accession	P00915
Host	Mouse
Isotype	Mouse IgG2a
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Format	Lyophilized
Description	Anti-Carbonic Anhydrase I/CA1 Picoband™ Antibody (monoclonal, 4D5) . Tested in Flow Cytometry, IHC, WB applications. This antibody reacts with Human, Mouse, Rat.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	759
Other Names	Carbonic anhydrase 1, 4.2.1.1, Carbonate dehydratase I, Carbonic anhydrase B, CAB, Carbonic anhydrase I, CA-I, Cyanamide hydratase CA1, 4.2.1.69, CA1
Calculated MW	28870
Application Details	Western blot, 0.25-0.5 □g/ml, Human, Mouse, Rat Immunohistochemistry (Paraffin-embedded Section), 2-5 □g/ml, Human Flow Cytometry, 1-3 □g/1x10^6 cells, Human
Source	Eukaryota
Contents	Each vial contains 4mg Trehalose, 0.9mg NaCl and 0.2mg Na2HPO4.
Clone Names	Clone: 4D5
Immunogen	E.coli-derived human CA1 recombinant protein (Position: D9-F261). Human CA1 shares 78.5% and 81% amino acid (aa) sequence identity with mouse and rat CA1, respectively.
Purification	Immunogen affinity purified.
Storage	Store at -20˚C for one year from date of receipt. After reconstitution, at 4˚C for one month. It can also be aliquotted and stored frozen at -20˚C for six months. Avoid repeated freeze-thaw cycles.

Protein Information

Name	CA1
Function	Catalyzes the reversible hydration of carbon dioxide (PubMed: 10550681, PubMed:16506782, PubMed:16686544, PubMed:16807956, PubMed:17127057, PubMed:17314045, PubMed:17407288, PubMed:18618712, PubMed:19186056, PubMed:19206230). Can hydrate cyanamide to urea (PubMed:10550681).
Cellular Location	Cytoplasm {ECO:0000250|UniProtKB:B0BNN3}.

Background

Carbonic anhydrase 1 is an enzyme that in humans is encoded by the CA1 gene. It is a member of the Carbonic anhydrase. The CA1 gene is mapped to 8q22. CAI has got about 260 amino acids. This protein is highly expressed in erythrocytes. As catalysts of the reversible hydration of carbon dioxide, CAI participates in a variety of biologic processes like respiration, calcification, acid-base balance etc.

Images

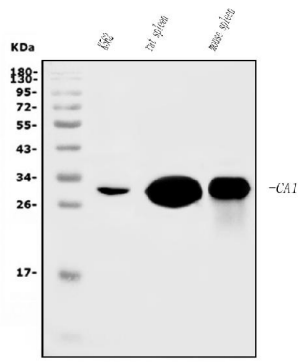

Figure 1. Western blot analysis of Carbonic Anhydrase I/CA1 using anti-Carbonic Anhydrase I/CA1 antibody (M00170-1).
Electrophoresis was performed on a 5-20% SDS-PAGE gel at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. The sample well of each lane was loaded with 50ug of sample under reducing conditions.
Lane 1: human K562 whole cell lysates,
Lane 2: rat spleen tissue lysates,
Lane 3: mouse spleen tissue lysates.
After Electrophoresis, proteins were transferred to a Nitrocellulose membrane at 150mA for 50-90 minutes. Blocked the membrane with 5% Non-fat Milk/ TBS for 1.5 hour at RT. The membrane was incubated with mouse anti-Carbonic Anhydrase I/CA1 antigen affinity purified monoclonal antibody (Catalog # M00170-1) at 0.5 µg/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-mouse IgG-HRP secondary antibody at a dilution of 1:10000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminescent detection (ECL) kit (Catalog # EK1001) with Tanon 5200 system. A specific band was detected for Carbonic Anhydrase I/CA1 at approximately 29KD. The expected band size for Carbonic Anhydrase I/CA1 is at 29KD.

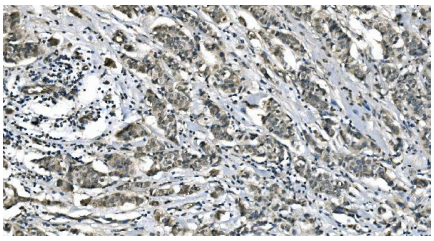

Figure 2. IHC analysis of Carbonic Anhydrase I/CA1 using anti-Carbonic Anhydrase I/CA1 antibody (M00170-1). Carbonic Anhydrase I/CA1 was detected in paraffin-embedded section of human breast cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 µg/ml mouse

anti-Carbonic Anhydrase I/CA1 Antibody (M00170-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

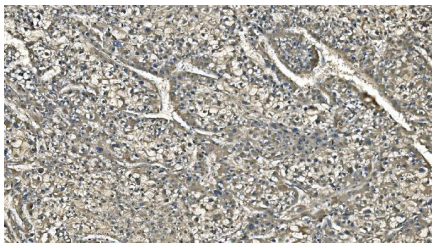

Figure 3. IHC analysis of Carbonic Anhydrase I/CA1 using anti-Carbonic Anhydrase I/CA1 antibody (M00170-1). Carbonic Anhydrase I/CA1 was detected in paraffin-embedded section of human liver cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 µg/ml mouse anti-Carbonic Anhydrase I/CA1 Antibody (M00170-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

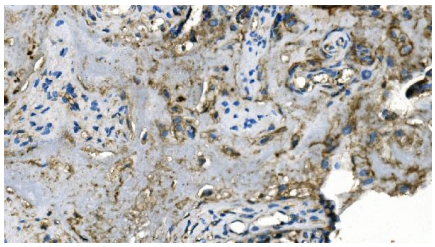

Figure 4. IHC analysis of Carbonic Anhydrase I/CA1 using anti-Carbonic Anhydrase I/CA1 antibody (M00170-1). Carbonic Anhydrase I/CA1 was detected in paraffin-embedded section of human placenta tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 µg/ml mouse anti-Carbonic Anhydrase I/CA1 Antibody (M00170-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

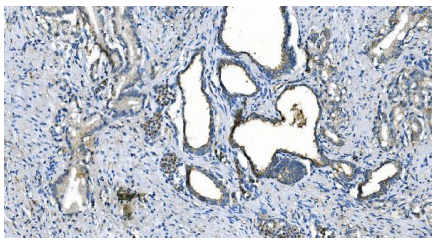

Figure 5. IHC analysis of Carbonic Anhydrase I/CA1 using anti-Carbonic Anhydrase I/CA1 antibody (M00170-1). Carbonic Anhydrase I/CA1 was detected in paraffin-embedded section of human prostate cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 µg/ml mouse anti-Carbonic Anhydrase I/CA1 Antibody (M00170-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

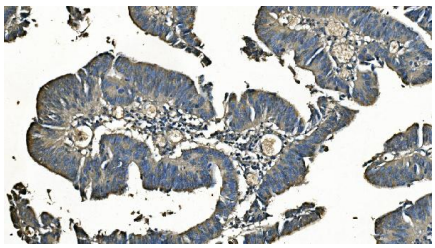

Figure 6. IHC analysis of Carbonic Anhydrase I/CA1 using anti-Carbonic Anhydrase I/CA1 antibody (M00170-1). Carbonic Anhydrase I/CA1 was detected in paraffin-embedded section of human rectal cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue

section was then incubated with 2 µg/ml mouse anti-Carbonic Anhydrase I/CA1 Antibody (M00170-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

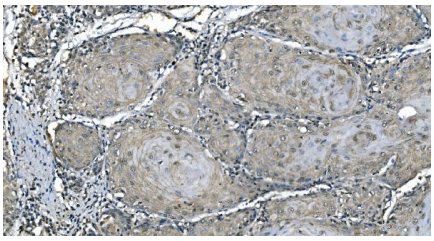

Figure 7. IHC analysis of Carbonic Anhydrase I/CA1 using anti-Carbonic Anhydrase I/CA1 antibody (M00170-1). Carbonic Anhydrase I/CA1 was detected in paraffin-embedded section of human esophageal squamous carcinoma tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 µg/ml mouse anti-Carbonic Anhydrase I/CA1 Antibody (M00170-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

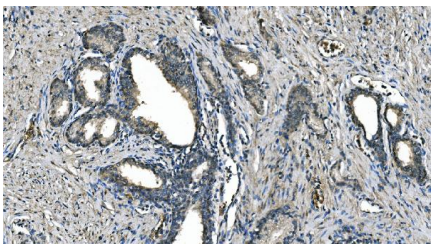

Figure 8. IHC analysis of Carbonic Anhydrase I/CA1 using anti-Carbonic Anhydrase I/CA1 antibody (M00170-1). Carbonic Anhydrase I/CA1 was detected in paraffin-embedded section of human prostate cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 µg/ml mouse anti-Carbonic Anhydrase I/CA1 Antibody (M00170-1) overnight at 4°C. Biotinylated goat anti-mouse IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1021) with DAB as the chromogen.

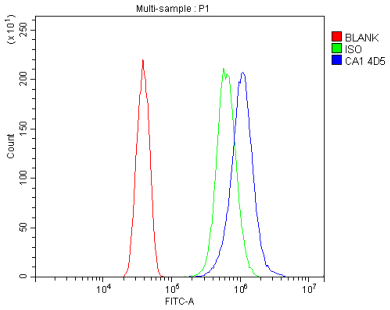

Figure 9. Flow Cytometry analysis of SiHa cells using anti-Carbonic Anhydrase I/CA1 antibody (M00170-1). Overlay histogram showing SiHa cells stained with M00170-1 (Blue line).The cells were blocked with 10% normal goat serum. And then incubated with mouse anti-Carbonic Anhydrase I/CA1 Antibody (M00170-1, 1 µg/1x10^6 cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-mouse IgG (BA1126, 5-10 µg/1x10^6 cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) was mouse IgG (1 µg/1x10^6) used under the same conditions. Unlabelled sample (Red line) was also used as a control.