

## Active Recombinant Mouse Car4 protein, His-tagged

**Cat. No.** Car4-7836M    **Lot. No.** (See product label)

### SPECIFICATION

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| <b>Product Overview</b> | Active Recombinant Mouse Car4 protein(Q64444)(21-216 aa), fused with N-terminal His tag, was expressed in E.coli.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Species</b>          | Mouse                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Source</b>           | E.coli                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>ProteinLength</b>    | 21-216 aa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Form</b>             | PBS, pH7.4, containing 0.01% SKL, 1mM DTT, 5% Trehalose and Proclin300.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Bio-activity</b>     | <p>Carbonic Anhydrase (CA) catalyzes the reversible reaction of <math>\text{CO}_2 + \text{H}_2\text{O} = \text{HCO}_3^- + \text{H}^+</math>, which is fundamental to many processes such as respiration, renal tubular acidification and bone resorption. CA4 is a GPI anchored membrane enzyme expressed on the luminal surfaces of pulmonary (and certain other) capillaries and of proximal renal tubules. It functions as the principal <math>\text{CO}_2</math> taste sensor. The activity of recombinant mouse CA4 was measured by its ability to hydrolyze 4-Nitrophenyl acetate (4-NPA) to 4-Nitrophenol. The reaction was performed in 12.5 mM Tris, 75 mM NaCl, pH 7.5 (assay buffer), initiated by addition 50 <math>\mu\text{L}</math> of various concentrations of CA4 (diluted by assay buffer) to 50 <math>\mu\text{L}</math> of 2 mM substrate 4-NPA (100 mM stock in Acetone, diluted by assay buffer). Incubated at 37°C for 5min, then read at a wavelength of 400 nm. One unit of enzyme activity is defined as the 1 <math>\mu\text{g}</math> of enzyme required to convert 1 pmol of 4-Nitrophenyl acetate to 4-Nitrophenol in 1min at 37°C. The specific activity of recombinant mouse CA4 is &gt; 50 pmol/min/g.</p> |

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|                       |                                                                                                                                          |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Molecular Mass</b> | 23.2kDa                                                                                                                                  |
| <b>Endotoxin</b>      | <1.0EU per 1µg (determined by the LAL method).                                                                                           |
| <b>Purity</b>         | > 90%                                                                                                                                    |
| <b>Storage</b>        | Avoid repeated freeze/thaw cycles. Store at 2-8°C for one month. Store at -20°C for 12 months. Aliquot and store at -80°C for 12 months. |
| <b>Reconstitution</b> | Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.1-1.0 mg/mL. Do not vortex.                                                     |

## GENE INFORMATION

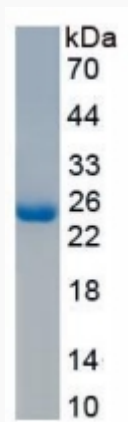
|                        |                                                                                                           |
|------------------------|-----------------------------------------------------------------------------------------------------------|
| <b>Gene Name</b>       | Car4 carbonic anhydrase 4 [ Mus musculus ]                                                                |
| <b>Official Symbol</b> | Car4                                                                                                      |
| <b>Synonyms</b>        | CAR4; carbonic anhydrase 4; CA IV; CA-IV; carbonic anhydrase IV; carbonate dehydratase IV; Ca4; AW456718; |
| <b>Gene ID</b>         | 12351                                                                                                     |
| <b>mRNA Refseq</b>     | NM_007607                                                                                                 |
| <b>Protein Refseq</b>  | NP_031633                                                                                                 |

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