

## Active Recombinant Rat Car4 protein, His-tagged

**Cat. No.** Car4-364R    **Lot. No.** (See product label)

### SPECIFICATION

**Product Overview**      Active Recombinant Rat Car4 protein(P48284)(20-220 aa), fused with N-terminal His tag, was expressed in E.coli.

**Species**                      Rat

**Source**                        E.coli

**ProteinLength**              20-220 aa

**Form**                          PBS, pH7.4, containing 0.01% SKL, 1mM DTT, 5% Trehalose and Proclin300.

**Bio-activity**                      Carbonic Anhydrase (CA) catalyzes the reversible reaction of  $\text{CO}_2 + \text{H}_2\text{O} = \text{HCO}_3^- + \text{H}^+$ , 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  $\text{CO}_2$  taste sensor. The activity of recombinant rat 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  $\mu\text{L}$  of various concentrations of CA4 (diluted by assay buffer) to 50  $\mu\text{L}$  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  $\mu\text{g}$  of enzyme required to convert 1 pmol of 4-Nitrophenyl acetate to 4-Nitrophenol in 1min at 37°C. The specific activity of recombinant rat CA4 is > 200 pmol/min/g.

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<b>Molecular Mass</b>	26.5kDa
<b>Endotoxin</b>	<1.0EU per 1µg (determined by the LAL method).
<b>Purity</b>	> 95%
<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>	<a href="#">Car4 carbonic anhydrase 4 [ Rattus norvegicus ]</a>
<b>Official Symbol</b>	<a href="#">Car4</a>
<b>Synonyms</b>	CAR4; carbonic anhydrase 4; CA-IV; carbonic anhydrase IV; carbonate dehydratase IV; Ca4;
<b>Gene ID</b>	<a href="#">29242</a>
<b>mRNA Refseq</b>	<a href="#">NM_019174</a>
<b>Protein Refseq</b>	<a href="#">NP_062047</a>

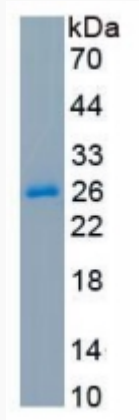
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