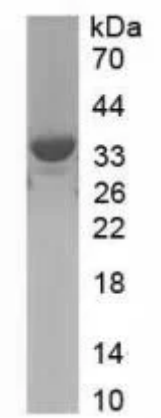
Active Carbonic Anhydrase II (CA2)

Catalog#:PER12496

概述（Summary）

别称（Alternative Names）	CA-II; CAII; Car2; CAC; Carbonate dehydratase II; Carbonic anhydrase C
纯度（Purity）	Greater than 95% as determined by reducing SDS-PAGE.
内毒素（Endotoxin level）	Please contact with the lab for this information
蛋白构建（Construction）	【Met1-Lys260】
Accession #	P27139
表达宿主（Host）	E.coli
种属（Species）	Rattus norvegicus (Rat)
预测分子量（Predicted MW）	30.4 kDa
制剂（Form）	Lyophilized from a 0.2 μm filtered solution of PBS, pH7.4, containing 0.01% SKL, 1mM DTT, 5% Trehalose and Proclin300.
运输方式（Shipping）	The product is shipped with ice bag. Upon receipt, store it immediately at the temperature listed below.
稳定性&储存（Stability &Storage）	12 months at -20°C to -80°C in lyophilized state.6 months at -20°C to -80°C under sterile conditions after reconstitution.7-10 days at 2°C to 8°C under sterile conditions after reconstitution.Please minimize freeze-thaw cycles.
复溶（Reconstitution）	Reconstitute in 10mM PBS (pH7.4) to a concentration of 0.1-1.0 mg/mL. Do not vortex.
背景介绍（References）	Essential for bone resorption and osteoclast differentiation. Reversible hydration of carbon dioxide. Contributes to intracellular pH regulation in the duodenal upper villous epithelium during proton-coupled peptide absorption. Stimulates the chloride-bicarbonate exchange activity of SLC26A6.

电泳图（SDS-PAGE image）



Greater than 95% as determined by reducing SDS-PAGE.

活性图（Bioactivity image）

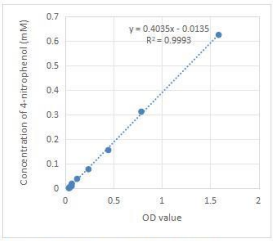


Figure 1. The standard curve of 4-Nitrophenol

OD400nm	4-Nitrophenol (product) mM
1.586	0.625
0.786	0.3125
0.444	0.15625
0.239	0.078125
0.121	0.0390625
0.066	0.01953125
0.064	0.009765625
0.043	0.004882813
0.045	0.002441406
0.035	0.001220703

One unit of enzyme activity is defined as the 1 μg 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 CA2 is > 50200 pmol/min/μg.

Specific Activity (pmol/min/μg)= $\frac{\Delta OD * F}{T * N}$

△OD=Adjusted for Substrate Blank
F=Conversion Factor (convert from standard curve of 4-Nitrophenol)
T= Time
N=Amount of enzyme

Carbonic Anhydrase (CA) catalyzes the reversible reaction of CO2 H2O = HCO3- H , which is fundamental to many processes such as respiration, renal tubular acidification and bone resorption. CA2 is a cytosolic enzyme with the highest activity among all known CAs. Mutations in the CA2 gene result in the CA II deficiency syndrome, an autosomal recessive disorder that produces osteopetrosis, renal tubular acidosis and cerebral calcification. The activity of recombinant rat CA2 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 μL of various concentrations of CA2 (diluted by assay buffer) to 50 μL of 2 mM substrate 4-NPA (100 mM stock in Acetone, diluted by assay buffer). Incubated at 37℃ for 5min, then read at a wavelength of 400 nm.

注意事项（Note）

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