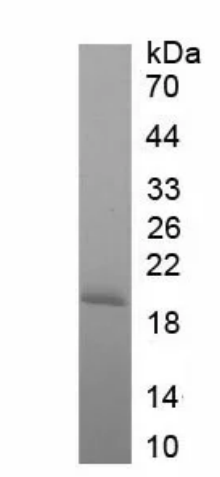
Active Carbonic Anhydrase VII (CA7)

Catalog#:PEM12892

概述（Summary）

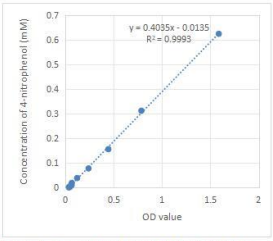
别称（Alternative Names）	CA-VII; CAVII; Carbonate dehydratase VII
纯度（Purity）	Greater than 90% as determined by reducing SDS-PAGE.
内毒素（Endotoxin level）	Please contact with the lab for this information
蛋白构建（Construction）	【Ser58-Pro217】
Accession #	Q9ERQ8
表达宿主（Host）	E.coli
种属（Species）	Mus musculus (Mouse)
预测分子量（Predicted MW）	19.2 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）	Reversible hydration of carbon dioxide.

电泳图（SDS-PAGE image）



Greater than 90% as determined by reducing SDS-PAGE.

活性图（Bioactivity image）



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

Figure 1. The standard curve of 4-Nitrophenol

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 mouse CA7 is > 400 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 catalyzes the reversible reaction of CO2 H2O = HCO3- H , which is fundamental to many processes such as respiration, renal tubular acidification and bone resorption. Carbonic Anhydrase VII encoded by the CA7 gene is a cytosolic protein predominantly expressed in the salivary gland. CA7 may have additional tissue distributions and functions. For example, studies with CA inhibitors provide evidence that human CA7 is the CA isozyme responsible for the anticonvulsant/antiepileptic activity of sulfonamides and sulfamates. In fact, CA7 has been shown in a rat model to act as a developmental switch in GABAergic signaling in neurons. The activity of recombinant mouse CA7 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 CA7 (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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