

Carbonic Anhydrase IV (CA4) Active Protein | CA4 active protein

Active Carbonic Anhydrase IV (CA4)

CATALOG # AAA161900	HOST E Coli	APPLICATIONS Activity Assay, Cell Culture
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PRODUCT SYNONYMS

Carbonic Anhydrase IV (CA4); Active Carbonic Anhydrase IV (CA4); Carbonic Anhydrase IV; CA-IV; CAIV; Car4; RP17; Retinitis Pigmentosa 17(Autosomal Dominant); Carbonate dehydratase IV4; CA4 active protein

PRODUCT SPECIFICATIONS

Host	E Coli
Purity/Purification	Greater than 95% by SDS-PAGE
Form/Format	Freeze-dried powder; PBS, pH7.4, containing 0.01% SKL, 1mM DTT, 5% Trehalose and Proclin300.
Sequence	Ala19~Lys283
Applicable Applications for CA4 active protein	Activity Assay, Cell Culture
Species	Human
Expression System	Prokaryotic expression
Tag	N-terminal His Tag
Endotoxin Level	<1.0EU per 1ug (determined by the LAL method)
Isoelectric Point	6.5
Research Area	Enzyme & Kinase
Preparation and Storage	Store at 2-8 degree C for one month, -80 degree C for 12 months

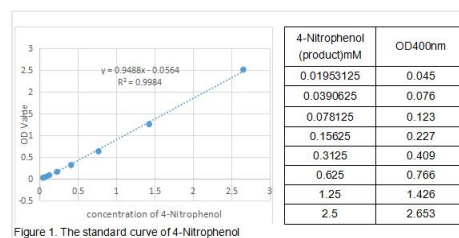
IMAGES

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

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

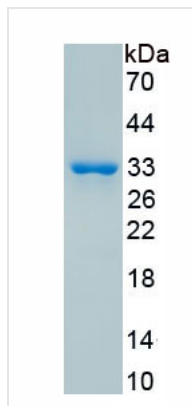
Bioactivity

One unit of enzyme activity is defined as the 1 ug of enzyme required to convert 1 pmol of 4-Nitrophenyl acetate to 4-Nitrophenol in 1min at 37 degree C. The specific activity of recombinant human CA4 is > 15 pmol/min/ug.



Bioactivity

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 CO_2 taste sensor. The activity of recombinant human 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 uL of various concentrations of CA4 (diluted by assay buffer) to 50 uL of 2 mM substrate 4-NPA (100 mM stock in Acetone, diluted by assay buffer). Incubated at 37 degree C for 5min, then read at a wavelength of 400 nm.



SDS-PAGE
Figure. SDS-PAGE

ADDITIONAL INFORMATION

Product Categories/Family for CA4 active protein	Active proteins
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NCBI AND UNIPROT INFORMATION

NCBI GI #	115465
NCBI GeneID	762
UniProt Accession #	P22748; Q6FHI7; B4DQA4
Molecular Weight	312
NCBI Official Full Name	Carbonic anhydrase 4
NCBI Official Synonym Full Names	carbonic anhydrase IV
NCBI Official Symbol	CA4
NCBI Official Synonym Symbols	CAIV; Car4; RP17
NCBI Protein Information	carbonic anhydrase 4; CA-IV; carbonic dehydratase IV; carbonate dehydratase IV
UniProt Protein Name	Carbonic anhydrase 4
UniProt Gene Name	CA4
UniProt Synonym Gene Names	CA-IV
UniProt Entry Name	CAH4_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://stage.aaabiotech.com/e-coli-active-protein/carbonic-anhydrase-iv-ca4/161900>