

# Recombinant Human Carbonic Anhydrase XII/CA12 Protein (His Tag)



Catalog Number:PKSH031505

**Note:** Centrifuge before opening to ensure complete recovery of vial contents.

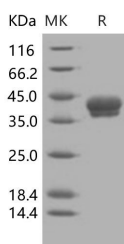
## Description

<b>Synonyms</b>	CA12;CAXII;FLJ20151;HsT18816
<b>Species</b>	Human
<b>Expression Host</b>	HEK293 Cells
<b>Sequence</b>	Met 1-Gln 291
<b>Accession</b>	NP_001209.1
<b>Calculated Molecular Weight</b>	31.6 kDa
<b>Observed molecular weight</b>	40-45 kDa
<b>Tag</b>	C-His
<b>Bioactivity</b>	Measured by its esterase activity. The specific activity is > 40 pmoles/min/μg, as measured with 1 mM 4-Nitrophenyl acetate and 2.5 μg enzyme at 400 nm in 100 μL of 12.5 mM Tris, 75 mM NaCl, pH 7.5.

## Properties

<b>Purity</b>	> 97 % as determined by reducing SDS-PAGE.
<b>Endotoxin</b>	< 1.0 EU per μg of the protein as determined by the LAL method.
<b>Storage</b>	Generally, lyophilized proteins are stable for up to 12 months when stored at -20 to -80°C. Reconstituted protein solution can be stored at 4-8°C for 2-7 days. Aliquots of reconstituted samples are stable at < -20°C for 3 months.
<b>Shipping</b>	This product is provided as lyophilized powder which is shipped with ice packs.
<b>Formulation</b>	Lyophilized from sterile PBS, pH 7.4 Normally 5 % - 8 % trehalose, mannitol and 0.01 % Tween80 are added as protectants before lyophilization. Please refer to the specific buffer information in the printed manual.
<b>Reconstitution</b>	Please refer to the printed manual for detailed information.

## Data



> 97 % as determined by reducing SDS-PAGE.

## Background

Carbonic anhydrases (CAs) are a large family of zinc metalloenzymes first discovered in 1933 that catalyze the reversible hydration of carbon dioxide. CAs participate in a variety of biological processes, including respiration, calcification, acid-base balance, bone resorption, and the formation of aqueous humor, cerebrospinal fluid, saliva, and gastric acid. CA12, also known as Car12 and carbonic anhydrase XII, is a type I membrane enzyme of an N-terminal extracellular catalytic domain, a membrane-spanning  $\alpha$ -helix, and a small intracellular C-terminal domain. It is highly expressed in colon,

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kidney, prostate, intestine and activated lymphocytes and moderately expressed in pancreas, ovary, and testis. Overexpression of the CA12 is observed in certain human cancers and is used as a tumor marker. rmCA12 corresponds to the extracellular domain and has both carbonic anhydrase activity and esterase activity.

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