

**APA782Ra01 100µg**

**Active Carbonic Anhydrase II (CA2)**

**Organism Species: Rattus norvegicus (Rat)**

***Instruction manual***

FOR IN VITRO USE AND RESEARCH USE ONLY  
NOT FOR USE IN CLINICAL DIAGNOSTIC PROCEDURES

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1st Edition (Apr, 2016)

## **[ PROPERTIES ]**

**Source:** Natural Extract

**Host:** Rat (Erythrocytes)

**Purity:** >98%

**Buffer Formulation:** 20mM Tris, 150mM NaCl, pH8.0, containing 0.05% sarcosyl and 5% trehalose.

**Applications:** Cell culture; Activity Assays; In vivo assays.

(May be suitable for use in other assays to be determined by the end user.)

**Predicted isoelectric point:** 6.9

**Predicted Molecular Mass:** 29kDa

**Accurate Molecular Mass:** 29kDa as determined by SDS-PAGE reducing conditions.

## **[ USAGE ]**

Reconstitute in 20mM Tris, 150mM NaCl (pH8.0) to a concentration of 0.1-1.0 mg/mL. Do not vortex.

## **[ STORAGE AND STABILITY ]**

**Storage:** Avoid repeated freeze/thaw cycles.

Store at 2-8°C for one month.

Aliquot and store at -80°C for 12 months.

**Stability Test:** The thermal stability is described by the loss rate. The loss rate was determined by accelerated thermal degradation test, that is, incubate the protein at 37°C for 48h, and no obvious degradation and precipitation were

observed. The loss rate is less than 5% within the expiration date under appropriate storage condition.

## [ **ACTIVITY** ]

CA2 (Carbonic anhydrase 2) is an enzyme that catalyzes reversible hydration of carbon dioxide. It is essential for bone resorption and osteoclast differentiation and contributes to intracellular pH regulation in the duodenal upper villous epithelium during proton-coupled peptide absorption. It is widely accepted that CA2 also catalyzes hydrolysis of p-Nitrophenyl Acetate. Thus, a hydration assay was conducted to test the catalytic activity of CA2 using 4-Nitrophenyl Acetate (4-NPA) as substrate. Briefly, different concentrations of CA2 were incubated with 1mM 4-NPA in reaction buffer. The absorbance at the wavelength of 400nm was read per hour, and the result was shown in figure 1. It is obvious that CA2 catalyzes hydrolysis of p-Nitrophenyl Acetate.

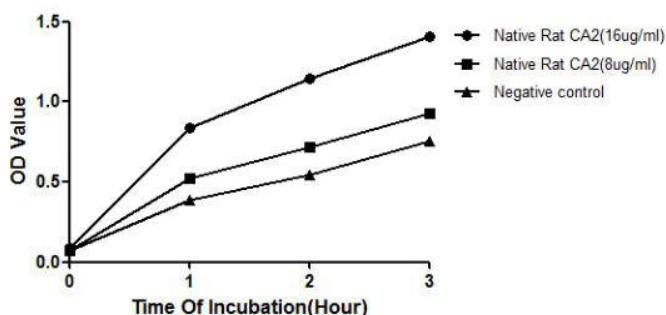
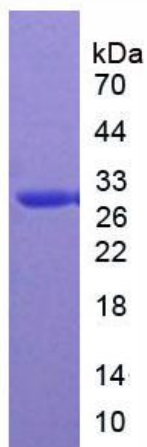


Figure 1. Hydrolysis of p-Nitrophenyl Acetate catalyzed by CA2.

**[ IDENTIFICATION ]**



**Figure 2. SDS-PAGE**

**Sample: Active CA2, Rat**