Renin (human), (recombinant) (active)

Highly specific active enzyme cleaves angiotensinogen to yield angiotensin I

Renin is a highly specific aspartyl protease that participates in the body's renin-angiotensin system (RAS). It cleaves angiotensinogen, which is produced in the liver, to yield angiotensin I. This is further converted into angiotensin II by angiotensin converting enzyme. Angiotensin II has been shown to constrict blood vessels and increase sodium reabsorption in the kidneys, leading to increased blood pressure. The primary structure of renin precursor consists of 406 amino acids with a pre- and a pro-segment carrying 20 and 46 amino acids, respectively. Mature renin contains 340 amino acids and has a predicted mass of ~37 kDa.

Ordering Information

Order Online »

ENZ-PRT193-0010	10µg

Manuals, SDS & CofA

View Online »

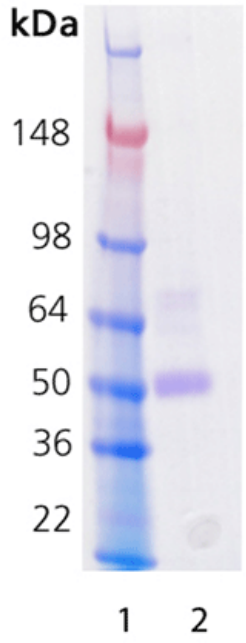

Figure 1. Coomassie stained SDS-PAGE. Lane 1, Molecular weight marker. Lane 2, 1.0µg Human active renin (ENZ-PRT193).

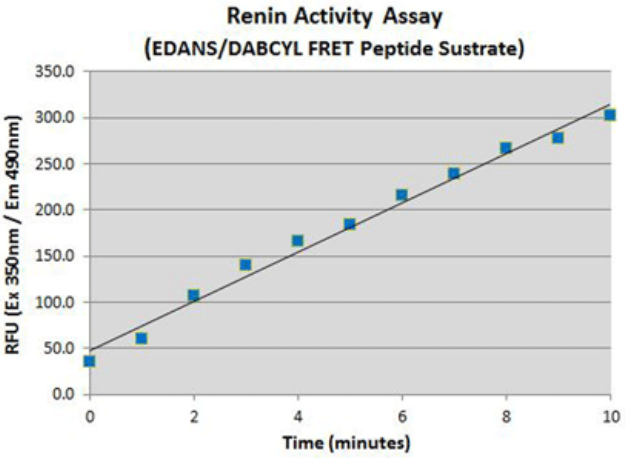

Figure 2. Renin activity using the FRET peptide substrate, Arg-Glu(EDANS)-Ile-His-Pro-Phe-His-Pro-Phe-His-Leu-Val-Ile-His-Thr-Lys (DARBCYL)-Arg. Briefly, a 10µg vial of renin (ENZ-PRT193) was resuspended in 100µl dH_2O. The renin protein was diluted to 20µg/ml in 50µl of buffer (25mM MES pH6 and 150mM NaCl). Separately, the renin substrate was diluted to 20µM in a 50µl volume. Both the enzyme and substrate were heated to 37°C for 10 minutes. They were then combined and read kinetically every minute for 10 minutes (using Ex350nm / Em 490nm). Interpolation off a standard curve (calibration standard Fmoc-Glu(EDANS)-OH) was used to calculate the activity of the renin enzyme. The activity was calculated to be > 30pmole/µg/min.

Handling & Storage

Use/Stability	Reconstitute in 100µl deionized H2O for a final concentration of 0.1mg/ml.
Handling	Avoid freeze/thaw cycles. After reconstitution, prepare aliquots and store at -80°C.
Short Term Storage	-20°C
Long Term Storage	-20°C
Shipping	Blue Ice

Regulatory Status

RUO - Research Use Only

Product Details

Alternative Name	Angiotensinogenase, Angiotensin forming enzyme, Ren
Concentration	0.1 mg/ml when reconstituted as suggested.
Endotoxin Content	<0.1EU/µg protein (LAL test; Associates of Cape Cod).
Formulation	Lyophilized. In 25mM MES buffer containing 150mM NaCl.
MW	~52kDa (predicted is 38.3 kDa)
Purity	≥90%
Purity Detail	Affinity purifed.
Source	Produced in HEK cells. Mature Renin (aa 67-406) is fused at the N-terminus to a FLAG® -tag. Active form, does not contain prorenin peptide (aa 1-66).
Specific Activity	≥30U/µg. 1 unit is defined as the amount of enzyme that cleaves 1 pmole of the fluorogenic peptide substrate (Renin Substrate 1), Arg-Glu(EDANS)-Ile-His-Pro-Phe-His-Leu-Val-Ile-His-Thr-Lys(DABCYL)-Arg.
Technical Info / Product Notes	FLAG® is a registered trademark of Sigma-Aldrich Co.
UniProt ID	P00797

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