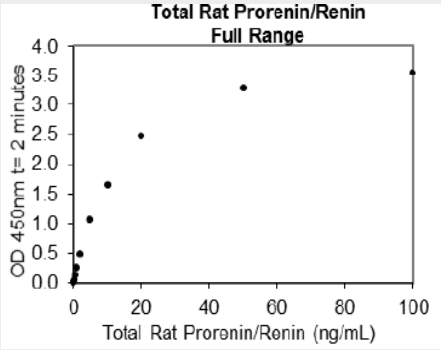
Rat Renin-1 ELISA kit, 96 tests, cat # 1340, Quantitative

Rat prorenin/renin total antigen ElisA KIT is intended for the quantitative determination of total prorenin and renin antigen in rat plasma and serum or other biological samples. For research use only.



Rat Renin-1 ELISA Kit Features

Standards Range 0.1 - 100 ng/ml (Rat prorenin standard: 1 vial lyophilized standard)
Sensitivity: The minimum detectable dose (MDD) was 0.014 ng/ml.
Assay time: 100 minute at Room temp (25-28oC on a shaker; 30+30+30+10)
Assay Procedure: Perform assay at room temperature. Vigorously shake plate (300rpm) at each step of the assay.
Samples: Plasma

This kit is for measuring Rat prorenin in plasma.

For in vitro research use only (RUO).

Assay Procedure: Allow all reagents to reach room temperature. Arrange required number of strips on the plate.

Step 1. Add 100 µl of pre-diluted standards, controls and samples (diluted) into respective wells. Shake plate at 300rpm for 30 minutes.

Step 2. Aspirate and wash wells three times with 300µl wash buffer. Remove excess wash by gently tapping plate on paper towel. Add 100µl of primary antibody to all wells. Shake plate at 300rpm for 30 minutes.

Step 3. Aspirate and wash 3X with 1X wash buffer. Add 100 ul of HRP conjugated streptavidin. Shake plate at 300rpm for 30 minutes and incubate for 20 min at RT. Blue color develops in positive wells. Note: It is possible to incubate for 20 mins +5 mins so as to get maximum color A450=2.5-3.00 (within the linear range of the ELISA reader).

Step 4. Aspirate and wash 3X with 1X wash buffer. Tap plates over paper towels. Add 100 ul of TMB substrate to all wells and shake plate for 2-10 minutes. Substrate will change from colorless to different strengths of blue.

Step 5. Quench reaction by adding 50µl of 1N H_2SO_4 or HCl stop solution to all wells when samples are visually in the same range as the standards. Add stop solution to wells in the same order as substrate upon which color will change from blue to yellow. Mix thoroughly by gently shaking the plate. Measure yellow color at 450 nm. Standard range is plotted and the sample values are calculated from the standard curve.

General Information

Renin is a secreted endopeptidase that plays a crucial role in the regulation of blood pressure and salt balance through the cleavage of angiotensinogen, which is the only known physiological substrate of Renin. The 406 aa precursor includes a signal peptide (aa 1 - 23), a propeptide (aa 24 - 66), and a mature chain (aa 67 - 406). The amino acid sequence of human Renin is 100%, 73%, 71% and 67% identical to that of chimpanzee, canine, mouse and rat.

Prorenin is a glycosylated aspartic protease that consists of 2 homologous lobes and is the precursor of renin. Renin activates the renin-angiotensin system by cleaving angiotensinogen, produced by the liver, to yield angiotensin I, which is further converted into angiotensin II by ACE, the angiotensin-converting enzyme primarily within the capillaries of the lungs. It has been reported that the levels of circulating prorenin (but not renin) are increased in diabetic subjects.

Rat prorenin and renin will bind to the affinity purified capture antibody coated on the microtiter plate. After appropriate washing steps, biotin-labeled polyclonal anti-rat prorenin antibody binds to the captured protein. Excess antibody is washed away and bound polyclonal antibody is reacted with streptavidin conjugated to horseradish peroxidase. TMB substrate is used for color development at 450nm. A standard calibration curve is prepared along with the samples to be measured using dilutions of rat prorenin. Color development is proportional to the total concentration of prorenin and renin in the samples.

Sample Collection: Collect plasma using EDTA or citrate as an anticoagulant. Centrifuge for 15 minutes at 1000xg within 30 minutes of collection. Assay immediately or aliquot and store at ≤ -20°C. Avoid repeated freeze-thaw cycles.

Related Items

Catalog#	Prod Description
1320	Mouse Renin-1 ELISA kit, 96 tests, Quantitative
1330	Human Renin-1 ELISA kit, 96 tests, Quantitative
1340	Rat Renin-1 ELISA kit, 96 tests, Quantitative

1340-Rat-Renin-1-ELISA-kit 151222SV