

Renin (active) ELISA

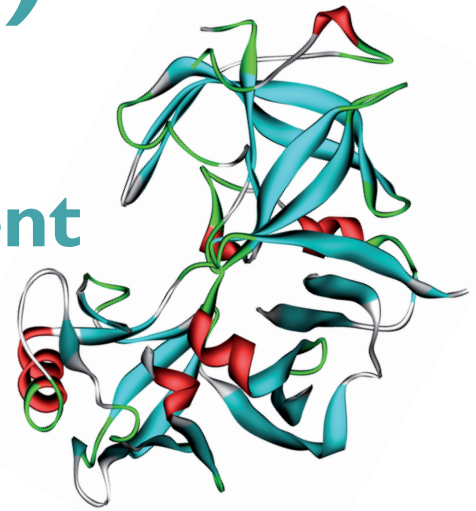


DRG

DRG ELISA

Renin (active)

The worldwide first ELISA for the measurement of active Renin



Intended use:

Quantitative in vitro diagnostic measurement of active Renin in human EDTA Plasma. Renin measurement can be helpful in diagnosis and treatment of certain types of hypertension.

Summary and explanation of the test:

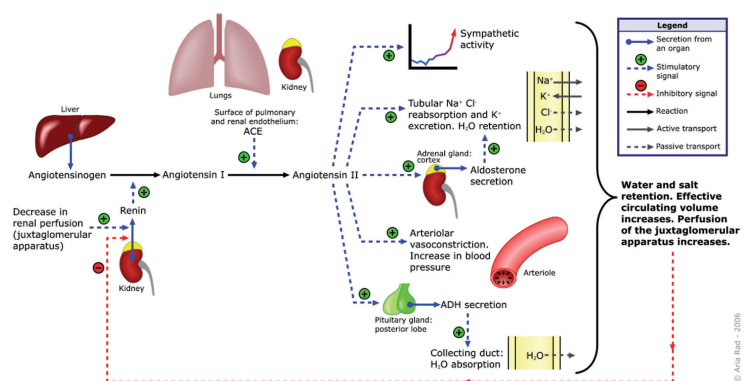
Renin is a protein (Mw of 37 kDa) that belongs to the aspartic acid proteinase family of enzymes. Renin regulates the mean arterial blood pressure of the human body by cleavage of angiotensinogen into the precursor peptide angiotensin-I, which ultimately is processed by angiotensin converting enzyme (ACE) to the active octapeptide angiotensin-2. Renin is produced constitutively as prorenin (inactive precursor with 386 amino acids) in the juxtaglomerular cells of the kidney. In response to low blood pressure, low sodium chloride, or activity of the sympathetic nervous system, active renin can be released either from a depot in the kidney or generated from prorenin by cleavage of 46 amino acids of the N-Terminus of prorenin. The blood concentration of prorenin is approx. 10-fold higher than active renin.

Clinical relevance

- Differential diagnosis of hyperaldosteronism
- Diagnosis of isolated deficit in mineral corticoides
- Detection of Renin producing tumors (kidney and lung cancer)
- Diagnosis of malignant hypertension (high blood pressure)
- Monitoring of glucocorticoid therapy
- Detection of physiological increase during pregnancy

Renin (active) assay characteristics:

- Assay Principle: Sandwich ELISA
- Dynamic Range: 1.13-128 pg/mL of active Renin
- Total Assay Time: 3 hours
- Sample Volume: 75 µl of EDTA Plasma
- Crossreactivity with Prorenin: 0.69%
- Mean Intra Assay Precision: 6.4
- Mean Inter Assay Precision: 6.7
- Analytical Sensitivity: 1.13 pg/mL



Renin-Angiotensin-Aldosterone system

Renin (active) ELISA

Principle of the test

The DRG active Renin ELISA Kit is a solid phase enzyme-linked immunosorbent assay (ELISA) based on the sandwich principle.

The microtiter wells are coated with a monoclonal (mouse) antibody directed towards a unique antigenic site of the Renin molecule. An aliquot of patient sample containing endogenous active Renin is incubated in the coated well with assay buffer. After incubation the unbound conjugate is washed

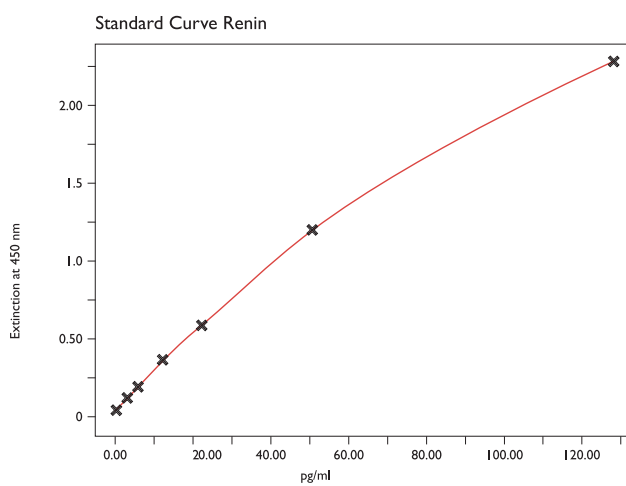
off, and the wells are incubated with Enzyme Complex which is an anti-Renin antibody conjugated with horseradish peroxidase.

The amount of bound peroxidase is proportional to the concentration of active Renin in the sample.

Having added the substrate solution, the intensity of colour developed is proportional to the concentration of active Renin in the patient sample.

Example of Typical Standard Curve

Standard	Optical Units (450 nm)
Standard 0 (0 pg/mL)	0.030
Standard 1 (2.5 pg/mL)	0.105
Standard 2 (5.5 pg/mL)	0.169
Standard 3 (12 pg/mL)	0.318
Standard 4 (26 pg/mL)	0.572
Standard 5 (58 pg/mL)	1.157
Standard 6 (128 pg/mL)	2.200



Reproducibility

Intra Assay

The within assay variability is shown below:

Sample	n	Mean (pg/mL)	CV (%)
1	20	19.3	7.3
2	20	24.1	6.2
3	20	81.4	5.5

Inter Assay

The between assay variability is shown below:

Sample	n	Mean (pg/mL)	CV (%)
1	12	10.1	7.3
2	12	18.0	4.1
3	12	25.0	7.6

Linearity

	Sample 1	Sample 2	Sample 3
Concentration (pg/mL)	22.9	28.7	34.6
Average Recovery	93.5	96.5	97.2
Range of Recovery (%) from to	89.0 96.4	90.7 101.4	93.2 101.8

Recovery

	Sample 1	Sample 2	Sample 3
Concentration (pg/mL)	8.3	23.0	26.0
Average Recovery	99.6	104.3	99.5
Range of Recovery (%) from to	89.5 108.2	99.7 109.4	93.4 108.2

Expected normal values

The preliminary normal value (upright) is 2-40 pg/mL.

Specificity

The cross reactivity with Prorenin is only 0.69 %.

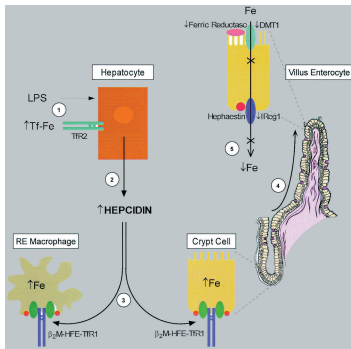
Assay Dynamic Range

The dynamic range of the DRG active Renin ELISA is between 1.13-128 pg/mL.

Sensitivity

The analytical sensitivity of the DRG active Renin ELISA is 1.13 pg/mL.

DRG ELISAS

Tumormarker	Gyn. Endocrinology	Prenatal Supervision	Saliva Diagnostics
CYFRA 21-I CA 72-4 CA 15-3 CA 125 CA 19-9 CEA TPS TPA PSA free PSA NSE Chromogranin	Estradiol Progesterone 17a-OH Progesterone DHEA-S Testosterone DHEA Estrone Androstendione DHT SHBG DHEA LH, FSH, PRL	PAPP-A Free β HCG AFP Free Estriol HCG HPL PLGF	Cortisol Estradiol Testosterone DHEA Progesterone 17a-OH Progesterone
Diabetes/Obesity	Iron Metabolism		Hypertension
Insulin C-Peptid Proinsulin Leptin	Hepcidin Pro-Hepcidin		Renin Aldosterone

New

ELISAS that perform

DRG develops and manufactures diagnostic ELISA test kits for use in clinical and research laboratories. The experience of our production and management team guarantees to provide high quality products, competitive prices and excellent customer service.

DRG works to DIN EN ISO 9001:2000, ISO 13485:2003 and ISO 13485:2003 under CMDCAS standard, certified by TÜV Rheinland Product Safety GmbH, an indication of our commitment to customer service, quality control and improved health care.

DRG Diagnostics

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