

# Renin (active) ELISA

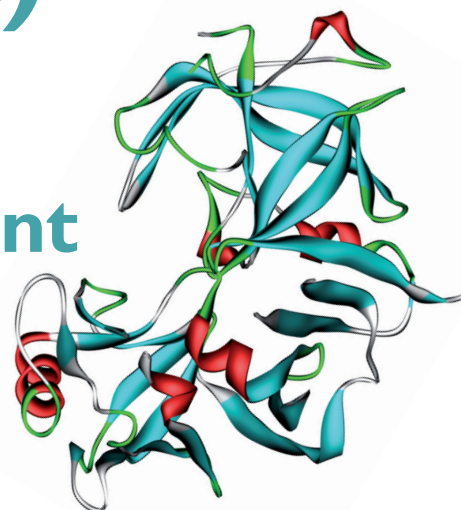


**DRG**

# 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 and serum. Renin measurement can be helpful in diagnosis and treatment of certain types of hypertension.

### Summary and explanation of the test:

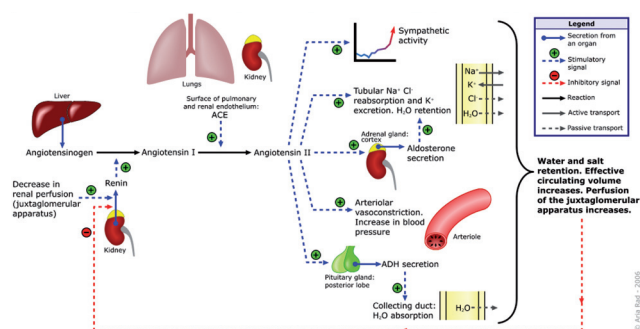
Renin is a protein (Mw of 37 kDa) that belongs to the aspartic acid proteinase family of enzymes. Renin regulates the mean arterial blood pressure of the human body by cleavage of angiotensinogen into the precursor peptide angiotensin-I, which ultimately is processed by angiotensin converting enzyme (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

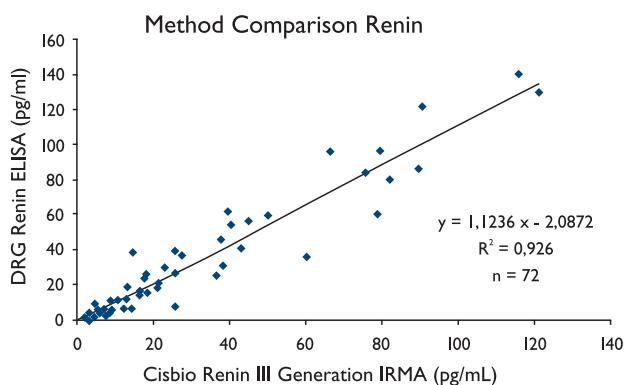
- Differential diagnosis of hyperaldosteronism
- Diagnosis of isolated deficit in mineral corticoides
- Detection of Renin producing tumors (kidney and lung cancer)
- Diagnosis of malignant hypertonia (high blood pressure)
- Monitoring of glucocorticoid therapy
- Detection of physiological increase during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

### Renin (active) assay characteristics:

- Assay Principle: Sandwich ELISA
- Dynamic Range: 0.8 - 128 pg/mL of active Renin
- Total Assay Time: 3.25 hours
- Sample Volume: 50 µl of EDTA plasma or serum
- Cross-reactivity with Prorenin: 0.69%
- Mean Intra Assay Precision: 5.6 %
- Mean Inter Assay Precision: 6.8 %
- Analytical Sensitivity: 0.8 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

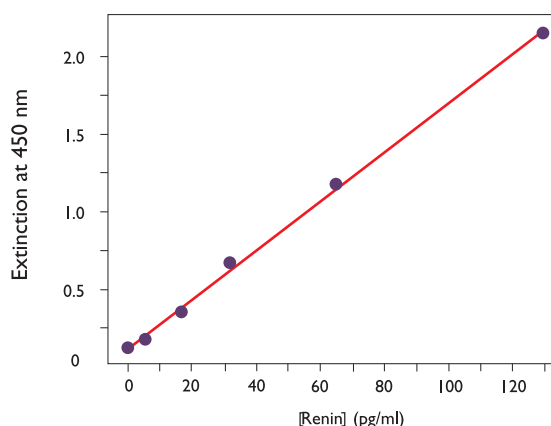
off, and the wells are incubated with Enzyme Complex which is an anti-Renin antibody conjugated with horseradish peroxidase.

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)	0.09
Standard 1 (4 pg/mL)	0.19
Standard 2 (16 pg/mL)	0.44
Standard 3 (32 pg/mL)	0.78
Standard 4 (64 pg/mL)	1.14
Standard 5 (128 pg/mL)	2.48



## Reproducibility

### Intra Assay

The within assay variability is shown below:

Sample	n	Mean (pg/mL)	CV (%)
1	20	44.0	4.2
2	20	27.0	3.9
3	20	9.1	8.7

### Inter Assay

The between assay variability is shown below:

Sample	n	Mean (pg/mL)	CV (%)
1	12	19.0	8.9
2	12	36.2	6.3
3	12	66.7	5.2

## Expected normal values

The normal value range is 2.5-36.9 pg/mL (supine),  
2.7-49.3 pg/mL (upright).

## Assay Dynamic Range

The dynamic range of the DRG active Renin ELISA is between 0.8-128 pg/mL.

## Linearity

	Sample 1	Sample 2	Sample 3
Concentration (pg/mL)	45.2	53.2	126.0
Average Recovery (%)	101.7	102.8	98.5
Range of Recovery (%)	from 96.7 to 108.6	95.6 114.6	94.9 100.8

## Recovery

	Sample 1	Sample 2	Sample 3
Concentration (pg/mL)	16.0	16.7	40.2
Average Recovery (%)	96.6	92.9	95.1
Range of Recovery (%)	from 86.8 to 105.3	86.0 105.5	87.9 101.4

## Specificity

The cross reactivity with Prorenin is 0.69 %.

## Sensitivity

The analytical sensitivity of the DRG active Renin ELISA is 0.8 pg/mL.

# DRG ELISAS

## Tumormarker

CYFRA 21-I  
CA 72-4  
CA 15-3  
CA 125  
CA 19-9  
CEA  
TPS  
TPA  
PSA  
free PSA  
NSE  
Chromogranin

## Gyn. Endocrinology

Estradiol  
Progesterone  
17a-OH Progesterone  
DHEA-S  
Testosterone  
DHEA  
Estrone  
Androstendione  
DHT  
SHBG  
DHEA  
LH, FSH, PRL

## Prenatal Supervision

Free  $\beta$  HCG  
AFP  
Free Estriol  
HCG  
HPL  
PLGF

## Saliva Diagnostics

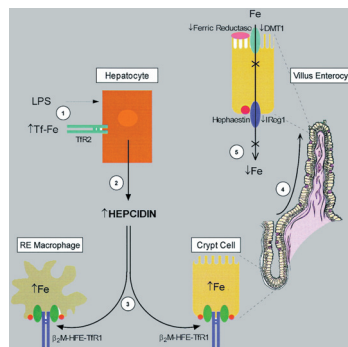
Estrone (**new**)  
Cortisol  
Estradiol  
Testosterone  
DHEA  
Progesterone  
17a-OH Progesterone

## Diabetes/Obesity

Insulin  
C-Peptid  
Proinsulin  
Leptin

## Iron Metabolism

Hepcidin  
Pro-Hepcidin



## Hypertension

Renin  
Aldosterone

## 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

DRG Instruments GmbH, founded in 1973 by Dr. Geacintov, subsidiary of DRG Intl. Inc., USA, is a diagnostics manufacturer of ELISAS. The DRG Group operates through a network of DRG subsidiaries in Germany, Poland, Russia and through distributors worldwide.



## DRG Subsidiaries

**Czech Republic**  
DRG spol. s r.o.,  
Brno

**China**  
DRG Intl. China,  
Beijing

**Poland**  
DRG MedTek South Poland,  
Gliwice  
DRG MedTek Sp. zo.o.,  
Warszawa

**Russia**  
DRG TechSystems,  
Moscow  
DRG Biomed 0.0.0.,  
St. Petersburg



DRG Instruments GmbH, Germany  
Frauenbergstraße 18  
D-35039 Marburg  
Tel. +49 (0) 64 21/17 00 0,  
Fax +49 (0) 64 21/17 00 50  
Internet: www.drg-diagnostics.de  
E-mail: drg@drg-diagnostics.de

For further details and pricing  
please contact



T: +44 (0)1829 824 825  
E: sales@aspectscientific.com  
www.aspectscientific.com



DRG International Inc. USA  
1167 U.S. Highway 22 East  
Mountainside, N.J. 07092 USA  
Phone: +1 (908) 233-2079  
Fax +1 (908) 233-0758  
Internet: www.drg-international.com  
E-mail: corp@drg-international.com