

Aldosterone

General:

Aldosterone, a suprarenal cortex steroid hormone of the zona glomerulosa, controls the sodium and water resorption in the kidney, helps to balance electrolytes and body fluids and regulates blood pressure via renin-angiotensin. Two negative feedback mechanisms exist: blood volume (baroreceptors) and the negative effect of angiotensin-II on renin secretion. Because of short-term fluctuations, e.g. orthostasis and inconstant secretion of supra-renal cortex steroids, aldosterone is recommended to be measured under controlled conditions in the hospital (clinic/laboratory).

The following tests are available:

- **Aldosterone in blood**

Indication: suspicion of hyperaldosteronism, e.g. Conn syndrome (inborn or acquired suprarenal cortex hyperactivity by hyperplasia or tumor), stenosis of kidney arteria, rennin-producing tumors, hyponatremia, hypovolemia, Bartter syndrome, hepatic cirrhosis

Preanalytics: cooled dispatch (2 to 8°C) otherwise dispatch frozen.

Material: 1 ml EDTA plasma (non refrigerated centrifuge) separate plasma immediately.

TAT: 1-3 days, FML

Method: CLIA

Units: ng/dl

Ref. range: adults: lying: 1.17 - 23.6, standing: 2.21 - 35.3, <16 years: see report

Note: *please send EDTA-plasma if also requesting renin and the aldosterone/renin ratio

- **Aldosterone-renin ratio**

General:

The aldosterone-renin quotient is a screening test for primary hyperaldosteronism (Conn syndrome). The ARQ is less affected by factors compared to aldosterone or renin alone. Spironolactone should be stopped 3 weeks before testing the Aldosterone/Renin ratio.

Material: 1 ml EDTA plasma, frozen.

TAT: 1-3 days, FML

Method: calculated

Units: ratio

Ref. range: <2.0

- **Aldosterone and derivatives in urine**

General:

Aldosterone in urine corresponds to the daily production and presents the more stable parameter when compared to the fluctuating serum levels of aldosterone. The daily produced aldosterone consists of approx. 0.5% free, non-metabolized unconjugated form (free aldosterone), approx. 10% aldosterone-18-glucuronide, approx. 40% tetrahydroaldosterone (main metabolite, metabolized in the liver) and at least approx. 50% non-identifiable metabolites.

- **Aldosterone in urine**

Material: 10 ml urine

Preanalytics: 24 h collection period, urine must be adjusted with HCl or glacial acetic acid to pH 4-5. Please indicate collected urine quantity!

TAT: 7-10 days*

Method: LCMS

Units: µg/24h

Ref.-range: 1.6 - 14.8

Note: As far as clinically acceptable, diuretics, antihypertensives, laxatives, potassium preparations and corticosteroids should be stopped at least 8 hours before collecting. Sodium, potassium and creatinine are further orientating laboratory parameters (in urine).



- **Aldosterone-18-Glucuronide in urine**

Material: 24h urine

Method: RIA

Units: $\mu\text{g}/24\text{h}$

Ref.-range: 3.5 - 7.5

For complete list of laboratory test offered at Freiburg Medical Laboratory, please visit
<http://www.fml-dubai.com/parameter-listings/>