



LABORATORY REPORT

NAME : MR.BC0512 REFERRED BY : SELF VISIT NO : VAMP26147889  
AGE : 40Y 0M 0D ZERO TARIFF CLIENT CODE COLLECTED ON : 21-04-2026 10:00  
GENDER : Male LAB MR# : AAMP01479168 RECEIVED ON : 21-04-2026 19:51  
OP / IP / DG # : APPROVED ON : 22-04-2026 13:55  
REPORT STATUS : Final Report



Test Name	Result	Biological Ref. Interval	Unit
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Androgen Profile

BIOCHEMISTRY

Testosterone - Free (Serum)

Testosterone - Free 24.000 5.7 - 30.7 pg/mL  
ELISA

Interpretation:

Testosterone circulates in blood bound to three proteins: sex hormone binding globulin (SHBG, 60-80%), albumin and cortisol binding globulin. About 1 - 2% of the total circulating testosterone remains unbound or free. Measurement of free testosterone permits the estimation of the biologically active hormone. Free testosterone determination is recommended to overcome the influences caused by variations in transport proteins on the total testosterone concentration. High concentration of SHBG (as seen in obesity, advanced age etc) may mask true deficit in testosterone levels. In Polycystic Ovarian Syndrome and related conditions, there is often significant insulin resistance, which is associated with low SHBG levels. Consequently, bioavailable or free testosterone levels may be more significantly elevated.

Clinical Use

- As second-level test for suspected increases or decreases in physiologically active testosterone
- To assess androgen status in cases with suspected or known sex hormone-binding globulin-binding abnormalities
  - To assess functional circulating testosterone in early pubertal boys and older men
  - To assess functional circulating testosterone in women with symptoms or signs of hyperandrogenism but normal total testosterone levels

Testosterone - Total (Serum)

Testosterone - Total 4.65 2.80-8.0 ng/mL  
ECLIA

Interpretation:

In men testosterone is synthesized almost exclusively by the leydig cells of testis. Most of the circulation testosterone is bound to carrier proteins. in women, small quantities of testosterone are formed in the ovaries

- Determination of testosterone in woman is helpful in diagnosis of
- Polycystic ovaries (Stein – Leventhal syndrome)
- Management of hirsutism & virilisation in females

In men reduced production:

- Hypogonadism
- Oestrogen therapy
- Chromosome aberrations (as in Klinefelter's syndrome)
- Liver cirrhosis
- Delayed puberty

Increased production:



AMPATH  
Central Reference Labor  
Door No. 1-100/1/CCH N  
Serilingampally  
Hyderabad



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### Androgen Profile

- Precocious puberty
- Congenital adrenal hyperplasia

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**Androgen Profile**

**Sex Hormone Binding Globulin (SHBG) (Serum)**

Sex Hormone Binding Globulin (SHBG) ECLIA	25.00	18.3-54.1	nmol/L
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**Interpretation:**

**INTERPRETATIONS OF SHBG:**

Sex hormone-binding globulin (SHBG) is the blood transport protein for testosterone and estradiol (E2). SHBG is produced mainly by the liver and its synthesis and secretion are regulated by estrogen and negatively influenced by liver fat content and inflammatory cytokines.

**Decreased SHBG serum levels are seen in:**

1. Elevated androgen levels are present or where the effect of androgen on its target organs is excessive.
2. Inflammation and in case of a diet leading to fat build-up in the liver e.g. rich in monosaccharides, particularly fructose.
3. It correlates with cardiovascular disease risk, type 2 diabetes as well as breast cancer.
4. Hypothyroidism, polycystic ovarian syndrome, obesity, hirsutism, elevated androgen levels, alopecia, and acromegaly

**Elevated SHBG levels can be seen in:**

1. Elderly men
2. Hyperthyroidism and cirrhosis
3. Oral contraceptives or antiepileptic drugs are taken
4. Pregnant women have markedly higher SHBG serum concentrations due to their increased estrogen production.





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Androgen Profile

Dihydrotestosterone (DHT) (Serum)

Dihydrotestosterone (DHT) ELISA	356.00	143 - 842	pg/mL
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Interpretation:

The principal prostatic androgen is dihydrotestosterone (DHT). DHT is generated by reduction of testosterone by 5-alpha reductase. It exerts full androgenic effect on the certain target tissues such as hair follicles and external genitalia. DHT should serve as the primary marker of peripheral androgen production. However, because it is metabolized rapidly and has a very high affinity for sex hormone-binding globulin (SHBG), DHT does not reflect peripheral androgen action. Instead, its distal metabolite, 3-alpha, 17-beta-androstane-3,17-diol glucuronide, serves as a better marker of peripheral androgen action.

Patients taking 5-alpha reductase inhibitor have decreased dihydrotestosterone (DHT) serum levels.

Patients with genetic 5-alpha reductase deficiency (a rare disease) also have reduced DHT and its metabolites. They fail to develop male genitalia and appear to be phenotypic females.

Levels of DHT remain normal with aging, despite a decrease in the plasma testosterone, and are not elevated in benign prostatic hyperplasia.

Patients with benign prostatic hyperplasia (BPH) or prostatic cancer may not have elevated dihydrotestosterone (DHT) levels even though growth of the prostate gland may be stimulated by DHT.

Free androgen Index (FAI) (Serum)

Testosterone - Total ECLIA	4.60	2.80-8.0	ng/mL
Sex Hormone Binding Globulin (SHBG) ECLIA	26.00	18.3-54.1	nmol/L
Free androgen Index (FAI) Calculation	63.85	30-140	

Interpretation:

Androgen index (AI) is a useful indicator of an abnormal androgen status. The AI is often increased in severe acne, male androgenic alopecia (balding), hirsutism, and other conditions in which a normal total testosterone level is found with a low SHBG level. In non-obese, non-hirsute oligomenorrheic women, an elevated AI during the early follicular phase is reported to be a sensitive and specific indicator of Polycystic ovarian disease (PCOD).

Androstenedione (Serum)

Androstenedione CLIA	2.40	0.7 - 3.6	ng/mL
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Androgen Profile  
Interpretation:

1. This is a major adrenal androgen also produced by the testes and ovaries.
2. It is increased in polycystic ovarian disease, hirsutism, virilization, congenital adrenal hyperplasia, adrenal and ovarian tumors and Cushing's disease, pregnancy and exercise .
3. It is decreased in Addison's disease.

*Sanjeeta*

Dr. Sanjeeta  
MBBS, MD (Biochemistry)  
Consultant Biochemist

Disclaimer:

1. All results released pertain to the specimen as received by the lab for testing and under the assumption that the patient indicated or identified on the bill/test requisition form is the owner of the specimen.
2. Clinical details and consent forms, especially in Genetic testing, histopathology, as well as wherever applicable, are mandatory to be accompanied with the test requisition form. The non-availability of such information may lead to delay in reporting as well as misinterpretation of test results. The lab will not be responsible for any such delays or misinterpretations thereof.
3. Test results are dependent on the quality of the sample received by the lab. In case the samples are preprocessed elsewhere (e.g., paraffin blocks), results may be compromised.
4. Tests are performed as per the schedule given in the test listing and in any unforeseen circumstances, report delivery may be affected.
5. Test results may show inter-laboratory as well as intra-laboratory variations as per the acceptable norms.
6. Genetic reports as well as reports of other tests should be correlated with clinical details and other available test reports by a qualified medical practitioner. Genetic counselling is advised in genetic test reports by a qualified genetic counsellor, medical practitioner or both.
7. Samples will be discarded post processing after a specified period as per the laboratory's retention policy. Kindly get in touch with the lab for more information.
8. If accidental damage, loss, or destruction of the specimen is not attributable to any direct or negligent act or omission on the part of Ampath Labs or its employees, Ampath shall in no event be liable. Ampath lab's liability for a lack of services, or other mistakes and omissions, shall be restricted to the amount of the patient's payment for the pertinent laboratory services.

