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

MC-2751

AMPATH
ACCURATE DIAGNOSTICS, AMERICAN STANDARDS.

## LABORATORY REPORT

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|---|---|---|---|---|---|
| **NAME** | **: MR.BC0865** | REFERRED BY | : SELF | VISIT NO | : VAMP26148126 |
| AGE | : 40Y 0M 0D | ZERO TARIFF CLIENT CODE | | COLLECTED ON | : 21-04-2026 10:00 |
| GENDER | : Male | **LAB MR#** | **: AAMP01479405** | RECEIVED ON | : 21-04-2026 19:51 |
| OP / IP / DG # | : | | | APPROVED ON | : 22-04-2026 18:05 |
| | | | | REPORT STATUS | : Final Report |

| Test Name | Result | Biological Ref. Interval | Unit |
|---|---|---|---|
| **Hirsutism Evaluation Panel Iii** | | | |
| | **BIOCHEMISTRY** | | |
| **Dehydroepiandrosterone (DHEA)** *(Serum)* | | | |
| Dehydroepiandrosterone (DHEA)<br>*ELISA* | 4.25 | 1.28 - 9.21 | ng/mL |
| **Dehydroepiandrosterone Sulphate, DHEA-S** *(Serum)* | | | |
| Dehydroepiandrosterone Sulphate, DHEA-S<br>*ECLIA* | 328.00 | 88.90 - 427.00 | µg/dL |

**Interpretation:**

DHEAS is a steroid hormone synthesized from cholesterol in zona reticularis and broad fascia of adrenal cortex. DHEAS is an excellent indicator of adrenal cortex androgen production. Elevated DHEAS seen in adrenocortical carcinoma Cushing's disease, congenital adrenal hyperplasia. Decreased levels seen in adrenal insufficiency due do primary adrenal insufficiency in hirsute females, increased DHEAS levels have been associated with virilising adrenal tumours patients with polycystic ovary syndrome having elevated levels of DHEAS suggesting an adrenal androgen contribution to the defect in this disorder

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| **Testosterone - Free** *(Serum)* | | | |
| Testosterone - Free<br>*ELISA* | 21.200 | 5.7 - 30.7 | pg/mL |

**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

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| **Testosterone - Total** *(Serum)* | | | |
| Testosterone - Total<br>*ECLIA* | 4.25 | 2.80-8.0 | ng/mL |



**Sin No: 20385423**

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### Hirsutism Evaluation Panel Iii

**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:**

- Precocious puberty
- Congenital adrenal hyperplasia

### Leutinizing Hormone,LH *(Serum)*

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| Leutinizing Hormone,LH<br>*ECLIA* | 4.85 | 1.7 - 8.6 | mIU/mL |

**Interpretation:**

A glycoprotein gonadotropic hormone secreted by anterior pituitary that acts with FSH to promote ovulation and androgen and progesterone production.
Elevated levels of LH:
-Primary gonadal failure in both males and females.
-Precocious puberty
-Menopause
-Primary hypogonadism in males.
Decreased in pituitary or hypothalamus insufficiency.

### Follicle Stimulating Hormone, FSH *(Serum)*

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|---|---|---|---|
| Follicle Stimulating Hormone, FSH<br>*ECLIA* | 6.6 | 1.5 - 12.40 | mIU/mL |

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| **Hirsutism Evaluation Panel Iii** | | | |
| **Sex Hormone Binding Globulin (SHBG)** *(Serum)* | | | |
| Sex Hormone Binding Globulin (SHBG)<br>*ECLIA* | 45.00 | 18.3-54.1 | nmol/L |

### 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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| **Hirsutism Evaluation Panel Iii** | | | |
| **17 - Alpha- Hydroxy Progesterone** *(Serum)* | | | |
| 17 - Alpha- Hydroxy Progesterone<br>*ELISA* | 8.52 | 2.7 - 19.9 | ng/mL |

**Interpretation:**

Measurements of levels of 17α-OHP are useful in the evaluation of patients with suspected congenital adrenal hyperplasia as the typical enzymes that are defective, namely 21-hydroxylase and 11β-hydroxylase, lead to a build-up of 17α-OHP. In contrast, the rare patient with 17α-hydroxylase deficiency will have very low or undetectable levels of 17α-OHP. 17α-OHP levels can also be used to measure contribution of progestational activity of the corpus luteum during pregnancy as progesterone but note, 17α-OHP is also contributed by the placenta

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| **Androstenedione** *(Serum)* | | | |
| Androstenedione<br>*CLIA* | 2.45 | 0.7 - 3.6 | ng/mL |

**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 Cushings disease,pregnancy and exercise .
3. It is decreased in Addison's disease.

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| **Free androgen Index (FAI)** *(Serum)* | | | |
| Testosterone - Total<br>*ECLIA* | 4.25 | 2.80-8.0 | ng/mL |
| Sex Hormone Binding Globulin (SHBG)<br>*ECLIA* | 45.00 | 18.3-54.1 | nmol/L |
| Free androgen Index (FAI)<br>*Calculation* | 32.77 | 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).

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| **Dihydrotestosterone (DHT)** *(Serum)* | | | |
| Dihydrotestosterone (DHT) | 642.00 | 143 - 842 | pg/mL |



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**Hirsutism Evaluation Panel Iii**
*ELISA*

**Interpretation:**

The principal prostatic androgen is dihydrotestosterone (DHT). DHT is generated by reduction of testosterone by 5-alpha reductase. It exert 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-androstanediol 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.

Sanjeeta

**Dr. Sanjeeta**
**MBBS,MD (Biochemistry)**
**Consultant Biochemist**





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**Hirsutism Evaluation Panel Iii**

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.



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