



## Free Testosterone ELISA

### Steroid Hormones

Competitive enzyme immunoassay for quantitative determination of Free Testosterone in human serum or plasma. Measurement of testosterone is used in the diagnosis and treatment of disorders involving the male sex hormones (androgens), including primary and secondary hypogonadism, delayed or precocious puberty and impotence. In females, disorders include hirsutism (excessive hair) and virilisation (masculinisation) due to tumours, polycystic ovaries and adrenogenital syndromes.

Testosterone (17 $\beta$ -OH-4-androstene-3-one) is a steroid hormone from the androgen group and is considered to be the principle androgen found in circulation of mature male mammals<sup>1</sup>.

In males, testosterone is synthesised and secreted by the Leydig cells located in the interstitium of the testis. In females, it is produced in various locations such as the ovaries, adrenal gland and peripheral tissues, with additional production due to inter-conversion from other steroid hormones. The secretion of testosterone is regulated by luteinising hormone (LH). Testosterone is found in circulation predominantly linked to carrier proteins, the most common of which being sex-hormone binding protein (SHBG).

Testosterone plays a key part in the development of reproductive tissues and secondary sex characteristics in men. There is an observed and well documented circadian variation of testosterone levels in men, with the circulating concentration being higher in the morning and declining throughout the day<sup>2</sup>. Testosterone levels also decline in ageing males (andropause) and are often associated with loss of muscle and bone mass, leading to osteoporosis, loss of libido, erectile dysfunction, depression and impaired cognitive function<sup>3</sup>.

Measurement of free testosterone can be considered useful in the diagnosis of several conditions including androgen deficiency in men and androgen excess in women<sup>4</sup>. Assessment of free testosterone levels may prove beneficial<sup>5</sup> and may avoid an incorrect diagnosis of hypogonadism in cases when low concentrations of total testosterone are determined and alterations of SHBG are suspected.

## Features and benefits

- Monoclonal Antibody for better reproducibility and specificity
- High sensitivity
- Less interferences of matrix effect in samples
- All reagents are supplied ready to use
- High correlation with Equilibrium Dialysis - MS

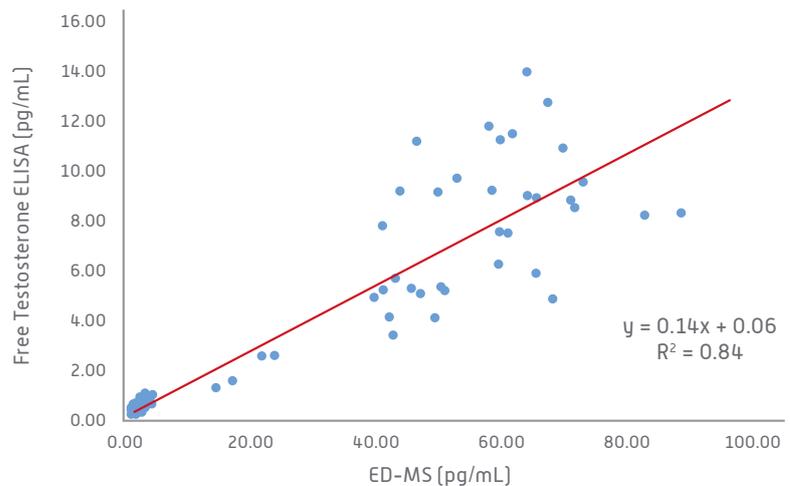
## Specifications

Format	ELISA
Calibrators	Ready To Use – 6 vials – 1 mL each – 6 concentration levels
Controls	Ready To Use – 2 vials – 1 mL each
Assay Range	0.2-100 pg/mL
Sensitivity	0.04 pg/mL
Sample Volume	20 µL
Sample Type	Serum / Plasma

## Method Comparison

### Free Testosterone ELISA vs Equilibrium Dialysis-MS

66 samples from healthy patients were assessed with both Free Testosterone ELISA and Equilibrium Dialysis-MS.



## Ordering information

Product Name	Description	Code
Free Testosterone ELISA	96 Wells	DK0015

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## Complementary Products

Product Name	Description	Code
Testosterone ELISA	96 Wells	DK0002
SHBG	96 wells	DK0087
Androstenedione ELISA	96 wells	DK0008
DHEA	96 wells	DK0124

## References

1. Jamerson JL, de Kretser D, Marshall JC and De Groot L.J. Endocrinology – adult and pediatric 6th edition. pp 368-374
2. Brambilla DJ, Matsumoto AM, Araujo AB and McKinlay JB. The Effect of Diurnal Variation on Clinical Measurement of Serum Testosterone and Other Sex Hormone Levels in Men. J Clin Endocrinol Metab. 2009 Mar; 94(3): 907-913
3. Rajfer J. Decreased Testosterone in the Aging Male. Rev Urol. 2003;5(suppl 1):S1-S2
4. Shea JL, Wong PV, Chen Y. Free testosterone: clinical utility and important analytical aspects of measurement. Adv Clin Chem. 2014;63:59-84.
5. Diver MJ. Analytical and physiological factors affecting the interpretation of serum testosterone concentration in men. Ann Clin Biochem. 2006 Jan;43(Pt 1):3-12.