

TEST: PROSTATE SPECIFIC ANTIGEN (PSA)

PRINCIPLE:

Prostate cancer is the most common type of cancer found in men in the United States, and is the second leading cause of cancer deaths among American men. ¹ As with other cancers, it is more successfully treated if diagnosed early.

PSA is a glycoprotein with a molecular weight of approximately 34,000 Daltons. It is found in normal, benign hyperplastic and malignant prostatic tissue as well as in prostatic fluid and seminal plasma. In serum, PSA exists in several different forms. However, only free and alpha-1-antichymotrypsin (ACT)-complexed PSA are immunologically active. The VITROS PSA assay measures total PSA (free and ACT-complexed PSA).

Elevated serum PSA concentrations are found in men with prostate cancer, benign prostatic hypertrophy (BHP) or inflammatory conditions of other adjacent genitourinary tissues, but not in apparently healthy men or in men with cancers other than prostate cancer. ⁴ Measurement of serum PSA by itself is not recommended as a screening procedure for the diagnosis of cancer because elevated PSA levels are also observed in patients with benign prostatic hypertrophy.

When employed for the management of prostate cancer patients, serial measurement of PSA is useful in detecting residual tumor and recurrent cancer after radical prostatectomy. PSA has been demonstrated to be an accurate marker for monitoring advancing clinical stage in untreated patients ⁷ and for monitoring response to therapy by radical prostatectomy, radiation therapy and anti-androgen therapy. PSA is also important in determining the potential and actual effectiveness of surgery or other therapies.

SPECIMEN REQUIREMENTS:

2ml serum collected in a red top tube with no additive or in a serum separator tube (gel barrier). Store in the refrigerator at 2°-8° for up to 7 days. For long term storage, freeze at -20° C or below. Avoid thaw freeze cycles.

METHOD: Enhanced Chemiluminence

REFERENCES:

1. Wang MC, Papsidero LD, Kuriyama M et al. Prostate antigen: a new potential marker for prostatic cancer. *The Prostate*. 2:89-96; 1981.
2. Papsidero LD, Wang MC, Valenzuela LA et al. A Prostate Antigen in Sera of Prostatic Cancer Patients. *Cancer Res*. 40:2428-2432;1980.
3. Oesterling JE. Prostate specific antigen: a critical assessment of the most useful tumor for Adenocarcinoma of the prostate. *J Urol* 145:907-923;1991.

Normal range: < 4.0 ng/ml

Turnaround time: 1 day