

## Testosterone ELISA (Microtiter Plate)

Enzyme-Linked Immunosorbent Assay for the Determination of Testosterone in Water Samples

Product No. 900TES



### Importance of Testosterone Determination

Testosterone is one of the most important androgens secreted into the bloodstream and is synthesized from pregnenolone which is itself formed from cholesterol. In adult humans approximately 5 mg of testosterone are synthesized per day and circulate in plasma predominantly bound to proteins, including specific sex hormone binding globulin (SHBG) and nonspecific proteins such as albumin. It is believed that the bioavailable testosterone includes the free steroid and the albumin bound steroid and these equal about 35% of the total testosterone. Testosterone is the main androgen secreted by the Leydig cells of the testes and effects both primary and secondary sexual development such as muscle mass and sex drive. Steroid hormones such as Testosterone can be found in some environmental samples such as groundwater and near sewage plants, thus requiring cautious monitoring.

The Testosterone ELISA allows the determination of 40 samples in duplicate determination. Only a few mL of sample are required. The test can be performed in about 3 hours.

### Performance Data

**Test range:** The range of detection for Testosterone in water samples is 7.81-2,000 pg/mL. The middle of the test (50% B/B<sub>0</sub>) is at about 400 pg/mL. Determinations close to the middle of the tests give the most accurate results.

**Test reproducibility:** Coefficients of variation (CVs) for standards: <10%, CVs for samples: <15%.

Cross-reactivities:	Testosterone 100% (per definition)
19-hydroxytestosterone	14.6%
Androstenedione	7.2%
Dehydroepiandrosterone	0.72%
Estradiol	0.40%
Dihydrotestosterone	<0.001%
Estriol	<0.001%
Estrone	<0.001%
Progesterone	<0.001%

Cross-reactivities with other hormone classes have not been observed.

**General Limited Warranty:** Abraxis LLC warrants the products manufactured by the Company, against defects and workmanship when used in accordance with the applicable instructions for a period not to extend beyond the product's printed expiration date. Abraxis makes no other warranty, expressed or implied. There is no warranty of merchantability or fitness for a particular purpose.

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### 1. General Description

The Testosterone ELISA is an immunoassay for the quantitative and sensitive detection of Testosterone, a steroid hormone. This test is suitable for the quantitative and/or qualitative detection of Testosterone in water samples.

### 2. Safety Instructions

The standard stock supplied with the test kit contains the steroid Testosterone. Avoid contact of solutions with skin and mucous membranes. If these reagents come in contact with the skin, wash with water. Consult state, local and federal regulations for proper disposal of all reagents.

### 3. Storage and Stability

The Testosterone ELISA should to be stored in the refrigerator (4-8°C). The solutions have to be allowed to reach room temperature (20-25°C) before use. Reagents may be used until the expiration date on the box.

### 4. Test Principle

The test is based on the recognition of Testosterone by a specific monoclonal antibody. Testosterone present in the sample and a testosterone-enzyme-conjugate compete for the binding sites of the antibodies. After a washing step and addition of the substrate solution a color signal is produced. The intensity of the yellow color produced is inversely proportional to the concentration of the Testosterone present in the sample. The color reaction is stopped after a specified time and the color is evaluated using an ELISA reader.

### 5. Limitations of the Testosterone ELISA, Possible Test Interference

Numerous organic and inorganic compounds commonly found in water samples have been tested and found not to interfere with this test. However, due to the high variability of compounds that might be found in water samples, test interferences caused by matrix effects can't be completely excluded. Mistakes in handling the test also can cause errors. Possible sources for such errors can be:

Inadequate storage conditions of the test kit, wrong pipetting sequence or inaccurate volumes of the reagents, too long or too short incubation times during the immune and/or substrate reaction, extreme outside temperatures during the test performance (lower than 10°C or higher than 30°C).

The Abraxis Testosterone ELISA kit provides screening results. As with any analytical technique (GC, HPLC, etc.) positive samples requiring some action should be confirmed by an alternative method.

