

TEST: ESTRADIOL**PRINCIPLE:**

Estradiol is produced by the adrenals, placenta, and testes and is the principal estrogen secreted by the ovaries. Over 98% of circulating estradiol is bound to serum proteins, principally sex hormone-binding globulin (SHBG). Metabolic clearance of estradiol is affected by conversion to estrone, and by hydroxylation and conjugation with sulfate or glucuronide. Estradiol normally exerts negative feedback control on gonadotropin release; however, as estradiol production accelerates with the rapid growth of the dominant follicle, this feedback becomes positive, causing a surge in LH secretion and ovulation to occur. The measurement of estradiol is useful in assessing a variety of menstrual dysfunctions including delayed puberty, amenorrhoea and menopause.

SPECIMEN REQUIREMENTS:

2ml serum collected in a red top tube with no additive or in a serum separator tube (gel barrier). Serum should be separated from the clot as soon as possible to avoid hemolysis. Store at 2-8°C for 2 days. For long term storage, freeze at -20° C. Avoid repeat freeze-thaw cycles.

METHOD: Enhanced Chemiluminescence

REFERENCES:

1. Yen SSC, Lein A. The Apparent Paradox of the Negative and Positive Feedback Control System on Gonadotropin Secretion. *Am J Obstet Gynecol.* 126:942-954.

Normal Range:

Normal Female Follicular: 26.6-161 pg/ml
Normal pre-ovulatory peak: 187-382 pg/ml
Normal Female Luteal: 32.7-201 pg/ml
Postmenopausal Female: 5.37-38.4 pg/ml

Turnaround Time: 1 day