



TEST: Luteinizing Hormone (LH)

**PRINCIPLE:**

LH is a dimeric glycoprotein hormone secreted by the anterior pituitary in response to hypothalamic gonadotrophin releasing hormone. The  $\alpha$ -subunit is common to other glycoprotein hormones, while the  $\beta$ -subunit, which confers biological activity, has some homology with that of human chorionic gonadotrophin. During the menstrual cycle, follicle stimulating hormone (FSH) stimulates growth of the ovarian follicle which, when mature, ovulates in response to a surge of LH and, to a lesser extent, of FSH. Ovarian steroids are the primary negative feedback control for LH secretion. At menopause, reduced ovarian negative feedback results in elevated LH concentrations. LH concentrations also tend to be elevated in women of pre-menopausal age who experience ovarian failure, or whose ovaries failed to mature during puberty.

**SPECIMEN REQUIREMENTS:**

2 ml serum from blood collected in red top tube without additive or in a serum separator tube with gel barrier. Separate the serum from the clot to avoid hemolysis: red top tube – transfer serum into plastic transport vial, gel tube – spin. Transport to the lab at room temperature. Store at room temperature for up to 8h, refrigerate for up to 48h. Store frozen at  $-20^{\circ}\text{C}$  or below for up to 30 days. Avoid repeated freeze-thaw cycles.

**METHOD:**

Enhanced Chemiluminescence.

**REFERENCES:**

1. Carlsen RB et al. Human chorionic gonadotrophin. Linear amino acid sequence of the beta subunit. *J Biol Chem.* 248: 6810-6827; 1973.
2. Short RV. The control of menstruation. *Br J Hosp Med.* 7: 552-555; 1972.
3. Hillier SG. Current Concepts of the Roles of Follicle-Stimulating and Luteinizing Hormone in Folliculogenesis. *Human Reproduction.* 9:188-191; 1994.

**Normal Range:**

Normal Female Mid Follicular Phase:	2.12-10.89 mIU/ml
Normal Female Mid Cycle Peak:	19.18-103.03 mIU/ml
Normal Mid Luteal Phase:	1.20-12.86 mIU/ml
Postmenopausal Female:	10.87-58.64 mIU/ml
Normal Male:	1.24-8.62 mIU/ml

**Turnaround Time:** 3 days