

TEST: PROGESTERONE

PRINCIPLE:

Progesterone (4-pregnen-3,20-dione) is one of the 21 carbon steroids secreted by the corpus luteum of the ovary in females during the normal menstrual cycle. It is also produced in low concentrations by the adrenal cortex in both males and females. In pregnancy the placenta is the major source of progesterone after the seventh gestational week.

Progesterone has two main biological functions. First, it transforms the estrogen stimulated endometrium into the secretory phase, which allows implantation of the fertilized ovum. Secondly, it sustains the pregnancy by decreasing uterine contractility.

During the follicular phase progesterone concentrations are low prior to the mid-cycle gonadotropin surge. Progesterone concentrations in the range 0.3-3.5 nmol/L have been measured the day before the LH peak. Immediately after the LH surge, concentrations begin to rise rapidly and reach maximum levels at the middle of the luteal phase. During a normal luteal phase progesterone concentration are between 3.9-80 nmol/L and the peak level should exceed 25 nmol/L.

Measurements of maternal progesterone levels have been suggested for the clinical assessment of threatening abortion, hydatidiform mole and rhesus isoimmunisation.

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 Chemiluminescence

REFERENCES:

1. Cooke, I.D. (1976): In Loraine, J.A. and Bell, E.T. (eds): Hormone assays and their clinical application. Churchill Livingstone, Edinburgh, London and New York, 4th edition, pp 447-518.

Normal Range: Female:

Follicular Phase	0.39-5.40 ng/ml
Periovulatory	1.23-18.7 ng/ml
Mid-Luteal Phase	19.1-76.2 ng/ml
Luteal Phase	3.25-71.2 ng/ml
Post Menopausal	Less than 0.7 ng/ml

Pregnancy:

First Trimester	11.0 – 45.0 ng/ml
Second Trimester	26.0 – 89.0 ng/ml
Third Trimester	48.0 – 423.0 ng/ml

Males

Less than 1.4 ng/ml

Turnaround Time: 1 day