

Division of Laboratory Medicine

Biochemistry

Prolactin (PRL)

General information

Prolactin is a hormone secreted from the anterior pituitary. Its principal physiological action is to initiate and sustain lactation. Prolactin secretion is controlled by the hypothalamus through the secretion of dopamine, which inhibits the process.

The commonest causes of hyperprolactinaemia include stress, pregnancy, drugs, prolactinoma/other pituitary tumours, hypothyroidism and chronic renal failure.

Medications That May Cause Hyperprolactinemia¹

Antipsychotics (neuroleptics)

- Phenothiazines
- Thioxanthenes
- Butyrophenones
- Atypical antipsychotics (Risperidone)

Antidepressants

- Tricyclic and tetracyclic antidepressants
- Monoamine oxidase inhibitors
- Selective serotonin reuptake inhibitors
- Other

Opiates and cocaine

Antihypertensive medications

- Verapamil
- Methyldopa
- Reserpine

Gastrointestinal medications

- Metoclopramide
- Domperidone

Protease inhibitors

Estrogens

A rare cause of raised prolactin can be the formation of an inactive complex between prolactin and immunoglobulins (macroprolactin). The laboratory can determine the level of free monomeric prolactin in a sample using PEG precipitation.

Collection container:

Serum/Plasma

Adults: 4.9mL Serum gel (Sarstedt brown top) / LiHep Plasma (Sarstedt orange top)

Paediatrics: 1.2mL Serum (Sarstedt white top) / LiHep Plasma (sarstedt orange top)

Type and volume of sample:

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Serum/Plasma

Serum or Lithium Heparin. Minimum 1.0mL whole blood required (150uL separated serum/plasma)

Specimen transport/special precautions:

No special precautions

Laboratory Information

Method principle:

Roche automated sandwich immunoassay (Elecsys® Prolactin II)

Biological reference range or cut off:

Serum/Plasma

Age	Male reference range (mU/L)	Female reference range (mU/L)
Up to 30 days	900-6751	900-6751
31 – 60 days	689-4208	689-4208
61 – 90 days	151-2820	151-2820
91 days – 5 months	113-2813	113-2813
5 – 8 months	121-2213	121-2213
8 – 1 year	148-1105	148-1105
1 – 2 years	93-1063	96-1165
2 – 4 years	82-967	81-864
4 – 8 years	69-593	66-630
8 – 18 years	60-324	65-496
> 18 years	86-324	102-496

Turnaround times:

Serum/plasma: Same day

Clinical information

Factors known to significantly affect the results:

No common interferences. (Patients on high dose biotin (>5 mg/day), should wait until at least 8 hours following the last biotin dose).

Clinical decision points:

Refer to reference range information above

References

1) Molitch ME. Medication-induced hyperprolactinemia. Mayo Clin Proc. August 2005;80(8):1050-1057