

IONISED CALCIUM

SAMPLE REQUIRED:
Serum (1.5 mL) Fresh or Frozen

BLOOD TUBE REQUIRED:
Plain (Red Top) Tube
Note Gel Tubes are NOT suitable

Note: Ionised calcium concentrations are very sensitive to changes in sample pH. It is therefore recommended that, wherever possible, ionised calcium concentrations are assessed immediately at the time of collection (e.g using an I-Stat). If this is not possible, the protocol below should be strictly followed.

INDICATIONS:

- Further assessment of high or low serum total calcium concentration.

COLLECTION PROTOCOL:

- A 12 hour fast prior to sample collection is preferable but usually not essential.
- Blood sample must be collected and **processed anaerobically** as described below.
- Jugular venipuncture is preferred as application of a tourniquet and subsequent blood stasis may alter serum ionised calcium.
- Collect at least 3-5 mL blood directly into a plain (red top) vacutainer.
- Allow the blood to clot at room temperature (15-30 minutes).
- Centrifuge the sample and harvest the serum anaerobically as follows:
 - Using an evacuated syringe and needle, pierce through the cap of the vacutainer. Aspirate the serum, taking great care to avoid aspirating red cells.
 - Transfer the harvested serum into a second plain (red top) vacutainer, inserting the needle through the cap of the tube.
 - The tubes should not be uncapped under any circumstances.
- Ideally obtain two separate 1.5 mL aliquots of serum.
- Serum should be transported to the laboratory as soon as possible (ideally arriving at the laboratory within 48 hours). If a longer delay is anticipated then the serum should be frozen and transported to the laboratory on dry ice (contact the laboratory to arrange special collection).
- On the laboratory submission form, write the venipuncture site.

Serum should be harvested within one hour of blood collection. Delayed harvesting can lead to a falsely increased ionised calcium concentration.

As a guide, serum ionised calcium is stable for:

4 hours	at	22°C
7 days	at	4°C
6 weeks	at	-20°C

If PTH is also required on the same serum sample, note the following points (see PTH protocol):

- Submit at least 2.5 mL serum.
- Freeze the serum as soon as possible after sample collection.