

**BLOOD SCIENCES
DEPARTMENT OF CLINICAL BIOCHEMISTRY**

Title of Document: *Collection of Blood for Gastrin and Gut Hormones*
Q Pulse Reference N^o: BS/CB/DCB/PROTOCOLS/9
Authoriser: P Beresford

Version N^o: 7
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PROTOCOL FOR COLLECTION OF BLOOD FOR PLASMA GASTRIN AND GUT HORMONES

Of use in the diagnosis of gastrin-producing tumour (Zollinger Ellison syndrome) and investigation of other GI peptide producing tumours (VIP, glucagons, pancreatic polypeptide, neurotensin and somatostatin).

Background

In patients with Zollinger Ellison syndrome the fasting plasma level of the gut hormone gastrin will be raised. Food, as well as drugs to reduce acid production and previous vagotomy will also cause an increase in plasma gastrin levels. By far the commonest cause of high gastrin levels (even in active duodenal ulcer patients) is a slight degree of gastritis and relative hypochlorhydria.

Clinical Notes

- The collection conditions for a full gut hormone profile (VIP, gastrin, glucagon, pancreatic polypeptide, neurotensin and somatostatin) are identical to those for gastrin. Please write on request form either 'gastrin' or 'gastrin and gut hormones' as required. 3mL of plasma is required for the full profile.
- As both hypercalcaemia and renal failure can result in a raised gastrin level, these should be excluded before gastrin measurement is considered.
- As gastrin is an unstable analyte, the collection conditions are critical.

Patient Preparation

The patient must fast from 10 pm on the night before the test.

Decisions concerning cessation of treatment before the test will obviously depend on the circumstances, but the following advice is offered by Professor S. R. Bloom's laboratory at the Hammersmith Hospital (where the analyses are performed):

If a patient is currently receiving omeprazole (Losec) or lansoprazole (Zoton), Zollinger Ellison syndrome cannot be diagnosed. Treatment with **omeprazole (or lansoprazole) should be stopped for TWO WEEKS before the sample for gastrin is taken.**

Ideally the patient should **cease H2 antagonist treatment for 72 hours before the sample for gastrin is taken.** If this is not possible and the patient is taking an H2 antagonist at the time the sample is taken, a normal gastrin level will still exclude Zollinger Ellison syndrome. However, if a raised gastrin level is found, a repeat sample 72 hours after stopping H2 antagonist treatment may be necessary.

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Collection Procedure:

1. Contact Clinical Biochemistry laboratory (Ext 48437) to discuss the request with the Duty Biochemist.
2. You will need some ice in a sample bag or small container.
3. 2 x EDTA blood samples are required. Label the vacutainers and place on ice.
4. Take blood into the vacutainers.
5. The samples need to be **taken to the laboratory immediately on ice** so that it can be separated and the plasma frozen at once. Samples must be sent away frozen.
6. Haemolysed samples are not suitable for gastrin measurement, and it is best to check with the laboratory (Ext 38383) that the sample is satisfactory **before** letting the patient eat or go home.

Interpretation

Interpretative comments will be sent with result. To discuss contact the Laboratory.

References

1. www.sas-centre.org/specialities/hormones.html
2. Bloom SR, Long RG. Radioimmunoassay of Gut Regulatory Peptides, London, WJ Saunders 1982
3. Bloom SR, Hammond P. Endocrinology of the Gastrointestinal Tract. In: Clinical Endocrinology, Besser GM and Thornes MO (Eds) London 1994