C-Peptide/Insulin ratio

Description	C-peptide and insulin are secreted by the ß cells of the pancreas.
Indication	Investigation of the cause of hypoglycaemia.
Additional Info	Proteolytic cleavage of proinsulin prior to secretion produces the mature insulin molecule and the connecting peptide (C-peptide). C-peptide is secreted in equimolar quantities to insulin but has a longer half-life than insulin and circulates in higher molar concentrations in peripheral blood, making it less prone to fluctuations.
Concurrent Tests	Plasma glucose to confirm hypoglycaemia. Serum insulin and serum ketones where appropriate.
Dietary Requirements	N/A
Interpretation	Normal C-peptide/insulin ratio: 5.0 - 10.0 <u>Interpretation of C-peptide with concurrent plasma insulin</u>: • Raised C-peptide, raised insulin: Islet cell tumours, sulphonylurea-induced, autoimmune insulin syndrome, drug-induced. • Low C-peptide, low insulin: CRF, liver disease, non-islet cell tumours, endocrine deficiencies, drug-induced, alcohol-induced, anorexia nervosa. • Low C-peptide, raised insulin: Insulin administration, insulin receptor antibodies (IR-A).
Collection Conditions	Fasting sample (where appropriate) or sample collected during hypoglycaemic attack. <u>Inpatients</u>: Sample must be received in laboratory within 30 minutes of venepuncture. <u>External hospitals</u>: Separate serum within 30 minutes of collection and freeze immediately. Send samples frozen.
Frequency of testing	As required, contact lab for urgent analysis.