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| **Insulin** | | | |
| **Synonyms** | |  |  |
| **Clinical Indication** | |  | Insulin is released by the pancreatic B-cells in normal response to rising circulating glucose.  In the differential diagnosis of documented spontaneous hypoglycaemia; Insulin is measured alongside c-peptide and can be used to indicate either insulinoma (both insulin and c-peptide are raised) or exogenous insulin administration (insulin may be high depending on cross reactivity of exogenous insulin but c-peptide will be low). In these cases, samples will not normally be analysed unless simultaneous glucose analysis shows hypoglycaemia (,2.5 mmol/L by laboratory assay).  The use of insulin and C-peptide levels to assess endogenous insulin production in Type 2 diabetics is unreliable and should be restricted to patients awaiting renal/pancreatic transplant. |
| **Part of Profile / See Also** | |  |  |
| **Request Form** | |  | Combined Pathology manual Blood form or ICE request |
| **Availability / Frequency of Analysis** | |  | Referred test: If specific criteria is met, insulin is analysed by Synnovis Hub Laboratory, London.  www.synnovis.co.uk/our-tests/insulin |
| **Turnaround Time** | |  | 1 week if discussed with a Biochemist, assay is only run once a week at the referral laboratory. Up to 2 weeks for routine requests. |
| **Patient Preparation** | |  | For investigation of hypoglycaemia, a grey top (fluoride) sample must be taken simultaneously. |
| **Sample Requirements** | |  |  |
| **Specimen Type** |  | Fasting serum (EDTA plasma also acceptable) |
| **Volume** |  | 2 ml |
| **Container** |  | Red top serum tube  or  Yellow top (SST) tube  Large purple top (EDTA) tube  Or  Lemon top (EDTA)  Or  Paediatric EDTA (Red top – Sarstedt)  Paediatric EDTA (Pink top – BD Microtainer)  If being used in the context of hypoglycaemia, a glucose sample (grey top) must be measured in the laboratory at the same time to confirm that the patient is hypoglycaemic.  **Send samples to the laboratory for processing as soon as possible.** |
| **Reference Range & Units** | |  | No reference range is provided by the referral laboratory.  Units of measurement are pmol/L |
| **Interferences** | |  | Haemolysis interferes with the insulin method – haemolysed samples will not be sent.  The Abbott Alinity method in use at Synnovis may cross react with exogenous insulin preparations: interpret results with caution. |
| **Interpretation & Clinical**  **Decision Value (if applicable)** | |  |  |
| **References** | |  |  |
| **Test code** | |  | INS |
| **Lab Handling** | |  | Separate an aliquot (at least 500ul) ASAP and store in the frozen referrals rack at -20C. Samples are sent frozen by Global courier. |