Serum 17-hydroxyprogesterone; 17-OHP

Investigation of Congenital Adrenal Hyperplasia (CAH)

Pseudonyms: 17α-hydroxyprogesterone (17α-OHP), 17α-hydroxypregn-4-ene-3,20-dione

General information

Collection container: Serum (Sarstedt brown top 4.9 mL adults/white top 1.2 mL paediatrics) or Lithium heparin plasma (Sarstedt orange top, 4.9 mL adults/1.2 mL paediatrics)

Type and volume of sample: 0.5 mL whole blood is required as a minimum volume.

Specimen transport/special precautions: The tubes should be thoroughly mixed before transport to the lab.

Laboratory information

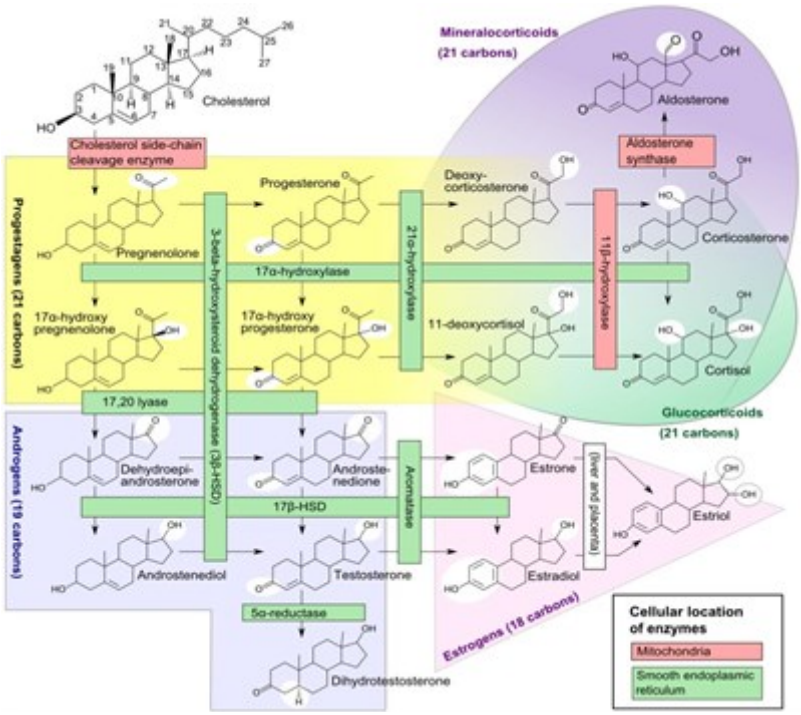
Method principle: 17α-OHP is analysed using a liquid chromatography-high resolution accurate mass- mass spectrometer (LC-HRAM-MS).

Biological reference range: 0-6 nmol/L

Turnaround time: 2 weeks

Clinical information

There are various congenital enzyme defects of the steroid biosynthesis which cause congenital adrenal hyperplasia (CAH). They are genetically different, but are all transmitted in an autosomal recessive mode. The most frequent types are the 21-hydroxylase deficiency (>90% of cases) and the 11β-hydroxylase deficiency (approx 5-8% of all cases). 17α-OH-progesterone, a precursor of cortisol, is increased in both 21- and 11β-hydroxylase deficiency, but not in other types:



Steroidogenesis. The enzymes affected in CAH are represented by one red and four green bars on the top half of the diagram

The assay has been found to have no cross-reactivity with the following compounds: DHEAS, androstenedione, testosterone, DHEA, epi-testo, cortisol, prednisolone, fludorocortisone, prednisolone, dihydrotestosterone, corticosterone, dexamethasone, cortisone, pregnenolone, 11 deoxycorticosterone, aldosterone, progesterone, 21-deoxycortisol.

Factors known to significantly affect the results:

- Samples collected into EDTA and citrate must not be used. This is due to their chelating action upon the Europium used within the assay.
- Samples should not be collected in the first 48 hours of life. 17-OHP is produced in the placenta, as a metabolite of progesterone. Levels of 17-OHP are therefore high in samples taken from normal newborn babies due to the adrenal surge at birth.
- There is menstrual variation in women with 17-OHP levels rising during the luteal phase.

(Last updated June 2019)