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Sensitive Enzyme-Immunoassay for Progesterone in Human Plasma and Saliva

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High sensitivity enzyme-immunoassays (EIA) for steroid hormones are achieved by the use of heterologous systems, sophisticated purification of the enzyme-coupled hormone by affinity chromatography (1) and a new type of methodology, the fluoro-enzyme-immunoassay (2). A *heterologous* EIA for progesterone covering the range of 0.1–10 pmol/test tube (0.03–3 ng) (3) was improved to measure high sensitivities of 10–1000 fmol (3–300 pg) by simply changing the test conditions but still using a normal photometer. Results with this EIA are shown for the measurement of physiological levels or in follow-up therapeutic treatment:

- a) *Sensitive range* (10–1000 fmol) for determination in human plasma and in saliva. Control of treatment of infertility. The level in saliva is only about 1/100 compared to plasma.
- b) *normal range* (0.1–10 pmol) for determination of progesterone in pregnancy. This also seems to be

possible by direct determination in serum without extraction of the progesterone.

The values of direct assay agree well with reported hormonal levels, for example:

- 7. week 76 nmol/l (24 µg/l);
- 10. week 105 nmol/l (33 µg/l);
- 17. week 150 nmol/l (47 µg/l);
- 29. week 225 nmol/l (70 µg/l);
- 38. week 550 nmol/l (170 µg/l).

References

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