Abstract:

A description is given of a novel liquid phase immunoassay for the measurement of testosterone in peripheral venous plasma from men and women. The procedure involves: (i) competitive binding of the analyte and tritiated antigen to specific antibodies; (ii) enzymatic conjugation of the free ligand with glucuronic acid; and (iii) separation of the antibody-bound and free ligand by partition of the reactants into an organic and aqueous phase. The technique has been called ligand differentiation immunoassay (LIDIA). The mean sensitivity was 5 pg/tube (equivalent to 0.35 nmol/l female plasma; 0.87 nmol/l male plasma). The mean reagent blank (+/- SD) was 0.24 (0.12) nmol/l female plasma; 0.61 (0.30) nmol/l male plasma. A precision profile gave values less than 50%; the within batch variation was less than 8.3% and the between batch variation over three months was 12.3%. An accuracy profile between the second and penultimate points on the calibration curve gave values between 77 and 103%. The correlation coefficient 'r' between LIDIA and a heterogeneous radioimmunoassay was 0.92 when applied to plasma from men and 0.95 to samples from women.