515

A SIMPLE AND DIRECT RADIOIMMUNOASSAY FOR SERUM AND URINARY METANEPHRINE.

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The concentration of metanephrine in serum and urine are measured by several methods such as colorimetry, fluorometry, gas-chromatography-mass spectrometry and hyperformance liquid chromatography method. However, those methods need long time for pre-treatment and are very intricate. Therefore, we developed a simple, direct and specific radioimmunoassay for serum and urinary metanephrine, in which we used ^{125}I-synephrine and specific antiserum generated in rabbit by injecting with metanephrine conjugated with bovine serum albumin as described by Grota and Brown.
The sensitivity of the assay was 2 pg/tube. Intra- and Inter- assay coefficients of variation were 2.6-7.8 % and 5.0-9.6 %, respectively. The recoveries of metanephrine added at two levels of 250 pg/ml and 500 pg/ml to ten serum samples and ten urine samples (hydrolyzed and diluted) were 96.7 and 108 % in serum, and 94.8 and 103 % in urine, respectively. Normal values of serum metanephrine were 40.3 ± 25.8 pg/ml (mean ± 5.0) from 20 normal subjects. Normal values of 24 hour urinary metanephrine excretion were 12.5 ± 6.7 ug/day from 24 normal subjects. Serum metanephrine values for 7 patients with pheochromocytoma were 210-628 pg/ml. Urinary metanephrine values for 9 patients with phechromocytoma were 8.7-302 ug/day.

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