Spectrophotometric determination of platinum and palladium with 1,5-diphenylcarbazide

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Spektralphotometrische Bestimmung von Platin und Palladium mit 1,5-Diphenylcarbazid

The separation procedure for Pt and Pd as outlined in a preceding paper [1] has now been combined with a spectrophotometric method for determination employing 1,5-diphenylcarbazide. 30–90 µg/25 ml of Pt and 30–85 µg/25 ml of Pd have been determined with errors in the range of 1–3%. Beer's law was obeyed for 1–4 µg/ml of Pt and 1.2–4 µg/ml of Pd. Molar absorptivities were $3.58 \times 10^3 \text{ l} \cdot \text{mol}^{-1} \cdot \text{cm}^{-1}$ and $4.83 \times 10^3 \text{ l} \cdot \text{mol}^{-1} \cdot \text{cm}^{-1}$ for Pt and Pd, respectively. Interferences were observed in the presence of Cr(III), Co(II), Ni(II), Fe(III), Rh(III) and Ir(III).

Working procedure. Carry out the separation according to the technique already described [1]. Take 3 ml of the eluent for the

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determination of Pt and 5 ml for the determination of Pd. Add 1 ml of HCl (1 mol/l) and 3 ml 8% $\text{CH}_3\text{COONH}_4$ to the solutions.

In case of Pt, add 3 ml of 0.6% diphenylcarbazide (in acetone), heat for 20 min on a water bath, transfer to a separating funnel, wash with 1 ml portions of chloroform, add 8 ml of chloroform, shake for 1 min and repeat that twice. Transfer into a 25 ml flask, dilute to the mark with chloroform and measure the absorbance at 565 nm against a reference blank. Keep the pH at about 5.

In case of Pd, add 5 ml of 0.6% diphenylcarbazide solution, heat for 60 min on a water bath, transfer into a separating funnel, add chloroform, shake for 1 min and repeat twice. Transfer into a flask, dilute and measure at 570 nm, keeping the pH at 5.

Reference

1. Brajter K, Slonawska K (1986) *Fresenius Z Anal Chem* 323:145

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Erratum

Principles of biomedical RMs and methods

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On page 637 of the above publication a wrong figure (Fig. 2) has erroneously been inserted. The correct figure is shown hereunder.

Fig. 2. S-Bilirubin. Correlation between method means (µmol/l). Each mean value represents results of assaying lyophilised bovine serum in at last ten laboratories, all using the same analytical procedure. In all about thirty alternative procedures are represented