matrix effects (1, 2), so that the individual effects can be studied and better understood. Users of other brands of reagent-strip tests for cholesterol are cautioned to investigate the effect of azide on their results before including it in their specimens, controls, and calibrators.

References


Cyclosporin A, a fungal metabolite with immunosuppressive activity, is widely used in the prevention of graft vs host disease in allogeneic bone marrow diseases and in the prevention of graft rejection after organ transplantation. We have developed a selective and isotropic liquid-chromatographic method for the routine determination of cyclosporin A in whole blood after a rapid liquid-liquid extraction of a small volume of sample.

To 300 μL of appropriate calibration standard or unknown whole blood in a glass centrifuge tube, add 100 μL of cyclosporin D (1 mg/L in acetonitrile) as internal standard, 300 μL of 100 mmol/L NaOH reagent, and 3 mL of diethyl ether. Vortex-mix for 2 min and centrifuge. Draw off the ether layer, and evaporate it. Add 200 μL of a mixture of methanol/0.05 mol/L HCl (6/4, by vol) to each residue, followed by 1 mL of n-hexane. Mix and centrifuge. A 20-μL aliquot of the extract, injected into a 25 cm × 4 mm Nucleosil octyl 5-μm-particle column heated at 72 °C, is eluted with a mixture of acetonitrile/0.01 mol/L phosphate buffer, pH 5.5 (65/35, by vol), at a flow rate of 1 mL/min. Detection is set at 210 nm.

Fig. 1. Chromatograms of (A) drug-free whole blood and (B) whole blood specimen from a renal transplant recipient containing cyclosporin A (Cy A) 176 μg/L.

The chromatographic run is complete within 10 min (Figure 1). The detection limit is 25 μg/L. Between-run CVs range from 2.3% to 6.2%; analytical recovery is 92.1% ± 6.3%.

The principal advantage of our method is that the volume of sample is 300 μL of whole blood instead of 1 or 2 mL required in the other liquid–chromatographic methods (1–3) with equivalent sensitivity (25 μg/L). This semi-micro procedure is suitable for routine monitoring of cyclosporin A in whole blood in pediatric transplantations.

We thank Sandoz-France for supplying cyclosporin A and D.

References