Widnes, Lancs., U.K.) was digested on a boiling-water bath with 1 M-HCl (1 litre) for 1 h, collected on a filter and washed with water (8 litres), triturated with methanol (600 ml), refiltered and 'dried' at room temperature. It was reactivated by heating for 1 h at about 255°C at 2 mmHg pressure (cf. Evans & Shoppee, 1953). The product (0.1 g) was packed into columns (internal diam. 0.25 cm) in methanol and the anions (0.5–2 mg of sodium or ammonium salts) put on in methanol. Methanol (about 5 ml) eluted non-anionic impurities and the anions were then obtained by elution with a mixture of methanol (5 ml) and aqueous ammonia (0.1 ml, analytical quality, 'sp.gr. 0.88'). The total amount of NH_4Cl obtained by thus eluting a 'blank' column with ammoniacal methanol was determined (for one batch of $\text{Al}_2\text{O}_3/\text{HCl}$ it was 17.32 mg of $\text{NH}_4\text{Cl/g}$), and for i.r. spectroscopy of anionic organic compounds in 'test' runs Na_2CO_3 was added in amount sufficient to destroy no more than

about 90% of the NH_4^+ ion. This ion, in KBr, gives absorption bands at (maxima) about 3.1 and 7.1 μm , which do not interfere with bands important for the identification of steroid conjugates. Bands due to excess of carbonate did so interfere and were avoided.

The use of protonated alumina as an anion-exchanger has been previously noted (e.g. Lewis, 1956); it cannot contribute organic contaminants. An equivalent of Cl^- is displaced from $\text{Al}_2\text{O}_3/\text{HCl}$ for each anionic equivalent and can be used for analysis.

Satisfactory i.r. spectra have thus been obtained in the identification of bile salt mixtures from various animals, chloroform-methanol-aq. ammonia systems being used for t.l.c. (Subbiah & Kuksis, 1968).

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DEMONSTRATION

The Analysis of Serum Lipoproteins by 'Crossed Electrophoresis'

By PATRICIA A. WILKINSON and G. L. MILLS
(Courtauld Institute of Biochemistry, The Middlesex Hospital Medical School, London W1P 5PR, U.K.)

A method has been developed for the analysis of serum lipoproteins by means of a modification of the Laurell (1965) technique of electrophoresis, with

antisera specific for the human apolipoproteins. By this means it is possible to distinguish the superimposed compounds that form the profile of β -lipoproteins and to improve the characterization of the hyperlipoproteinaemias. The analyses also provide support for the theory of lipoprotein families (Alaupovic, 1971).

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