## The Separation of Mixed Phosphatides

SIR,—Chromatographic methods for separating phosphatide mixtures have largely superseded the solvent fractionation and complex formation methods. Separations have been achieved using cellulose, silica, alumina and magnesium acid silicate. In the preparation of egg lecithin described by Hanahan, Rodbell and Turner[1] and modified by Saunders[2], alumina is used to remove the cephalins from the mixed phosphatides. However, this treatment requires a large quantity of fine alumina powder and involves extensive washing of the powder if high losses of lecithin are to be avoided.

To simplify the separation of the cephalin fraction we have examined the possibility of replacing alumina by an anion exchange resin. Mixed egg phosphatides were dissolved in methanol to give a 2·5 per cent solution. This was passed through a column of Dowex 1 × 7·5 resin in the carbonate form. The effluent contained much ninhydrin-reacting material and so this high cross-linked resin was replaced by a more porous one, Dowex 1 × 4. A column of the carbonate form of the resin removed all ninhydrin reacting materials and also all colouring matter from the phosphatide solution. But the product contained a considerable amount of ether-insoluble phosphatide, and this was probably lysolecithin formed by hydrolysis of the lecithin on the column. This difficulty was overcome by using the bicarbonate form of the resin.

We have found that a column containing about 50 g. of the bicarbonate form of Dowex 1 × 4 50–100 mesh completely removes the cephalins from 7g. of mixed egg phosphatides, prepared by acetone precipitation. The solution can be run rapidly through the column and only a small amount of washing is necessary to give a recovery of 5·8 g. of cephalin-free phosphatides. This process is much quicker than the alumina method and more suitable for large-scale work since a free-running column is used which can easily be washed. In addition the resin column can be regenerated and used again.

The separation has been found to be equally effective with yeast, soya-bean, ground-nut and cotton-seed phosphatides.

J. PERRIN.
L. SAUNDERS.

Department of Pharmaceutical Chemistry,
The School of Pharmacy,
University of London,
Brunswick Square, W.C.1.

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### REFERENCES

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