Microapparatus for lipid methanolysis

For the application of methanolysis according to MORGAN, HANAHAN AND EKHOLM[1] we have developed a microapparatus in our laboratory, with which the whole operation can be carried out without transporting the solution and with a minimum of loss. Another advantage of the apparatus is that its individual parts can be used in other operations with small quantities of various substances.

Description of the apparatus

The microapparatus consists of three main parts as illustrated in Fig. 1. Part I is essentially a separating funnel with a volume of approximately 5 ml, part II is a receiver tapered off to a capillary of 3 mm I.D. and part III is an evaporating device. The apparatus is provided with standardised ground joints 12/25.

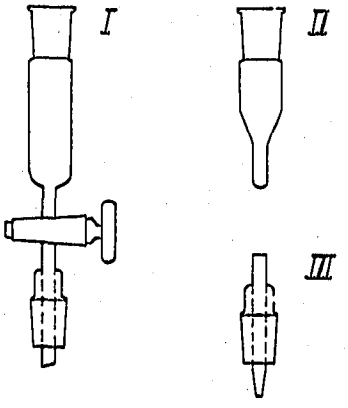

Fig. 1. Microapparatus for lipid methanolysis.

Method

A sample of the lipid dissolved in a minimum amount of chloroform is put into the funnel (I) and 1 ml 0.5 *N* KOH in methanol is added. Methanolysis is carried out at a laboratory temperature of 25°. The time required for completing the reaction depends on the type of lipid used. Reaction is stopped by adding an equivalent amount of 6 *N* HCl. Then 2 ml distilled water and 2 ml of chloroform are added. The mixture is thoroughly shaken and after separation of the layers, the bottom layer of chloroform is led into the affixed receiver(II). Next, the receiver is separated from I and connected to the evaporating device(III), a nitrogen feeder is attached and the receiver placed in a water bath heated to 70°. After evaporation of the chloroform the sample is dissolved in a suitable solvent and introduced into the gas chromatograph with a microsyringe. For quantitative purposes the capillary part of the receiver may be calibrated. Sometimes it may be advantageous to apply the chloroform solution of the methyl esters formed to the gas chromatograph.

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1 T. E. MORGAN, D. J. HANAHAN AND J. EKHOLM, *Federation Proc.*, 22 (1963) 414.

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