(Continued from page 459A)

being superior to some of the other techniques. It has been our experience that many important variables are involved which are only briefly mentioned or even omitted in the literature. It is therefore possible to follow the procedures exactly as reported, and yet the support may not be properly silane-treated.

While the methods used for the silanization are important, too often the preliminary treatment of the support is neglected. We have examined many of the variables and found that a few are particularly important.

Proper evaluation of the silane-treated support is important; the common test to determine whether or not all particles float in water is inadequate. A support which passes this test may still cause catalytic decomposition of the sample being analyzed.

The detailed procedure for preparing a satisfactory support will be described and use of this support in analyzing steroids and pesticides will be illustrated.

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SIMPLIFIED MICRO-OZONOLYSIS PROCEDURES FOR QUANTITATIVE DETERMINATION OF DOUBLE BOND POSITIONS

V. L. Davison and H. J. Dutton

Direct injection of ozonized fatty esters into the heated inlet port of a gas chromatograph offers a one-step procedure for decomposing ozonides and for analyzing the resulting aldehydic fragments to determine double bond positions. In this manner microliter samples of ozonides, prepared on any convenient scale, may be analyzed.

Acidic functional groups, formed during thermal cleavage, have been effectively eliminated by inserting a short column, containing well-oxidized zinc granules or zinc oxide on an inert support, between the injector port exit and the fractionating column.

A microreactor has been developed in which 5 μl may be successively ozonized, thermally cleaved and injected without sample transfer and attendant losses. This procedure provides an easy and rapid analysis; it also permits analyzing samples available only in limited amounts.

When either the direct injection of ozonides or the microreactor procedure was used with a temperature-programmed gas chromatograph, equipped with a column containing a mixed polyester-silicone liquid phase, effective separation was achieved for mono- and difunctional aldehydes from 3 to 16 carbons in length.

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PLASMALOGENS IN PHOSPHOLIPIDS OF CHICKEN MUSCLE

C. Y. Peng and L. R. Dugan

The phosphoglycerides phosphatidyl choline, phosphatidyl ethanolamine, and phosphatidyl serine from the lipids of white and dark meat chicken muscle were found to contain varying amounts of plasmalogens. Qualitative evaluation was made by colorimetric methods, thin-layer chromatography and column chromatography. Quantitative evaluation was accomplished by a procedure involving iodination and by gravimetric analysis. The fatty aldehyde moieties of the plasmalogens were determined by gas-liquid chromatography of the dimethylacetal derivative.

The plasmalogen content of white meat phospholipids was greater than that of the dark meat phospholipids. Phosphatidyl ethanolamine was found in relatively greater amounts than phosphatidyl choline or phosphatidyl serine. The major aldehydes found were palmitaldehyde, stearaldehyde, oleylaldehyde, and capraldehyde with palmitaldehyde being predominant.

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AVIDIN INHIBITION OF LONG-CHAIN FATTY ACID SYNTHESIS IN MITOCHONDRIA

J. P. Jordan and E. B. Harris

The effect of avidin on the synthesis of long-chain fatty acids was studied using a sonically solubilized enzyme preparation from rat liver mitochondria. Using acetate-1-C^{14} or acetyl-1-C^{14}-CoA as substrate, the avidin concentration was varied from 0 to 300μg. Nearly maximum inhibition was observed in the presence of 100 μg of avidin and increased very little at 300 μg. This represented a reduction of approximately 47% in the synthesis of fatty acids.

The effect of avidin on the synthesis of particular fatty acids was studied by measuring the incorporation of C^{14} into individual fatty acids which were separated by gas-liquid chromatography. The relationship of avidin sensitivity to *de novo* synthesis and elongation was studied by decarboxylation of palmitic and stearic acids and by permanganate-periodate oxidation of palmitoleic and oleic acids.

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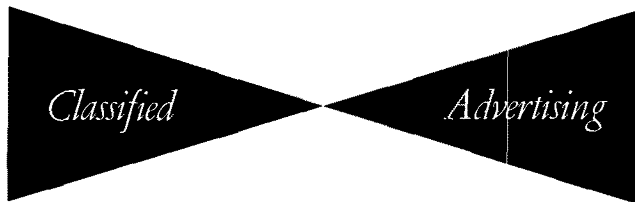
METABOLISM OF THE ALKOXY, ALKENYL, AND DIACYL ETHANOLAMINE PHOSPHOLIPIDS IN BRAINS OF ADULT RATS

L. A. Horrocks and G. B. Ansell

Adult rat brain phospholipids contain 13% diacyl glycerylphosphorylethanolamine, 23% alkenyl acyl GPE (ethanolamine plasmalogen), and 3.1% alkoxy acyl GPE. Some aspects of the metabolism of these types of phospholipid were studied in vivo after intracerebral injection of C^{14}-ethanolamine. The ethanolamine phospholipids were separated from the other brain lipids by DEAE cellulose chromatography and specific activities determined after mild alkaline and acid hydrolysis (Horrocks and Ansell, Biochem. J., in press).

At all times studied the specific activities were diacyl GPE > alkoxy acyl GPE > alkenyl acyl GPE. Thus the ethanolamine plasmalogens are not precursors of alkoxy acyl GPE. The possibility of alkoxy acyl GPE being a precursor of alkenyl acyl GPE and the significance of these compounds in membranes will be discussed.

(Continued on page 462A)



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