

G.C. analysis of plasma free fatty acids

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## Plasma Free Fatty Acids by G.C.

Free fatty acids are extracted from the plasma using heptane/isopropanol (30:70) (1) and separated from other lipids by thin layer chromatography on silica gel plates developed in petroleum ether/ethyl ether/acetic acid (80:20:1 v/v/v). The free fatty acid band is visualized using rhodamine 6G (0.1% in ethanol), scraped from the TLC plate, and methylated with  $\text{BF}_3$ /methanol(2) without elution from the silica gel.

The fatty acid methyl esters are analyzed by gas chromatography using an Agilent 7890 gas chromatograph equipped with flame ionization detector and a capillary column (SP2380, 0.25 mm x 30 m, 0.20  $\mu\text{m}$  film, Supelco, Bellefonte, PA). Helium is used as a carrier gas. The oven temperature is programmed from 160 °C to 230 °C at 4 °C/min. Fatty acid methyl esters are identified by comparing the retention times to those of known standards. Inclusion of a pentadecanoic acid (15:0) internal standard permits quantitation of the amount of FFA in the sample.

## References

1. Ko, H., and Royer, M. E. 1974. [A gas-liquid chromatographic assay for plasma free fatty acids](#). J. Chrom. 88: 253-263.
2. Morrison, W. R., and Smith, L. M. 1964. [Preparation of fatty acid methyl esters and dimethylacetal from lipids with boron trifluoride-methanol](#). J. Lipid Res. 5: 600-608.

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