

Gas Chromatography of Sympathomimetic Amines

Sir:

Methods for the separation and identification of microquantities of sympathomimetic amines are of great importance for work in pharmacy, pharmacology, and toxicology. Although the literature in this field is extensive, there is still a need for a simple and rapid method that permits positive identification and lends itself to quantitative analysis.

This communication reports the separation and identification of 11 sympathomimetic amines by gas-liquid chromatography at temperatures ranging from 104° for the nonphenolic to 135° for the phenolic amines. A Barber Colman model 15 gas chromatograph equipped with an argon ionization detector has been used for this work. A suitable column is prepared from Gas-Chrom P, 100 to 140-mesh, coated with about 1% of silicone rubber SE-30. A typical sample is 1.0 μ l. of a solution containing 0.5 to 1.0% of each amine. A mixture of six commonly used nonphenolic amines dissolved in chloroform gives five distinct peaks, ephedrine and pseudoephedrine being eluted together (Fig. 1). However, the two latter amines can be separated by using acetone as the solvent. Pseudoephedrine reacts relatively rapidly with acetone to produce an addition product, whereas the reaction between ephedrine and acetone is very slow.

Several sympathomimetic amines react with ketones. The reaction products produce sharp,

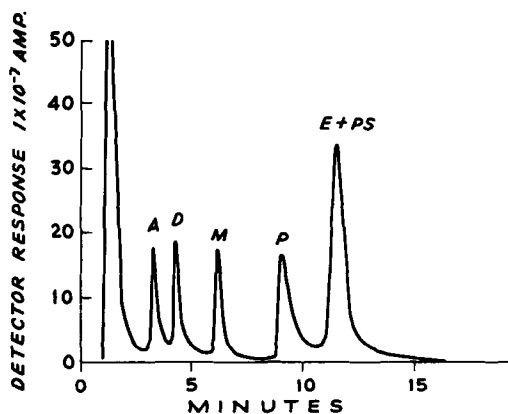


Fig. 1.—Gas chromatogram of six sympathomimetic amines on silicone rubber SE-30, 1.15%. Temp., 104°; column, 8 feet long, 3 mm. i.d.; pressure, 20 p.s.i.; flow rate, 22.5 ml./min. A, amphetamine; D, methamphetamine; M, mephentermine; P, phenylpropanolamine; E, ephedrine; PS, pseudoephedrine.

symmetrical peaks, suitable for quantitative estimation. The compounds are readily identified on the basis of the relative retention values for the free amines and their ketone derivatives.

A complete report will be published shortly.

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Occurrence of Psilocin in *Psilocybe baeocystis*

Sir:

Psilocybe baeocystis Singer and Smith is a comparatively small, nondescript agaric belonging to the stirps cyanescens of the section Caerulescentes of the genus *Psilocybe* (1). As such, it might be expected to produce cerebral mycetism following ingestion; indeed, three recent cases of poisoning have been reliably attributed to this species (2). The nature of the

active principle(s) in this mushroom has not previously been determined, probably due to its restricted habitat which appears to be limited to western Oregon.

Recently, several dried carpophores of *P. baeocystis*, collected on October 30, 1960 from a lawn in Portland by C. Goetz, were made available to us through the courtesy of Mrs. H. J. Oswald. The identity of the specimens was verified by Prof. D. E. Stuntz, Department of Botany, University of Washington.

Samples of the dried carpophores were extracted with cold 70% methanol and the extract