

Measurements that measure up



are important to everyone who needs quality.

When you measure how do you know your results are right? Link up to National Standards. The National Bureau of Standards has over 900 different Standard Reference Materials that can help you calibrate instruments and check on measurement accuracy.

If Quality measurements are important to you and you want more information phone or write for a free catalog on Standard Reference Materials.

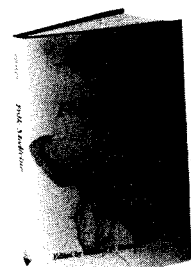
Telephone (301) 975-OSRM (6776)

Office of Standard Reference Materials
Room B-311, Chemistry Building
National Bureau of Standards
Gaithersburg, MD 20899



CIRCLE 108 ON READER SERVICE CARD

Folk Medicine The Art and the Science



New!

Richard P. Steiner,
Editor

215 pages Clothbound
(1985)
LC 85-22904
ISBN 0-8412-0939-1
US & Canada \$22.95
Export \$27.95

Order from:
**American Chemical
Society**
Distribution Office Dept.
99
1155 Sixteenth St., N.W.
Washington, DC 20036
or CALL TOLL FREE
800-424-6747
and use your credit card!

Takes the mystery out of miracle cures. Explores the medical practices of nonwestern cultures to establish a scientific basis for the successes of folk remedies. Explains why western medical researchers are increasingly turning their attention to folk medicine for new drugs. Brings together work from many countries and a variety of cultures.

CONTENTS

Aztec Sources of Some Mexican Folk Medicine • Zuni Indian Medicine: Folklore or Pharmacology, Science or Sorcery? • Ayurveda: The Traditional Medicine of India • Fijian Medicinal Plants • Medicinal Plants of Papua New Guinea • Australian Medicinal Plants • Plants Used in African Traditional Medicine • Antithrombotic Agent of Garlic: A Lesson from 5000 Years of Folk Medicine • Scientific Basis of the Therapeutic Effects of Ginseng • Anticancer Chinese Drugs: Structure-Activity Relationships • Some Recent Biological Characterizations of Chinese Herbal Preparations • Bioactive Compounds from Three Chinese Medicinal Plants • Zingiberaceous Plants • Alkaloid Components of Zizyphus Plants

types of spectra are obtained for all separated mixture components. Therefore an arrangement that maximizes the amount of sample provided to the less sensitive infrared spectrometer is best.

Instrumentation for GC/IR/MS

One question that legitimately can be asked about complex analysis systems such as GC/IR/MS is whether their cost and complexity can be justified by the increased analytical capabilities they provide. If expensive high-performance IR and mass spectrometers are required for success, it is not likely that the method will be widely adopted for routine mixture analysis. For example, a review that appeared late in 1982 (20) discussed GC/IR/MS analysis studies using very expensive high-performance double focusing (12) and Fourier transform mass spectrometers (19) in combination with top-of-the-line FT-IR spectrometers. Such systems involved use of close to half a million dollars' worth of equipment. Clearly they would not be practical for widespread use unless they were highly reliable and provided unique analytical power. There had been the Hirschfeld report of a system using a quadrupole mass spectrometer (18), but the only examples of relatively complex mixture analyses (peppermint oil and lacquer thinner) had relied on high-performance instruments.

Fortunately, it was at precisely that time (1983) that low-cost mass spectrometers, such as the Hewlett-Packard mass selective detector (MSD) and the Finnigan ion trap instrument (ITD), became available, and unprecedented competition in the FT-IR field resulted in the introduction of numerous moderately high-performance instruments at relatively low prices. These developments, occurring just as feasibility of GC/IR/MS had been convincingly demonstrated, laid the groundwork for the next stage of GC/IR/MS research, which would concentrate on the dual questions of data interpretation algorithms and evaluation of lower cost alternatives to the expensive prototype research systems of the preceding three years.

Complementary information from GC/IR/MS

Following the demonstrations of functional GC/IR/MS systems discussed above, there was renewed interest in evaluation of the use of complementary IR and mass spectral information for organic analysis. In our laboratory (12, 19), searches of computer-readable mass spectral and gas-phase IR spectral libraries were used for identification of mixture components. To accomplish specific identification, the same component was required to appear