CANCER RESEARCH HAS A NEW ADDRESS

Please note that the Cancer Research Editorial Office, along with the American Association for Cancer Research Headquarters Office, has moved its location. Effective September 12, 1988, our new address and phone number are:

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and NADPH, substrates are oxygenated, usually to hydroxides or epoxides; these may be active carcinogens, capable of binding to DNA and thereby initiating neoplasia. Many other enzymes have been implicated in the hydroxylation of both endogenous and xenobiotic substrates. One of these is the mixed function oxidase cytochrome P-450, so named by Omura and Sato (J. Biol. Chem., 237: 1375–1376, 1962), because it combines with carbon monoxide to form an inactive adduct with an absorption band at 450 nm. The inactive coadduct is most efficiently dissociated by light of the same wavelength, with restoration of activity. Cytochrome P-450 is located in microsomes, the cellular organelles formed by mechanical disruption of the endoplasmic reticulum and separable from other particular components by differential centrifugation.

The functional significance of cytochrome P-450 in microsomal oxidation was first discovered by a team headed by David Y. Cooper, Otto Rosenthal, and Ronald W. Estabrook at the Harrison Department of Surgery and the Johnson Foundation of the University of Pennsylvania [R. W. Estabrook, D. Y. Cooper, and O. Rosenthal, Biochem. Z., 388: 74–75, 1963; D. Y. Cooper, S. Levin, S. Narasimhulu, O. Rosenthal, and R. Estabrook, Science (Wash. DC), 147: 400–402, 1964]. They found that the carbon monoxide inhibition of the oxidative dimethylation of codeine, the hydroxylation of acetaldehyde by rat liver microsomes, and the hydroxylation of 17-hydroxypregesterone by bovine adrenocortical microsomes were relieved by light of 450 nm. Spectral and kinetic properties of these hydroxylations were entirely compatible with the enzymatic participation of cytochrome P-450.

Pictured are, bottom to top, Rosenthal, Cooper, and Estabrook. We are indebted to Dr. Cooper for the photographs.

Sidney Weinhouse