

PREFACE

For many years, folic acid, its relatives, and antifolates have been the center of much attention in one-carbon metabolism and in relation to cancer research. So much progress has occurred in the last decade in relation to cancer research and the mechanism of enzyme action as well as in the mechanism by which folate is transported that the overall subject deserves a current review.

We begin with contributions on one-carbon metabolism, the methionine cycle, and folate deficiency. The first of these papers is from J. T. Fox and P. J. Stover entitled "Folate-mediated one carbon metabolism." F. Nijhout, M. C. Reed, and C. M. Ulrich report on "Mathematical models of folate-mediated one-carbon metabolism." This is followed by a treatise on "Folate deprivation, the methionine cycle, and Alzheimer's disease" by F. Tchanchou and T. B. Shea. Authors I. Ifergan and Y. G. Assaraf complete the introductory section with "Molecular mechanisms of adaptation to folate deficiency."

The next group of papers deals with the folate transporter and receptor. "Structure and function of the reduced folate carrier: A paradigm of a major facilitator superfamily mammalian nutrient transporter" is contributed by L. H. Matherly and Z. Hou. Authors V. L. Damaraju, C. E. Cass, and M. B. Sawyer review "Renal conservation of folates: Role of folate transport proteins." C. P. Leamon and A. L. Jackman present "Exploitation of the folate receptor in the management of cancer and inflammatory disease." Another report on cancer is given by C.-O. Evans, C. Yao, D. Leborde, and N. M. Oyesiku: "Folate receptor expression in pituitary adenomas: Cellular and molecular analysis."

The third and final section concentrates on enzymes. In the first of these, E. E. Abali, N. E. Skacel, H. Celikkaya, and Y.-C. Hsieh have written on "Regulation of human dihydrofolate reductase activity and expression." S. W. Ragsdale covers "Catalysis of methyl group transfers involving tetrahydrofolate and B₁₂." "Methyltetrahydrofolate in folate-binding protein glycine N-methyltransferase" is authored by Z. Luka, J. K. Coward and J. J. McGuire review "Mechanism-based inhibitors of folylpoly- γ -glutamate synthetase and γ -glutamyl hydrolase: Control of folylpoly- γ -glutamate homeostasis as a drug target." P. Thomas and M. Fenech report on "Methyltetrahydrofolate reductase, common polymorphisms, and relation to disease." This is followed by a contribution from K. E. Christensen and R. E. McKenzie on "Mitochondrial methylenetetrahydrofolate

dehydrogenase, methylenetetrahydrofolate cyclohydrolase, and formyltetrahydrofolate synthetases." The final treatise is on "The structure and mechanism of 6-hydroxymethyl-7,8-dihydropterin pyrophosphokinase" by J. P. Derrick.

The structure on the cover comes from the Protein Data Bank and is, 1HFP, the assumed biological molecular structure of human dihydrofolate reductase from V. Cody *et al.* (1998). *Anti-Cancer Drug Des.* **13**, 307–315.

After these manuscripts have been reviewed by the editor and assembled, the Preface and front and back matter are prepared and forwarded to the publisher. Then, with the guidance of Renske van Dijk and Tari Broderick, the production process begins. In my view, Academic Press/Elsevier does a commendable job of getting these volumes into print.

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