

CONTENTS OF VOLUME 9

Number 1, January 1973

C. D. THRON. On the Analysis of Pharmacological Experiments in Terms of an Allosteric Receptor Model.....	1
B. TESTA AND P. JENNER. Circular Dichroic Determination of the Preferred Conformation of Nicotine and Related Chiral Alkaloids in Aqueous Solution.....	10
R. HAQUE, I. J. TINSLEY, AND D. SCHMEDDING. Lipid Binding and Mode of Action of Compounds of the Dichlorodiphenyltrichloroethane Type: A Proton Magnetic Resonance Study.....	17
R. W. BAKER, C. CHOTHLA, P. PAULING, AND H. P. WEBER. Molecular Structures of Hallucinogenic Substances: Lysergic Acid Diethylamide, Psilocybin, and 2,4,5-Trimethoxyamphetamine.....	23
J. T. FARROW AND R. D. O'BRIEN. Binding of Atropine and Muscarone to Rat Brain Fractions and Its Relation to the Acetylcholine Receptor.....	33
J. C. PAULSON AND W. O. MCCLURE. Inhibition of Axoplasmic Transport by Mescaline and Other Trimethoxyphenylalkylamines.....	41
A. YODA. Structure-Activity Relationships of Cardiotonic Steroids for the Inhibition of Sodium- and Potassium-Dependent Adenosine Triphosphatase. I. Dissociation Rate Constants of Various Enzyme-Cardiac Glycoside Complexes Formed in the Presence of Magnesium and Phosphate.....	51
R. H. ERLICH, D. K. STARKWEATHER, AND C. F. CHIGNELL. A Spin Label Study of Human Erythrocyte Carbonic Anhydrases B and C.....	61
V. E. REID AND M. FRIEDKIN. Thymidylate Synthetase in Mouse Erythrocytes Infected with <i>Plasmodium berghei</i>	74
J. W. CRANSTON AND R. W. RUDDON. The Inhibition of RNA Polymerase from <i>Escherichia coli</i> by 6-Chloro-8-aza-9-cyclopentylpurine.....	81
A. P. AUTOR, R. M. KASCHNITZ, J. K. HEIDEMA, AND M. J. COON. Sedimentation and Other Properties of the Reconstituted Liver Microsomal Mixed-Function Oxidase System Containing Cytochrome P-450, Reduced Triphosphopyridine Nucleotide-cytochrome P-450 Reductase, and Phosphatidylcholine.....	93
T. A. SLOTKIN AND N. KIRSHNER. Recovery of Rat Adrenal Amine Stores after Insulin Administration.....	105
T. H. JOH AND M. GOLDSTEIN. Isolation and Characterization of Multiple Forms of Phenylethanolamine-N-Methyltransferase.....	117

Number 2, March 1973

K. W. MILLER, W. D. M. PATON, R. A. SMITH, AND E. B. SMITH. The Pressure Reversal of General Anesthesia and the Critical Volume Hypothesis.....	131
K. R. CHYNOWETH, B. TERNAI, L. S. SIMERAL, AND G. E. MACIEL. Nuclear Magnetic Resonance Studies of the Conformation and Electron Distributions in Nicotine and in Acetylcholine.....	144
GILDA LOEW, JAMES TRUDELL, AND HARVEY MOTULSKY. Quantum Chemical Studies of the Metabolism of a Series of Chlorinated Ethane Anesthetics.....	152

RALPH E. STEPHENS AND ARTHUR M. ZIMMERMAN. Action of Levallophan: Macromolecular Synthesis and Cell Division.....	163
HIROYOSHI HIDAKA, TOMIKO ASANO, AND NOBUTAKA TAKEMOTO. Analogues of Fusaric (5-Butylpicolinic) Acid as Potent Inhibitors of Dopamine β -Hydroxylase	172
G. FREDERICK WOOTEN, NGUYEN B. THOA, IRWIN J. KOPIN, AND JULIUS AXELROD. Enhanced Release of Dopamine β -Hydroxylase and Norepinephrine from Sympathetic Nerves by Dibutyryl Cyclic Adenosine 3',5'-Monophosphate and Theophylline.....	178
TAKEO DEGUCHI. Role of the Beta Adrenergic Receptor in the Elevation of Adenosine Cyclic 3',5'-Monophosphate and Induction of Serotonin N-Acetyltransferase in Rat Pineal Glands.....	184
R. JULIAN S. DUNCAN. The Inhibition of Alcohol and Aldehyde Dehydrogenases by Propranolol.....	191
JOHANNES EVERSE. The Specific Binding of Vitamin A Acid to Equine Liver Alcohol Dehydrogenase.....	199
DONALD J. BIRKETT. Mechanism of Inactivation of Rabbit Muscle of Glyceraldehyde 3-Phosphate Dehydrogenase by Ethacrylic Acid.....	209
M. D. MAINES AND M. W. ANDERS. Reconstitution of Carbon Monoxide-Binding Particles after Removal of Heme by Serum Albumin.....	219
KENNETH BALKOW AND MARCO RABINOVITZ. Increased Binding of Transfer Ribonucleic Acid Species to Ribosomes under Conditions Interfering with Their Aminoacylation.....	229
G. W. LUCIER, H. B. MATTHEWS, P. E. BRUBAKER, R. KLEIN, AND O. S. McDANIEL. Effects of Methylmercury on Microsomal Mixed-Function Oxidase Components of Rodents.....	237
JIM BLANKENSHIP AND LEROY KUEHL. Effects of Phenobarbital and 3-Methylcholanthrene on Amino Acid Incorporation into Rat Liver Chromosomal Proteins.....	247
J. SEIFERT AND J. VÁCHA. Inhibition of [6- 14 C]Orotic Acid Incorporation into the Cytosine Moiety of the Ribonucleic Acid of Rat Liver Cytoplasmic Ribosomes after Phenobarbital Administration.....	259
W. F. BENEDICT, N. CONSIDINE, AND D. W. NEBERT. Genetic Differences in Aryl Hydrocarbon Hydroxylase Induction and Benzo[α]pyrene-Produced Tumorigenesis in the Mouse.....	266
SHORT COMMUNICATION	
T. TOBIN, T. AKERA, R. E. HOGG, AND T. M. BRODY. Ouabain Binding to Sodium- and Potassium-Dependent Adenosine Triphosphatase: Inhibition by the β , γ -Methylene Analog of Adenosine Triphosphate.....	278

Number 3, May 1973

DANIEL L. DEXTER, TOSHIKAZU OKI, AND CHARLES HEIDELBERGER. Fluorinated Pyrimidines XLII. Effect of 5-Trifluoromethyl-2'-deoxyuridine on Transcription of Vaccinia Viral Messenger Ribonucleic Acid.....	283
JAY J. GOODMAN AND VAN R. POTTER. The Effect of 5-Flurodeoxyuridine on the Synthesis of Deoxyribonucleic Acid Pyrimidines in Precancerous Rat Liver.....	297
K. A. CONKLIN, P. HEU, AND S. C. CHOU. The Effects of Antimalarial Drugs on Nucleic Acid Synthesis <i>in Vitro</i> in <i>Tetrahymena pyriformis</i>	304
JAMES L. BENNETT AND ERNEST BUEDING. Uptake of 5-Hydroxytryptamine by <i>Schistosoma mansoni</i>	311
W. C. WERKHEISER, G. B. GRINDEY, R. G. MORAN, AND C. A. NICHOL. Mathematical Simulation of the Interaction of Drugs That Inhibit Deoxyribonucleic Acid Biosynthesis.....	320

L. SPERO, A. J. SIEMENS, AND G. A. TOULIS. Tetrodotoxin Inhibition of a Na^+ Induced Conformation Change in Excitable Membranes.....	330
T. TOBIN, T. AKERA, S. I. BASKIN, AND T. M. BRODY. Calcium Ion and Sodium- and Potassium-Dependent Adenosine Triphosphatase: Its Mechanism of Inhibition and Identification of the $E_1\text{-P}$ Intermediate.....	336
KAZUYA TANIGUCHI AND SHOICHI IIDA. The Role of Phospholipids in the Binding of Ouabain to Sodium- and Potassium-Dependent Adenosine Triphosphatase.....	350
CARL L. JOHNSON, MARGARET A. GOLDSTEIN, AND ARNOLD SCHWARTZ. On the Molecular Action of Local Anesthetics I. The Mitochondrion as a Model Membrane System for Studying Local Anesthetic Action.....	360
D. W. SHOEMAN, FLOIE M. VANE, AND G. J. MANNERING. Induction of Drug Metabolism VII. Differences in P-420 Hemoproteins from Untreated and 3-Methylcholanthrene-Treated Rats.....	372
G. M. COHEN AND G. J. MANNERING. Involvement of a Hydrophobic Site in the Inhibition of the Microsomal <i>p</i> -Hydroxylation of Aniline by Alcohols.....	383
SNORRI S. THORGIERSSON, DAVID J. JOLLOW, HENRY A. SASAME, IRA GREEN, AND JERRY R. MITCHELL. The Role of Cytochrome P-450 in <i>N</i> -Hydroxylation of 2-Acetylaminofluorene.....	398
KANJI NAKATSU AND TAG E. MANSOUR. Effect of Perfusion with Different Substrates and with Isoproterenol on Phosphofructokinase Activity in the Isolated Guinea Pig Heart.....	405
IVAN KLUH, EVA SEDLÁKOVÁ, TOMISLAV BARTH, AND JOSEPH H. CORT. Neurophysin Binding of Vasopressin Analogues Altered at the NH ₂ - and COOH-Terminal Positions.....	414
SHORT COMMUNICATION	
EDWARD W. VOSS, JR., PEYTON METZEL, AND JEFFREY L. WINKELHAKE. Incorporation of Lysergic Acid Diethylamide Intermediate into Antibody Protein <i>In Vitro</i>	421

Number 4, July 1973

ANNOUNCEMENT	427
BORIS TABAKOFF, ROBERT ANDERSON, AND SPYRIDON G. A. ALIVISATOS. Enzymatic Reduction of "Biogenic" Aldehydes in Brain.....	428
TOM LLOYD AND SEYMOUR KAUFMAN. Production of Antibodies to Bovine Adrenal Tyrosine Hydroxylase: Cross-reactivity Studies with Other Pterin-Dependent Hydroxylases.....	438
J. A. FERRENDELLI, D. A. KINSCHERF, AND M. M. CHANG. Regulation of Levels of Guanosine Cyclic 3',5'-Monophosphate in the Central Nervous System: Effects of Depolarizing Agents.....	445
MARIA ALMIRA CORREIA AND G. J. MANNERING. Reduced Diphosphopyridine Nucleotide Synergism of the Reduced Triphosphopyridine Nucleotide-Dependent Mixed-Function Oxidase System of Hepatic Microsomes I. Effects of Activation and Inhibition of the Fatty Acyl Coenzyme A Desaturation System.....	455
MARIA ALMIRA CORREIA AND G. J. MANNERING. Reduced Diphosphopyridine Nucleotide Synergism of the Reduced Triphosphopyridine Nucleotide-Dependent Mixed-Function Oxidase System of Hepatic Microsomes II. Role of the Type I Drug-Binding Site of Cytochrome P-450.....	470
ROBERT KATZ, STEPHEN R. HELLER, AND ARTHUR E. JACOBSON. A Molecular Orbital Study of Norepinephrine and 3,4-Dihydroxyphenethylamine: a Reevaluation of Structure-Activity Relationships in Norepinephrine.....	486

ROBERT KATZ AND ARTHUR E. JACOBSON. A Molecular Orbital Study of 2,4,5-Trihydroxyphenethylamine and Related Polyhydroxyphenethylamines.....	495
J. LUNDSTROM, H. ONG, J. DALY, AND C. R. CREVELING. Isomers of 2,4,5-Trihydroxyphenethylamine (6-Hydroxydopamine): Long-Term Effects on the Accumulation of [³ H]-Norepinephrine in Mouse Heart <i>in Vivo</i>	505
DAVID J. LENTZ, GARY H. HENDERSON, AND EDWARD M. EYRING. Kinetics of Aqueous Iron (III) Complexation by Desferrioxamine B.....	514
JEAN-PIERRE RAYNAUD, MARIE-MADELEINE BOUTON, DANIELLE GALLET-BOURQUIN, DANIEL PHILIBERT, COLETTTE TOURNEMINE, AND GENEVIÈVE AZADIAN-BOULANGER. Comparative Study of Estrogen Action.....	520
LARRY E. HARE AND ROBERT E. HANDSCHUMACHER. Physical and Biological Properties of Acetamidino-, β -Dimethylaminopropionamidino-, and Maleyl-L-Asparaginase.....	534
J. B. LOMBARDINI AND PAUL TALALAY. Effects of Inhibitors of Adenosine Triphosphate: L-Methionine S-Adenosyltransferase on Levels of S-Adenosyl-L-methionine in Normal and Malignant Mammalian Tissues.....	542
JANUSZ B. SUSZKIW. Interaction of Selected Cholinergic Effector Molecules with Acetylcholinesterase in Physiological Eel Ringer's Solution.....	561
NEVILLE BROOKES AND ROBERT WERMAN. The Cooperativity of γ -Aminobutyric Acid Action on the Membrane of Locust Muscle Fibers.....	571
NEVILLE BROOKES, MARTIN BLANK, AND ROBERT WERMAN. The Kinetics of the Conductance Increase Produced by γ -Aminobutyric Acid at the Membrane of Locust Muscle Fibers.....	580
SHORT COMMUNICATION	
R. K. MARGOLIS, S. D. JAANUS, AND R. U. MARGOLIS. Stimulation by Acetylcholine of Sulfated Mucopolysaccharide Release from the Perfused Cat Adrenal Gland.....	590

Number 5, September 1973

JOHN N. FAIN. Inhibition of Adenosine Cyclic 3',5'-Monophosphate Accumulation in Fat Cells by Adenosine, <i>N</i> ⁶ -(Phenylisopropyl)adenosine, and Related Compounds.....	595
MICHAEL BROWNSTEIN, JUAN M. SAAVEDRA, AND JULIUS AXELROD. Control of Pineal <i>N</i> -Acetylserotonin by a <i>Beta</i> Adrenergic Receptor.....	605
TAKEO DEGUCHI AND JULIUS AXELROD. Superinduction of Serotonin <i>N</i> -Acetyltransferase and Supersensitivity of Adenyl Cyclase to Catecholamines in Denervated Pineal Gland.....	612
ALBERT KALISKER, CHARLES O. RUTLEDGE, AND JOHN P. PERKINS. Effect of Nerve Degeneration by 6-Hydroxydopamine on Cathecholamine-Stimulated Adenosine 3',5'-Monophosphate Formation in Rat Cerebral Cortex.....	619
PATRICE GUYENET, PIERRE LEFRESNE, JEAN ROSSIER, JEAN CLAUDE BEAUJOUAN, AND JACQUES GLOWINSKI. Inhibition by Hemicholinium-3 of [¹⁴ C]Acetylcholine Synthesis and [³ H]Choline High-Affinity Uptake in Rat Striatal Synaptosomes...	630
SUNGZONG KANG, CARL L. JOHNSON, AND JACK P. GREEN. Theoretical Studies on the Conformations of Psilocine and Mescaline.....	640
GILLIAN SUDLOW, DONALD J. BIRKETT, AND DENIS N. WADE. Spectroscopic Techniques in the Study of Protein Binding: The Use of 1-Anilino-8-Naphthalene-sulphonate as a Fluorescent Probe for the Study of the Binding of Iophenoxic and Iopanoic Acids to Human Serum Albumin.....	649
FRANKLIN J. ZIEVE. Effects of the Carcinogen <i>N</i> -Acetoxy-2-fluorenlyacetamide on the Template Properties of Deoxyribonucleic Acid.....	658

RONALD G. THURMAN. Induction of Hepatic Microsomal Reduced Nicotinamide Adenine Dinucleotide Phosphate-Dependent Production of Hydrogen Peroxide by Chronic Prior Treatment with Ethanol	670
THOMAS TOBIN, TAI AKERA, AND DAVID KU. Reversibility of the Interaction of Strophanthidin Bromoacetate with the Cardiotonic Steroid Binding Site of Sodium- and Potassium-Dependent Adenosine Triphosphatase	676
SHORT COMMUNICATIONS	
RAYMOND W. RUDDON, DONNA E. LUNDEEN, AND LORA E. RIKANS. Induction of Aryl Hydrocarbon Hydroxylase in Mouse 3T3 Cells: Relationship to the State of Cell Proliferation and Guanosine Cyclic 3',5'-Monophosphate	686
FRANZ OESCH, NOREEN MORRIS, JOHN W. DALY, JACQUES E. GIELEN, AND DANIEL W. NEBERT. Genetic Expression of the Induction of Epoxide Hydrase and Aryl Hydrocarbon Hydroxylase Activities in the Mouse by Phenobarbital or 3-Methylcholanthrene	692
Number 6, November 1973	
ANNOUNCEMENT	697
GEOFFERY M. COOPER AND SHELDON GREER. The Effect of Inhibition of Cytidine Deaminase by Tetrahydrouridine on the Utilization of Deoxycytidine and 5-Bromodeoxycytidine for Deoxyribonucleic Acid Synthesis	698
GEOFFREY M. COOPER AND SHELDON GREER. Phosphorylation of 5-Halogenated Deoxycytidine Analogues by Deoxycytidine Kinase	704
M. HUANG, A. K. S. HO, AND J. W. DALY. Accumulation of Adenosine Cyclic 3',5'-Monophosphate in Rat Cerebral Cortical Slices. Stimulatory Effect of <i>Alpha</i> and <i>Beta</i> Adrenergic Agents after Treatment with 6-Hydroxydopamine, 2,3,5-Trihydroxyphenethylamine, and Dihydroxytryptamines	711
ROBERT G. PENDLETON AND INA B. SNOW. The Binding Order of Substrates to Phenylethanolamine <i>N</i> -Methyltransferase	718
OTHMAN A. SHEMISA AND LEONARD A. FAHIEN. Effects of Tranquillizers on the Glutamate Dehydrogenase-Glutamate-Oxalacetate Transaminase Complex	726
ALAN POLAND AND EDWARD GLOVER. Chlorinated Dibenzo- <i>p</i> -dioxins: Potent Inducers of δ -Aminolevulinic Acid Synthetase and Aryl Hydrocarbon Hydroxylase II. A Study of the Structure-Activity Relationship	736
HANNAH O. GREEN AND THEODORE A. SLOTKIN. Reserpine-Like Effects of Harmine on Isolated Adrenal Medullary Vesicles	748
R. R. ISON, P. PARTINGTON, AND G. C. K. ROBERTS. The Conformation of Catecholamines and Related Compounds in Solution	756
ATSUNOBU YODA, SHIZUKO YODA, AND AWNI M. SARRIF. Structure-Activity Relationships of Cardiotonic Steroids for the Inhibition of Sodium- and Potassium-Dependent Adenosine Triphosphatase II. Association Rate Constants of Various Enzyme-Cardiac Glycoside Complexes	766
JOHN P. PERKINS AND MARILYN M. MOORE. Regulation of the Adenosine Cyclic 3',5'-Monophosphate Content of Rat Cerebral Cortex: Ontogenetic Development of the Responsiveness to Catecholamines and Adenosine	774
HIROSHI TONE AND CHARLES HEIDELBERGER. Fluorinated Pyrimidines XLIV. Interaction of 5-Trifluoromethyl-2'-deoxyuridine 5'-Triphosphate with Deoxyribonucleic Acid Polymerases	783
BO HELLMAN, LARS-ÅKE IDAHL, ÅKE LERNMARK, JANOVE SEHLIN, AND INGE-BERT TÄLJEDAL. Role of Thiol Groups in Insulin Release: Studies with Poorly Permeating Disulphides	792

DAVID V. GODIN AND THERESE WAN NG. Studies on the Membrane-Perturbational Effects of Drugs and Divalent Cations Utilizing Trinitrobenzenesulfonic Acid	802
H. WEINSTEIN, S. MAAYANI, S. SREBRENIK, S. COHEN, AND M. SOKOLOVSKY. Psychotomimetic Drugs as Anticholinergic Agents II. Quantum-Mechanical Study of Molecular Interaction Potentials of 1-Cyclohexylpiperidine Derivatives with the Cholinergic Receptor	820
SHORT COMMUNICATIONS	
A. C. NUNES AND B. P. SCHOENBORN. Dichloromethane and Myoglobin Function	835
INGE LA JANSSON AND JOHN B. SCHENKMAN. Evidence Against Participation of Cytochrome <i>b</i> ₅ in the Hepatic Microsomal Mixed-Function Oxidase Reaction	840
AUTHOR INDEX	846
SUBJECT INDEX	852