

# CONTENTS OF VOLUME 15

NUMBER 1, JANUARY 1979

ANNETTE DOLPHIN, JOËLLE ADRIEN, MICHEL HAMON, AND JOËL BOCKAERT. Identity of [ <sup>3</sup> H]-Dihydroalprenolol Binding Sites and $\beta$ -Adrenergic Receptors Coupled with Adenylate Cyclase in the Central Nervous System: Pharmacological Properties, Distribution and Adaptive Responsiveness. . . . .	1
GARY L. JOHNSON, HENRY R. BOURNE, MARY K. GLEASON, PHILIP COFFINO, PAUL A. INSEL, AND KENNETH L. MELMON. Isolation and Characterization of S49 Lymphoma Cells Deficient in $\beta$ -Adrenergic Receptors: Relation of Receptor Number to Activation of Adenylate Cyclase. . . . .	16
BEVERLY H. DULIS, MICHAEL A. GORDON, AND IRWIN B. WILSON. Identification of Muscarinic Binding Sites in Human Neutrophils by Direct Binding. . . . .	28
VIRENDRA K. SHARMA AND SHAILESH P. BANERJEE. Regeneration of [ <sup>3</sup> H]Ouabain Binding to (Na <sup>+</sup> + K <sup>+</sup> )-ATPase in Chemically Sympathectomized Cat Peripheral Organs. . . . .	35
GEORGE J. SIEGEL AND SUZANNE K. FOGT. Effects of Pb <sup>++</sup> and Other Divalent Cations on Ouabain Binding to <i>E. electricus</i> Electroplax (Na <sup>+</sup> + K <sup>+</sup> )-Adenosinetriphosphatase. . . . .	43
HIROYOSHI HIDAKA, TOKUO YAMAKI, TSUYOSHI TOTSUKA, AND MASAHISA ASANO. Selective Inhibitors of Ca <sup>++</sup> -Binding Modulator of Phosphodiesterase Produce Vascular Relaxation and Inhibit Actin-Myosin Interaction. . . . .	49
ANDRE DE LEAN, PETER J. MUNSON, AND DAVID RODBARD. Multi-subsite Receptors for Multivalent Ligands. Application to Drugs, Hormones, and Neurotransmitters. . . . .	60
M. SARRAZIN, J. C. SARI, M. BOURDEAUX-PONTIER, AND C. BRIAND. NMR Study of the Interactions between Flurazepam and Human Serum Albumin. . . . .	71
J. C. WAYMIRE, K. GILMER-WAYMIRE, D. NORITAKE, G. GIBSON, D. KITAYAMA, AND J. W. HAYCOCK. Induction of Tyrosine Hydroxylase and Dopamine $\beta$ -Hydroxylase in Cultured Mouse Neuroblastoma by 8Br-cAMP. Involvement of RNA and Protein Synthesis. . . . .	78
ANNE J. CULVENOR AND B. JARROTT. Reduction of Aromatic L-Amino Acid Decarboxylase Protein in Rats after Chronic Administration of <i>Alpha</i> -Methyldopa. . . . .	86
DAVID F. COUNTS, FRANCISCO J. ROJAS, AND KENNETH R. CUTRONEO. Glucocorticoids Decrease Prolyl Hydroxylase Activity without the Cellular Accumulation of Undehydroxylated Collagen. . . . .	99
MARILYN J. WATERHOUSE, YUET CHING CHIA, AND G. J. LEES. Inhibition of Human and Rat Hepatic Aminotransferase Activity with L-3,4-Dihydroxyphenylalanine by Inhibitors of Peripheral Aromatic Amino Acid Decarboxylase. . . . .	108
ATSUSHI KUROSAWA, ALESSANDRO GUIDOTTI, AND ERMINIO COSTA. Nuclear Translocation of Cyclic AMP-Dependent Protein Kinase Subunits during the Transsynaptic Activation of Gene Expression in Rat Adrenal Medulla. . . . .	115
ELMER J. RAUCKMAN, GERALD M. ROSEN, AND BARBARA B. KITCHELL. Superoxide Radical as an Intermediate in the Oxidation of Hydroxylamines by Mixed Function Amine Oxidase. . . . .	131
D. R. THAKKER, W. LEVIN, H. YAGI, D. RYAN, P. E. THOMAS, J. M. KARLE, R. E. LEHR, D. M. JERINA, AND A. H. CONNEY. Metabolism of Benzo[a]anthracene to Its Tumorigenic 3,4-Dihydrodiol. . . . .	138
F. PETER GUENGERICH AND PATRICIA S. MASON. Immunological Comparison of Hepatic and Extrahepatic Cytochromes P-450. . . . .	154
JUDITH A. O'MALLEY, SUSAN S. LEONG, JULIUS S. HOROSZEWICZ, WILLIAM A. CARTER, JAMES L. ALDERFER, AND PAUL O. P. Ts'o. Polyinosinic Acid-Polycytidylic Acid and Its Mismatched Analogues: Differential Effects on Human Cell Function. . . . .	165
<b>SHORT COMMUNICATIONS</b>	
JONAS B. GALPER AND WILLIAM A. CATTERALL. Inhibition of Sodium Channels by D600. . . . .	174

MARY J. ORTNER, ROBERT H. SIK, COLIN F. CHIGNELL, AND EDWARD A. SOKOLOSKI. A Nuclear Magnetic Resonance Study of Compound 48/80	179
MEI-HWA TU, DENNIS PERRY, AND CHIADAO CHEN. Mutagenic Effect of 7,12-Dimethylbenz[a]anthracene-epidioxide on <i>Salmonella typhimurium</i> .	189
HASAN MUKHTAR, TAHANI H. ELMAMLOUK, RICHARD M. PHILPOT, AND JOHN R. BEND. Rat Hepatic Nuclear Cytochrome P-450 and Epoxide Hydrase in Membranes Prepared by Two Methods: Similarities with the Microsomal Enzymes.	192

NUMBER 2, MARCH 1979

GREGORY WEILAND AND PALMER TAYLOR. Ligand Specificity of State Transitions in the Cholinergic Receptor: Behavior of Agonists and Antagonists	197
GREGORY WEILAND, DENNIS FRISMAN, AND PALMER TAYLOR. Affinity Labeling of the Subunits of the Membrane Associated Cholinergic Receptor	213
ROBERT S. ARONSTAM, DAVID J. TRIGGLE, AND MOHYEE E. ELDEFRAWI. Structural and Stereochemical Requirements for Muscarinic Receptor Binding	227
STANLEY L. KEELY. Prostaglandin E <sub>1</sub> Activation of Heart cAMP-dependent Protein Kinase: Apparent Dissociation of Protein Kinase Activation from Increases in Phosphorylase Activity and Contractile Force	235
D. B. A. LUNDBERG, G. R. BREESE, R. B. MAILMAN, G. D. FRYE, AND R. A. MUELLER. Depression of Some Drug-Induced <i>in Vivo</i> Changes of Cerebellar Guanosine 3',5'-Monophosphate by Control of Motor and Respiratory Responses	246
CHARLES R. FILBURN, FRANK T. COLPO, AND BERTRAM SACKTOR. Mechanism of Phenothiazine Inhibition of Ca <sup>2+</sup> -dependent Guanosine 3',5'-(cyclic) Monophosphate Phosphodiesterase of Brain	257
MARTIN CHALFIE, LAUREL SETTIPANI, AND ROBERT L. PERLMAN. The Role of Cyclic Adenosine 3',5'-Monophosphate in the Regulation of Tyrosine 3-monooxygenase Activity	263
D. KIRK WAYS AND DAVID A. ONTJES. Reversal of Persistently Stimulated Steroidogenesis by GTP and an Inhibitory Adrenocorticotropin Analogue in Adrenal Cells Pretreated with Adrenocorticotropin	271
DAVID G. JOHNSON AND CHRISTOPH DE HAËN. 2,4-Diamino-5-cyano-6-halopyridines and Analogues. A New Family of Insulin Secretagogues That Resemble Glucose in Hydrogen Bonding Possibilities	287
ELIZABETH K. KRODEL, ROBERT A. BECKMAN, AND JONATHAN B. COHEN. Identification of a Local Anesthetic Binding Site in Nicotinic Post-Synaptic Membranes Isolated from <i>Torpedo marmorata</i> Electric Tissue	294
F. M. VERONESE, R. BEVILACQUA, AND I. M. CHAIKEN. Drug-Protein Interactions: Evaluation of the Binding of Antipsychotic Drugs to Glutamate Dehydrogenase by Quantitative Affinity Chromatography	313
CHARLES E. CANTRELL, K. LEMONE YIELDING, AND KENNETH M. PRUITT. Efficiency of Photolytic Binding of Ethidium Monoazide to Nucleic Acids and Synthetic Polynucleotides	322
A. S. LIACOURAS AND E. P. ANDERSON. Uridine-Cytidine Kinase IV. Kinetics of the Competition between 5-Azacytidine and the Two Natural Substrates	331
V. H. DUVERNAY, J. M. ESSERY, T. W. DOYLE, W. T. BRADNER, AND S. T. CROOKE. The Antitumor Effects of Anthracyclines. The Importance of the Carbomethoxy-Group at Position-10 of Marcellomycin and Rudolfomycin	341
BUDDY ULLMAN AND JAN KIRSCH. Metabolism of 5-Fluorouracil in Cultured Cells. Protection from 5-Fluorouracil Cytotoxicity by Purines	357
WILLIAM C. DUNN AND JAMES D. REGAN. Inhibition of DNA Excision Repair in Human Cells by Arabinofuranosyl Cytosine: Effect on Normal and Xeroderma Pigmentosum Cells	367
ALLAN B. GRAHAM, DAVID T. PECHEY, AND GEOFFREY C. WOOD. Responses of Microsomal UDP-Glucuronyltransferase to Trypsin	375
MICHAEL G. ONDRUSEK, JOHN K. BELKNAP, AND STEVEN W. LESLIE. Effects of Acute and Chronic Barbiturate Administration on Synaptosomal Calcium Accumulation	386

ELIZABETH H. JEFFERY AND GILBERT J. MANNERING. Mechanism of the Nucleotide Pyrophosphatase Induced Distortion of Stoichiometry of TPNH Utilization and Product Formation by Hepatic Cytochrome P-450 Linked N-Demethylase System .....	396
VIOLA S. ABBOTT AND GILBERT J. MANNERING. Inhibition of Hepatic Microsomal Cytochrome P-450-Dependent Monooxygenase Reactions by Fatty Acyl CoA .....	410
JACK A. HINSON, SIDNEY D. NELSON, AND JAMES R. GILLETTE. Metabolism of [ $p$ - $^{18}O$ ]-Phenacetin: The Mechanism of Activation of Phenacetin to Reactive Metabolites in Hamsters .....	419
JOHN B. SCHENKMAN, INGELA JANSSON, GARTH POWIS, AND HERMANN KAPPUS. Active Oxygen in Liver Microsomes: Mechanism of Epinephrine Oxidation .....	428

#### SHORT COMMUNICATION

JAMES P. HARWOOD, MARIA L. DUFAU, AND KEVIN J. CATT. Differing Specificities in the Desensitization of Ovarian Adenylate Cyclase by Epinephrine and Human Chorionic Gonadotropin .....	439
--	-----

#### NUMBER 3, MAY 1979

PHILIP D. KANOF AND PAUL GREENGARD. Pharmacological Properties of Histamine-Sensitive Adenylate Cyclase from Guinea Pig Cardiac Ventricular Muscle .....	445
JOHN E. TAYLOR AND ELLIOTT RICHELSON. Desensitization of Histamine H <sub>1</sub> Receptor-Mediated Cyclic GMP Formation in Mouse Neuroblastoma Cells ..	462
HARVEY R. KASLOW, ZVI FARFEL, GARY L. JOHNSON, AND HENRY R. BOURNE. Adenylate Cyclase Assembled <i>in Vitro</i> : Cholera Toxin Substrates Determine Different Patterns of Regulation by Isoproterenol and Guanosine 5'-triphosphate .....	472
C. R. PARTINGTON AND J. W. DALY. Effect of Gangliosides on Adenylate Cyclase Activity in Rat Cerebral Cortical Membranes .....	484
EDYTHE D. LONDON AND JOSEPH T. COYLE. Specific Binding of [ $^3H$ ]Kainic Acid to Receptor Sites in Rat Brain .....	492
D. R. HOWLETT, HELEN MORRIS, AND S. R. NAHORSKI. Anomalous Properties of [ $^3H$ ]Spiperone Binding Sites in Various Areas of the Rat Limbic System .....	506
WILLIAM H. BULGER, ROSEANNA M. MUCCITELLI, AND DAVID KUPFER. Studies on the Estrogenic Activity of Chlordecone (Kepone) in the Rat: Effects on Uterine Estrogen Receptor .....	515
P. FARRUGLIA, S. SACHS, AND D. PALAIC. Effect of Angiotensinase Inhibitors on Angiotensin Receptors in Rabbit Aorta .....	525
BRITTA HEDLUND AND TAMAS BARTFAI. The Importance of Thiol- and Disulfide Groups in Agonist and Antagonist Binding to the Muscarinic Receptor .....	531
YOEL KLOOG, YAACOV EGOZI, AND MORDECHAI SOKOLOVSKY. Characterization of Muscarinic Acetylcholine Receptors from Mouse Brain: Evidence for Regional Heterogeneity and Isomerization .....	545
DONALD D. KOBLIN AND HENRY A. LESTER. Voltage-Dependent and Voltage-Independent Blockade of Acetylcholine Receptors by Local Anesthetics in <i>Electrophorus</i> Electroplaques .....	559
YOEL KLOOG, DAVIS S. HERON, AMOS D. KORCZYN, DAN I. SACHS, AND MORDECHAI SOKOLOVSKY. Muscarinic Acetylcholine Receptors in Albino Rabbit Iris-Ciliary Body .....	581
MARGUERITE LUCAS, VINCENT HOMBURGER, ANNETTE DOLPHIN, AND JOËL BOCKAERT. <i>In Vitro</i> and <i>In Vivo</i> Kinetic Analysis of the Interaction of a Norbornyl Derivative of Propranolol with $\beta$ -Adrenergic Receptors of Brain and C6 Glioma Cells; an Irreversible or Slowly Reversible Ligand .....	588
PETER F. BLACKMORE, MAHMOUD F. EL-REFAI, AND JOHN H. EXTON. $\alpha$ -Adrenergic Blockade and Inhibition of A23187 Mediated Ca <sup>2+</sup> Uptake by the Calcium Antagonist Verapamil in Rat Liver Cells .....	598
THEODORE A. SLOTKIN, MARIA SALVAGGIO, FREDERIC J. SEIDLER, AND WILLIAM L. WHITMORE. Structural Characteristics for Inhibition of [ $^3H$ ]Norepineph-	

rine Uptake into Rat Brain Synaptic Vesicles by Beta-Carboline, Indolealkylamine, Phenethylamine and <i>n</i> -Alkylamine Derivatives .....	607
L. P. SIMONSON AND J. S. CHARNOCK. The Harmala Alkaloids: Evidence for Their Complex Inhibition of the K <sup>+</sup> -Acyl Phosphatase Reaction of Membranes .....	620
HELMUT JERING AND EFRAÍN TORO-GOYCO. Effect of (-)- $\Delta^8$ Tetrahydrocannabinol on Nucleoside and Amino Acid Uptake in Reuber-H-35 Hepatoma Cells .....	627
SUMNER BURSTEIN, SHEILA A. HUNTER, AND T. SCOTT SHOUBE. Site of Inhibition of Leydig Cell Testosterone Synthesis by $\Delta^1$ -Tetrahydrocannabinol .....	633
STEPHEN BRIMIJOIN. Axonal Transport and Subcellular Distribution of Molecular Forms of Acetylcholinesterase in Rabbit Sciatic Nerve .....	641
JOEL DUNNETTE AND RICHARD WEINSHILBOUM. Human Plasma Dopamine-Beta-Hydroxylase: Variation in Thermal Stability .....	649
JANICE R. SUFRIN, A. W. COULTER, AND PAUL TALALAY. Structural and Conformational Analogues of L-Methionine as Inhibitors of the Enzymatic Synthesis of S-Adenosyl-L-Methionine. IV. Further Mono-, Bi- and Tricyclic Amino Acids .....	661
J. C. KAWALEK, A. W. ANDREWS, AND R. J. PIENTA. 1-Naphthylthiourea: A Mutagenic Rodenticide that Transforms Hamster Embryo Cells .....	678
WILLIAM A. CARTER, LESLIE R. DAVIS, JR., KAILASH C. CHADHA, AND FREDERICK H. JOHNSON, JR. Porcine Leukocyte Interferon and Antiviral Activity in Human Cells .....	685
PRISCILLA P. SAUNDERS, LIAN-YU CHAO, ROLAND K. ROBINS, AND TI LI LOO. Action of 3-Deazaguanine in <i>Escherichia coli</i> .....	691
ROKEA EL AZHARY AND GILBERT J. MANNERING. Effects of Interferon Inducing Agents (Polyribonucleosinic Acid-Polyribocytidylic Acid, Tilorone) on Hepatic Hemoproteins (Cytochrome P-450, Catalase, Tryptophan 2,3-Dioxygenase, Mitochondrial Cytochromes), Heme Metabolism and Cytochrome P-450-Linked Monooxygenase Systems .....	698
ERIC F. JOHNSON, GEORGE E. SCHWAB, AND URSULA MULLER-EBERHARD. Multiple Forms of Cytochrome P-450: Catalytic Differences Exhibited by Two Homogeneous Forms of Rabbit Cytochrome P-450 .....	708
THOMAS M. GUENTHNER, DANIEL W. NEBERT, AND RAYMOND H. MENARD. Microsomal Aryl Hydrocarbon Hydroxylase in Rat Adrenal: Regulation by ACTH but not by Polycyclic Hydrocarbons .....	719
KAM-YEE PANG, TIEN-LAN CHANG, AND KEITH W. MILLER. On the Coupling between Anesthetic Induced Membrane Fluidization and Cation Permeability in Lipid Vesicles .....	729
DAVID A. JOHNSON, NANCY M. LEE, ROGER COOKE, AND HORACE H. LOH. Ethanol-Induced Fluidization of Brain Lipid Bilayers: Required Presence of Cholesterol in Membranes for the Expression of Tolerance .....	739

#### SHORT COMMUNICATIONS

DANIEL R. DOERGE, MARK G. MCNAMEE, AND LLOYD L. INGRAHAM. Modification of Acetylcholine Receptor-Mediated Ion Permeability by Thiamine .....	747
CHARLES CHAVKIN, B. M. COX, AND AVRAM GOLDSTEIN. Stereospecific Opiate Binding in Bovine Adrenal Medulla .....	751
NICHOLAS P. SOLLENNE AND GARY E. MEANS. Characterization of a Specific Drug Binding Site of Human Serum Albumin .....	754
ERRATUM .....	758
AUTHOR INDEX FOR VOLUME 15 .....	761

The Subject Index for Volume 15 will appear in the November 1979 issue as part of a cumulative index for the year 1979.