

BIOCHEMICAL PHARMACOLOGY

AN INTERNATIONAL JOURNAL

VOLUME 47, 1994

VOLUME CONTENTS AND AUTHOR INDEX



PERGAMON

CONTENTS OF VOLUME 47

13 JANUARY 1994

NEW TARGETS FOR LONG ACTING DRUGS INVOLVING TRANSLOCATION TO THE NUCLEUS

Proceedings of the Sixth *Biochemical Pharmacology* Symposium held in Oxford,
22–23 July 1993

I Obituary—Professor Peter Alexander PhD, DSc.
1922–1993

1 Editorial

Session A: Pharmacology at the Gene Level

PIERRE M. LADURON

3 From receptor internalization to nuclear translocation.
New targets for long-term pharmacology

JENNY E. HINSHAW

15 Architecture of the nuclear pore complex and its involve-
ment in nucleocytoplasmic transport

ANNE GUIOCHON-MANTEL,
KARINE DELABRE, PIERRE LESCOP,
MARTINE PERROT-APPLANAT and
EDWIN MILGROM

21 Cytoplasmic-nuclear trafficking of progesterone receptor.
In vivo study of the mechanism of action of antiprogestins

DANIEL W. NEBERT

25 Drug-metabolizing enzymes in ligand-modulated tran-
scription

Short Communication

JOHAN NEYTS and ERIK DE CLERCQ

39 Mechanism of action of acyclic nucleoside phosphonates
against herpes virus replication

Session B: Neuropeptides

ALAIN BEAUDET, JEAN MAZELLA,
DOMINIQUE NOUËL, JOËLLE CHABRY,
MARIE-NOËLLE CASTEL,
PIERRE LADURON, PATRICK KITABGI
and MARIE-PIERRE FAURE

43 Internalization and intracellular mobilization of neuro-
tensin in neuronal cells

MARIE-NOËLLE CASTEL,
ALAIN BEAUDET and
PIERRE M. LADURON

53 Retrograde axonal transport of neurotensin in rat nigro-
striatal dopaminergic neurons. Modulation during ageing
and possible physiological role

GÉRARD MOREL

63 Internalization and nuclear localization of peptide hor-
mones

J. M. MALOTEAUX and E. HERMANS

77 Agonist-induced muscarinic cholinergic receptor internal-
ization, recycling and degradation in cultured neuronal
cells. Cellular mechanisms and role in desensitization

Short Communication

EMMANUEL HERMANS,
JEAN-NOËL OCTAVE and
JEAN-MARIE MALOTEAUX

89 Receptor mediated internalization of neurotensin in trans-
fected Chinese hamster ovary cells

Section C: Movement of Growth Factors and Their Receptors to the Nucleus

ROBERTO SOLARI, NICK SMITHERS, 93 Receptor mediated endocytosis and intracellular fate of
NICOLA KENNARD, KEITH RAY and interleukin 1
STEPHANIE GRENFELL

FELIX P. ECKENSTEIN, KARL KUZIS, 103 Cellular distribution, subcellular localization and possible
RAE NISHI, WILLIAM R. WOODWARD, functions of basic and acidic fibroblast growth factors
CHARLES MESHUL, LARRY SHERMAN
and GARY CIMENT

FRANÇOIS AMALRIC, GERARD BOUCHE, 111 Fibroblast growth factor-2 (FGF-2) in the nucleus:
HELENE BONNET, PHILIPPE BRETHENOU, translocation process and targets
ANA MARIA ROMAN,
ISABELLE TRUCHET and
NATALINA QUARTO

S. J. HOLT, P. ALEXANDER✠, 117 Epidermal growth factor induced tyrosine phosphoryl-
C. B. INMAN and D. E. DAVIES ation of nuclear proteins associated with translocation of
epidermal growth factor receptor into the nucleus

Session D: Gene Modulation

MICHAEL GREGORY PETERSON and 127 Transcription factors: a new frontier in pharmaceutical
JONATHAN L. TUPY development?

CHRISTOPH SACHSENMAIER, 129 Damage to DNA by UV light and activation of transcrip-
ADRIANA RADLER-POHL, tion factors
ANDREA MÜLLER, PETER HERRLICH
and HANS J. RAHMSDORF

VINCENT CASTRONOVO, 137 Homeobox genes: potential candidates for the transcrip-
MASAMI KUSAKA, ALAIN CHARIOT, tional control of the transformed and invasive phenotype
JACQUES GIELEN and MARK SOBEL

Short Communication

VINCENT BOURS, EMMANUEL DEJARDIN, 145 The NF- κ B transcription factor and cancer: high
FRANCINE GOUJON-LETAWE, expression of NF- κ B- and I κ B-related proteins in tumor
MARIE-PAULE MERVILLE and cell lines
VINCENT CASTRONOVO

Session E: Concluding Remarks

COLIN R. HOPKINS 151 Internalization of polypeptide growth factor receptors and
the regulation of transcription

20 JANUARY 1994**Commentary**

ERIK DE CLERCQ 155 HIV resistance to reverse transcriptase inhibitors

Rapid Communications

TAI-SHUN LIN, MEI-ZHEN LUO, 171 Antiviral activity of 2',3'-dideoxy- β -L-5-fluorocytidine
MAO-CHIN LIU, S. BALAKRISHNA PAI, (β -L-FddC) and 2',3'-dideoxy- β -L-cytidine (β -L-ddC)
GINGER E. DUTSCHMAN against hepatitis B virus and human immunodeficiency
and YUNG-CHI CHENG virus type 1 *in vitro*

R. SAPENA, D. MORIN, R. ZINI 175 Isoproterenol interacts differently with β -adrenoceptors in
and J. P. TILLEMENT astrocytes and neurons isolated from the adult rat brain

Research Papers

J. BOLDEN PEDERSEN and 179 Interpretation and analysis of receptor binding exper-
W. EDWARD LINDUP iments which yield non-linear Scatchard plots and binding
constants dependent upon receptor concentration

XIAO-MING SUN, ROGER T. SNOWDEN, 187 Changes in nuclear chromatin precede internucleosomal
DAVID DINSDALE, DNA cleavage in the induction of apoptosis by etoposide
MICHAEL G. ORMEROD and
GERALD M. COHEN

J. D. CROXTALL, C. EMMAS, 197 Tamoxifen inhibits growth of oestrogen receptor-negative
J. O. WHITE, Q. CHOUDHARY A549 cells
and R. J. FLOWER

ANITA IGNATIUS, EIKE MEINETSBERGER, WOLFRAM RAAKE and KARLHEINZ TEMPEL	203	The <i>in vitro</i> influence of sulfated bis-lactobionic acid amides on <i>O</i> ⁶ -alkylguanine-DNA alkyltransferase, DNase I, nucleic acid synthesis and chromatin structure
J. P. DE LA CRUZ, G. ORTEGA and F. SÁNCHEZ DE LA CUESTA	209	Differential effects of the pyrimido-pyrimidine derivatives, dipyridamole and mopidamol, on platelet and vascular cyclooxygenase activity
A. MASINI, D. CECCARELLI, D. GALLESI, F. GIOVANNINI and T. TRENTI	217	Lipid hydroperoxide induced mitochondrial dysfunction following acute ethanol intoxication in rats. The critical role for mitochondrial reduced glutathione
ANA GOMIS, LUIS M. GUTIERREZ, FRANCISCO SALA, SALVADOR VINIEGRA and JUAN A. REIG	225	Ruthenium red inhibits selectively chromaffin cell calcium channels
IAN F. MUSGRAVE and ROLAND SEIFERT	233	Human neutrophils and HL-60 cells do not possess α_2 -adrenoceptors
TETSUO KISO, SHIGEO ITO, TOSHIO OHTA, TADASHI ASANO and YOSHIKAZU NAKAZATO	241	Characterization of vasoactive intestinal peptide receptors in canine liver membranes
MAYUMI NAKAMURA, EINOSUKE TANAKA, SHOGO MISAWA, TSUTOMU SHIMADA, SUSUMU IMAOKA and YOSHIHIKO FUNAE	247	Trimethadione metabolism, a useful indicator for assessing hepatic drug-oxidizing capacity
RITA MUKHOPADHYAY and R. MADHUBALA	253	Antileishmanial activity and modification of hepatic xenobiotic metabolizing enzymes in golden hamster by 2(3)-tert-butyl-4-hydroxyanisole following infection with <i>Leishmania donovani</i>
JANE A. PLUMB, G. C. WISHART, A. SETANOIANS, J. G. MORRISON, T. HAMILTON, S. R. BICKNELL and S. B. KAYE	257	Identification of a multidrug resistance modulator with clinical potential by analysis of synergistic activity <i>in vitro</i> , toxicity <i>in vivo</i> and growth delay in a solid human tumour xenograft
ROGER GRIFFITHS, JOHN DUNLOP, ADRIENNE GORMAN, JEANETTE SENIOR and ANGUS GRIEVE	267	<i>L-trans</i> -Pyrrolidine-2,4-dicarboxylate and <i>cis</i> -1-amino-cyclobutane-1,3-dicarboxylate behave as transportable, competitive inhibitors of the high-affinity glutamate transporters
JIM ILEY and LUIS CONSTANTINO	275	The microsomal dealkylation of <i>N,N</i> -dialkylbenzamides
LINDSAY BROWN, RICHARD NANKERVIS, DAVID KERR and CONRAD SERNIA	281	Adrenoceptor-mediated cardiac and vascular responses in hypothyroid rats
MARTEN W. S. M. DOOPER, YKE HOEKSTRA, ADIET TIMMERMANS, JAN G. R. DE MONCHY and HENK F. KAUFFMAN	289	Potentiation of adenylyl cyclase in human peripheral blood mononuclear cells by cell-activating stimuli
MARINA CIOMEI, WILMA PASTORI, MARIANGELA MARIANI, FRANCESCO SOLA, MARIA GRANDI and NICOLA MONGELLI	295	New sulfonated distamycin A derivatives with bFGF complexing activity
ALEXEI E. MEDVEDEV, ALEXANDRA A. KIRKEL, NATALIA S. KAMYSHANSKAYA, TATYANA A. MOSKVITINA, LUDMILA N. AXENOVA, VLADIMIR Z. GORKIN, NATALIA I. ANDREEVA, SVETLANA M. GOLOVINA and MIKHAIL D. MASHKOVSKY	303	Monoamine oxidase inhibition by novel antidepressant tetrindole
JEANNETTE VÁSQUEZ-VIVAR and OHARA AUGUSTO	309	Oxidative activity of primaquine metabolites on rat erythrocytes <i>in vitro</i> and <i>in vivo</i>

RODERICK T. BUNCH, LAWRENCE F. POVIRK, MICHAEL S. ORR, JOYCE K. RANDOLPH, FRANK A. FORNARI and DAVID A. GEWIRTZ	317	Influence of amsacrine (m-AMSA) on bulk and gene-specific DNA damage and <i>c-myc</i> expression in MCF-7 breast tumor cells
ROSANGELA SOUTO PARDON and FRANÇOIS NOËL	331	Heterogeneity of ouabain binding sites in <i>Schistosoma mansoni</i> . First evidence for the presence of two (Na ⁺ + K ⁺)-ATPase isoforms in platyhelminths
KEVIN E. BRIGLE, MICHAEL J. SPINELLA, ERIC H. WESTIN and I. DAVID GOLDMAN	337	Increased expression and characterization of two distinct folate binding proteins in murine erythroleukemia cells
GERMAN R. CARANTO, KIRK H. WAIBEL, JACOB M. ASHER, ROBERTA W. LARRISON, KAREN M. BRECHT, MICHAEL B. SCHUTZ, LILY RAVEH, YACOV ASHANI, ALAN D. WOLFE, DONALD M. MAXWELL and BHUPENDRA P. DOCTOR	347	Amplification of the effectiveness of acetylcholinesterase for detoxification of organophosphorus compounds by bis-quaternary oximes
SANDRA E. DUNN and GERALD A. LEBLANC	359	Hypocholesterolemic properties of plant indoles. Inhibition of acyl-CoA:cholesterol acyltransferase activity and reduction of serum LDL/VLDL cholesterol levels by glucobrassicin derivatives
ANN H. CORY, VICENTE SAMANO, MORRIS J. ROBINS and JOSEPH G. CORY	365	2'-Deoxy-2'-methylene derivatives of adenosine, guanosine, tubercidin, cytidine and uridine as inhibitors of L1210 cell growth in culture
ZHENJUN DIWU, JÜRG ZIMMERMANN, TH. MEYER and J. WILLIAM LOWN	373	Design, synthesis and investigation of mechanisms of action of novel protein kinase C inhibitors: perylene-quinonoid pigments
AMY L. ELLIS, ELIZABETH ALTSCHULER, ELISE BALES, MICHAEL HINDS, JANICE MAYES, LAURIE SOARES, THEODORE F. ZIPF and LEONARD A. ZWELLING	387	Phorbol regulation of topoisomerases I and II in human leukemia cells. Studies in an additional cell pair sensitive or resistant to phorbol-induced differentiation
JOHN J. SKRATT, LINDSAY B. HOUGH, JULIA W. NALWALK and KIM E. BARKE	397	α -Fluoromethylhistidine-induced inhibition of brain histidine decarboxylase. Implications for the CO ₂ -trapping enzymatic method
TOAN D. NGUYEN and ANDREW T. CANADA	403	Modulation of human colonic T ₈₄ cell secretion by hydrogen peroxide
Short Communications		
THOMAS HOLLER, JOCHEN KLEIN and KONRAD LÖFFELHOLZ	411	Phospholipase C and phospholipase D are independently activated in rat hippocampal slices
PASCAL CLAUDEPIERRE, SAÏK URIEN, OLIVIER CHASSANY and JEAN-PAUL TILLEMENT	415	Analysis of free fatty acid effect on methotrexate binding to albumin
PAUL J. THORNALLEY, MALCOLM STRATH and R. J. M. WILSON	418	Antimalarial activity <i>in vitro</i> of the glyoxalase I inhibitor diester, <i>S-p</i> -bromobenzylglutathione diethyl ester
EMILY O. NGO and LOUISE M. NUTTER	421	Status of glutathione and glutathione-metabolizing enzymes in menadione-resistant human cancer cells
KAREN R. GRAVITT, NANCY E. WARD and CATHERINE A. O'BRIAN	425	Inhibition of protein kinase C by melittin: antagonism of binding interactions between melittin and the catalytic domain by active-site binding of MgATP

9 FEBRUARY 1994

Commentary

RICHARD S. JOPE and
MARY B. WILLIAMS

- 429 Lithium and brain signal transduction systems

Research Papers

MAHMOUD M. FARAG and
ELHAM M. ABDEL-MEGUID

- 443 Hepatic glutathione and lipid peroxidation in rats treated with theophylline. Effect of dose and combination with caffeine and acetaminophen

KAZUO IRITA, HIRONAO OKABE,
AKITOSHI KOGA, KAZUHEI KUROSAWA,
KUNIO TAGAWA, MASAE YAMAKAWA,
JUN-ICHI YOSHITAKE
and SHOSUKE TAKAHASHI

- 447 Carbon tetrachloride increases sinusoidal efflux of reduced and oxidized glutathione in rats

ERIC M. VAN DER AA,
ALFONS C. WOUTERSE,
JENNY H. J. COPIUS PEEREBOOM-STEGEMAN
and FRANS G. M. RUSSEL

- 453 Uptake of choline into syncytial microvillus membrane vesicles of human term placenta

ADRIENNE M. WILLIAMS
and RONALD G. DICKINSON

- 457 Studies on the reactivity of acyl glucuronides—VI. Modulation of reversible and covalent interaction of diflunisal acyl glucuronide and its isomers with human plasma protein *in vitro*

RONALD G. DICKINSON,
PETER V. BAKER and ANDREW R. KING

- 469 Studies on the reactivity of acyl glucuronides—VII. Salicyl acyl glucuronide reactivity *in vitro* and covalent binding of salicylic acid to plasma protein of humans taking aspirin

KWOK ONN WONG
and KIM PING WONG

- 477 Biosynthesis of 3'-phosphoadenosine-5'-phosphosulfate (PAPS) in rat skin

JÖRN OLIVER SASS, ADELHEID FORSTER,
KARL WALTER BOCK and HEINZ NAU

- 485 Glucuronidation and isomerization of all-*trans*- and 13-*cis*-retinoic acid by liver microsomes of phenobarbital- or 3-methylcholanthrene-treated rats

HELEN WISEMAN

- 493 The antioxidant action of a pure antioestrogen: ability to inhibit lipid peroxidation compared to tamoxifen and 17 β -oestradiol and relevance to its anticancer potential

GUDRUN E. CASSEL, SVEN-ÅKE PERSSON
and ANDERS STENSTRÖM

- 499 Effects of cyanide *in vitro* on the activity of monoamine oxidase in striatal tissue from rat and pig

MARIO FUNK, INGOLF GATH,
ALBRECHT SEIDEL,
KARL-LUDWIG PLATT, FRANZ OESCH
and HANS-DIETER ZELLER

- 505 Different enzyme kinetics during the glutathione conjugation of the four stereoisomers of the fjord-region diolepoxides of benzo[c]phenanthrene by the μ -class rat liver glutathione *S*-transferase HTP II

JÁN CHANDOGA, IVETA ROJEKOVÁ,
LADISLAV HAMPL and
GABRIEL HOCMAN

- 515 Cetaben and fibrates both influence the activities of peroxisomal enzymes in different ways

U. R. KUPPUSAMY and N. P. DAS

- 521 Potentiation of β -adrenoceptor agonist-mediated lipolysis by quercetin and fisetin in isolated rat adipocytes

MI KYONG KWAK, SANG GEON KIM,
JI YEON KWAK, RAYMOND F. NOVAK
and NAK DOO KIM

- 531 Inhibition of cytochrome P4502E1 expression by organosulfur compounds allylsulfide, allylmercaptan and allylmethylsulfide in rats

NAK DOO KIM, SANG GEON KIM and
MI KYONG KWAK

- 541 Enhanced expression of rat microsomal epoxide hydrolase gene by organosulfur compounds

YU-CHIANG LO, CHE-MING TENG,
CHIEH-FU CHEN, CHIEN-CHIH CHEN
and CHUANG-YE HONG

- 549 Magnolol and honokiol isolated from *Magnolia officinalis* protect rat heart mitochondria against lipid peroxidation

ARNO NAGELE, KLAUS FELIX and EDMUND LENGFELDER	555	Induction of oxidative stress and protection against hydrogen peroxide-mediated cytotoxicity by the superoxide dismutase-mimetic complex copper-putrescine-pyridine
STEVEN B. ABRAMSON, JOANNA LESZCZYNSKA-PIZIAK, ROBERT M. CLANCY, MARK PHILIPS and GERALD WEISSMANN	563	Inhibition of neutrophil function by aspirin-like drugs (NSAIDs): requirement for assembly of heterotrimeric G proteins in bilayer phospholipid
WILLIAM F. HODNICK, DAWN L. DUVAL and RONALD S. PARDINI	573	Inhibition of mitochondrial respiration and cyanide-stimulated generation of reactive oxygen species by selected flavonoids
Short Communications		
PETER GRAY, KATE LEWIS, ANDREW MASTA and DON PHILLIPS	581	Modulation of mustard toxicity by tacrine
IAIN G. C. ROBERTSON and RANJITH S. K. A. GAMAGE	584	Methadone: a potent inhibitor of rat liver aldehyde oxidase
FRED D. BEUSENBERG, IVÁN L. BONTA and JAN G. C. VAN AMSTERDAM	588	Cyclic-AMP level and eicosanoid release from alveolar macrophages are differentially affected by high and low dose of platelet activating factor
M. D. ESTÉVEZ, M. R. VIEYTES, M. C. LOUZAO and L. M. BOTANA	591	Effect of okadaic acid on immunologic and non-immunologic histamine release in rat mast cells
TETSURO SEKIGUCHI and TAKEAKI NAGAMINE	594	Inhibition of free radical generation by biotin
Announcements	597	

11 FEBRUARY 1994

Commentary		
ROBERTO GAMBARI and CLAUDIO NASTRUZZI	599	DNA-binding activity and biological effects of aromatic polyamides
Research Papers		
RITA MUKHOPADHYAY and R. MADHUBALA	611	Effect of antioxidants on the growth and polyamine levels of <i>Leishmania donovani</i>
EIMEAR M. O'BRIEN, KEITH F. TIPTON, JOHN M. MCCRODDEN and MOUSSA B. H. YOUDIM	617	The interactions of milacemide with monoamine oxidase
VICKI STONE, GERALD D. JOHNSON, JOANNE C. WILTON, ROGER COLEMAN and J. KEVIN CHIPMAN	625	Effect of oxidative stress and disruption of Ca^{2+} homeostasis on hepatocyte canalicular function <i>in vitro</i>
C. SERRADEIL-LE GAL, B. BOURRIÉ D. RAUFASTE, P. CARAYON, C. GARCIA, J. P. MAFFRAND, G. LE FUR and P. CASELLAS	633	Effect of a new, potent, non-peptide V_{1a} vasopressin antagonist, SR 49059, on the binding and the mitogenic activity of vasopressin on Swiss 3T3 cells
LUIGI FIUME, GIUSEPPINA DI STEFANO, CORRADO BUSI and ALESSANDRO MATTIOLI	643	A conjugate of lactosaminated poly-L-lysine with adenine arabinoside monophosphate, administered to mice by intramuscular route, accomplishes a selective delivery of the drug to the liver
H. R. LAM, G. ØSTERGAARD, S. X. GUO, O. LADEFOGED and S. C. BONDY	651	Three weeks' exposure of rats to dearomatized white spirit modifies indices of oxidative stress in brain, kidney, and liver
JACQUES JOLIVET, GERRIT JANSEN, GODEFRIDUS J. PETERS, MARIE-FRANCE PINARD and JAN. H. SCHORNAGEL	659	Leucovorin rescue of human cancer and bone marrow cells following edatrexate or methotrexate
MIGUEL LUCAS, VÍCTOR SÁNCHEZ-MARGALET, AUREO SANZ and FRANCISCA SOLANO	667	Protein kinase C activation promotes cell survival in mature lymphocytes prone to apoptosis

- TINA M. MISENHEIMER, MOGENS LUND, ANN EILEEN MILLER BAKER and J. W. SUTTIE 673 Biochemical basis of warfarin and bromadiolone resistance in the house mouse, *Mus musculus domesticus*
- JEFFREY L. AMBROSO and CRAIG HARRIS 679 Chloroquine accumulation and alterations of proteolysis and pinocytosis in the rat conceptus *in vitro*
- STEVEN W. JOHNSON, RAYMOND P. PEREZ, ANDREW K. GODWIN, ANTHONY T. YEUNG, LAURA M. HANDEL, ROBERT F. OZOLS and THOMAS C. HAMILTON 689 Role of platinum-DNA adduct formation and removal in cisplatin resistance in human ovarian cancer cell lines
- ABBA J. KASTIN, KATHY HAHN, JUDIT ERCHEGYI, JAMES E. ZADINA, LASZLO HACKLER, MURIEL PALMGREN and WILLIAM A. BANKS 699 Differential metabolism of Tyr-MIF-1 and MIF-1 in rat and human plasma
- STEVEN R. CHILDERS, TAMMY SEXTON and MARY BETH ROY 711 Effects of anandamide on cannabinoid receptors in rat brain membranes
- MITSUTERU NUMAZAWA, KOJI MIDZUHASHI and MASAO NAGAOKA 717 Metabolic aspects of the 1 β -proton and the 19-methyl group of androst-4-ene-3,6,17-trione during aromatization by placental microsomes and inactivation of aromatase
- TOSHIFUMI SHIRAGA, HIROJI MATSUDA, KAZUKO NAGASE, KAZUhide IWASAKI, KOSEI NODA, HIROSHI YAMAZAKI, TSUTOMU SHIMADA and YOSHIHIKO FUNAE 727 Metabolism of FK506, a potent immunosuppressive agent, by cytochrome P450 3A enzymes in rat, dog and human liver microsomes
- Short Communications**
- J. VAN WAUWE, M.-C. COENE, W. COOLS, J. GOOSSENS, W. LAUWERS, L. LE JEUNE, C. VAN HOVE and G. VAN NYEN 737 Liarozole fumarate inhibits the metabolism of 4-keto-all-*trans*-retinoic acid
- MICHAEL ROBIN WITT and MOGENS NIELSEN 742 Differential modulation of brain benzodiazepine receptor subtypes by ricinelaidic acid *in vitro*
- S. M. HOSSEIN SADRZADEH, PATRICIA PRICE and AMIN A. NANJI 745 Ethanol-induced changes in membrane ATPases: inhibition by iron chelation
- ABDELLAH BOUHOUTE and GUY LECLERCQ 748 Estradiol derivatives bearing the side-chain of tamoxifen antagonize the association between the estrogen receptor and calmodulin

2 MARCH 1994

Commentary

- HANS VAN GELDEREN, JOACHIM M. MAYER and BERNARD TESTA 753 Thermodynamic studies of enzyme catalysis. What can we learn about specificity and mechanism?

Research Papers

- DON P. FALLER, CATHERINE M. O'REILLY and MICHAEL P. RYAN 757 Amiloride-sensitive sodium uptake into human placental brush border membrane vesicles
- RICHARD J. WEAVER, STEPHANIE THOMPSON, GRAEME SMITH, MAURICE DICKINS, CLIFFORD R. ELCOMBE, RICHARD T. MAYER and M. DANNY BURKE 763 A comparative study of constitutive and induced alkoxy-resorufin O-dealkylation and individual cytochrome P450 forms in cynomolgus monkey (*Macaca fascicularis*), human, mouse, rat and hamster liver microsomes

SHARON A. SHELLARD, LOUISE K. HOSKING and BRIDGET T. HILL	775	Characterisation of the unusual expression of cross resistance to cisplatin in a series of etoposide-selected resistant sublines of the SuSa testicular teratoma cell line
NADIA MESKINI, GEORGES NÉMOZ, ISMAHAN OKYAYUZ-BAKLOUTI, MICHEL LAGARDE and ANNIE-FRANCE PRIGENT	781	Phosphodiesterase inhibitory profile of some related xanthine derivatives pharmacologically active on the peripheral microcirculation
BRIGITTE BERTHON, GEORGES TAUDOU, LAURENT COMBETTES, WIENIA CZARLEWSKI, ANNICK CARMİ-LEROY, FRANÇOISE MARCHAND and ANNA WEYER	789	<i>In vitro</i> inhibition, by loratadine and descarboxyethoxylo-ratadine, of histamine release from human basophils, and of histamine release and intracellular calcium fluxes in rat basophilic leukemia cells (RBL-2H3)
ANDREI B. KOZLOV, ELENA A. OSTRACHOVITCH and IGOR B. AFANAS'EV	795	Mechanism of inhibitory effects of chelating drugs on lipid peroxidation in rat brain homogenates
L. ELLEN BRACKETT and JOHN W. DALY	801	Functional characterization of the A _{2b} adenosine receptor in NIH 3T3 fibroblasts
ANATOLII A. NIKIFOROV and IRINA B. OSTRETSOVA	815	Stimulation of weak organic acid uptake in rat renal tubules by cadmium and nystatin
ANATOLII A. NIKIFOROV and IRINA B. OSTRETSOVA	821	Stimulatory effect of ethanol on weak organic acid uptake in rat renal tubules
S. S. C. WONG, R. A. STURM, J. MICHEL, X.-M. ZHANG, P. A. C. DANOV, K. MCGREGOR, J. J. JACOBS, A. KAUSHAL, Y. DONG, I. S. DUNN and P. G. PARSONS	827	Transcriptional regulation of differentiation, selective toxicity and ATGCAAAT binding of bisbenzimidazole derivatives in human melanoma cells
W. DAVID JARVIS, LAWRENCE F. POVIRK, AMY J. TURNER, REBECCA S. TRAYLOR, DAVID A. GEWIRTZ, GEORGE R. PETTIT and STEVEN GRANT	839	Effects of bryostatin 1 and other pharmacological activators of protein kinase C on 1-[β -D-arabinofuranosyl]cytosine-induced apoptosis in HL-60 human promyelocytic leukemia cells
YOSHINOBU TAKAKURA, SADA MASUDA, HIDEAKI TOKUDA, MAKIYA NISHIKAWA and MITSURU HASHIDA	853	Targeted delivery of superoxide dismutase to macrophages via mannose receptor-mediated mechanism
SHELLY C. LU and HAI-YING HUANG	859	Comparison of sulfur amino acid utilization for GSH synthesis between HepG2 cells and cultured rat hepatocytes
JEAN-CLAUDE LAVOIE, CHRISTIAN LACHANCE and PHILIPPE CHESSEX	871	Antiperoxide activity of sodium metabisulfite. A double-edged sword
LI LI JI and EDNA W. MITCHELL	877	Effects of Adriamycin on heart mitochondrial function in rested and exercised rats
HITOSHI SUGAWARA, KATSUYUKI TOBISE and SOKICHI ONODERA	887	Absence of antioxidant effects of nifedipine and diltiazem on myocardial membrane lipid peroxidation in contrast with those of nisoldipine and propranolol
MARY L. HAASCH, WENDY K. GRAF, ELLEN M. QUARDOKUS, RICHARD T. MAYER and JOHN J. LECH	893	Use of 7-alkoxyphenoxazones, 7-alkoxycoumarins and 7-alkoxyquinolines as fluorescent substrates for rainbow trout hepatic microsomes after treatment with various inducers
Short Communications		
ROBERT MARTINI and MICHAEL MURRAY	905	Retinal dehydrogenation and retinoic acid 4-hydroxylation in rat hepatic microsomes: developmental studies and effect of foreign compounds on the activities

YESHAYAHU KATZ, ZAMIR AMIRI, CHAIM G. PICK, RONIT WEIZMAN, JOSEPH YANAI and MOSHE GAVISH	910	Effects of chronic prenatal, neonatal and adult exposure to barbiturates on mitochondrial benzodiazepine receptors in mouse testis
KENNETH F. ILETT, DAVID M. INGRAM, DENISE S. CARPENTER, CANDEE H. TEITEL, NICHOLAS P. LANG, FRED F. KADLUBAR and RODNEY F. MINCHIN	914	Expression of monomorphic and polymorphic <i>N</i> -acetyltransferases in human colon
HIROYUKI SUGIYAMA, JUNJI YAMADA and TETSUYA SUGA	918	Effects of testosterone, hypophysectomy and growth hormone treatment on clofibrate induction of peroxisomal β -oxidation in female rat liver
JON M. FUKUTO, PRIYA GULATI and HERBERT T. NAGASAWA	922	Involvement of nitroxyl (HNO) in the cyanamide-induced vasorelaxation of rabbit aorta
AMIN A. NANJI, S. M. HOSSEIN SADRAZADEH, PETER THOMAS and TAKASHI YAMANAKA	925	Ethanol-induced suppression of interleukin 1-like activity: reversal by a quinone derivative
Additions and Corrections	929	

15 MARCH 1994

Commentary

MAURO PERRETTI	931	Lipocortin-derived peptides
----------------	-----	-----------------------------

Research Papers

DARREN SMART, GRAHAM SMITH and DAVID G. LAMBERT	939	Halothane and isoflurane enhance basal and carbachol-stimulated inositol(1,4,5)triphosphate formation in SH-SY5Y human neuroblastoma cells
JOHN M. DICKENSON, SUSAN BULMER, ANDREA WHITTAKER, MICHAEL SALWEY, JULIE HAWLEY and STEPHEN J. HILL	947	Bradykinin B ₂ - and 5-hydroxytryptamine (5-HT ₂)-receptor stimulated increases in intracellular calcium in cultured guinea-pig aortic smooth muscle cells
ANKE KRANE, JOHN MACDERMOT and MARY KEEN	953	Desensitization of adenylate cyclase responses following exposure to IP prostanoid receptor agonists. Homologous and heterologous desensitization exhibit the same time course
CAROLINE T. CRILLEY and ANTHONY J. TURNER	961	Effect of chemical modification of arginyl and histidyl residues on [³ H]MK-801 binding to brain synaptic membranes
MICHAEL W. B. BRADBURY, KISHOR RAJA and FUKIKO UEDA	969	Contrasting uptakes of ⁵⁹ Fe into spleen, liver, kidney and some other soft tissues in normal and hypotransferrinaemic mice. Influence of an antibody against the transferrin receptor
M. LOHMEYER, L. MCNAUGHTON, S. P. HUNT and P. WORKMAN	975	Stimulation of intracellular free calcium increases by platelet-activating factor in HT29 colon carcinoma cells. Spectrofluorimetric and preliminary spatio-temporal analysis using confocal laser scanning fluorescence imaging microscopy
F. JEFFREY DILWORTH, MARTIN J. CALVERLEY, HUGH L. J. MAKIN and GLENVILLE JONES	987	Increased biological activity of 20-epi-1,25-dihydroxy-vitamin D ₃ is due to reduced catabolism and altered protein binding
RYUUTA YAMAZAKI, JUNKO SUGATANI, IKUKO FUJII, MASANORI KUROYANAGI, KAORU UMEHARA, AKIRA UENO, YASUO SUZUKI and MASAO MIWA	995	Development of a novel method for determination of acetyl-CoA: 1-alkyl- <i>sn</i> -glycero-3-phosphocholine acetyltransferase activity and its application to screening for acetyltransferase inhibitors. Inhibition by magnolol and honokiol from Magnoliae cortex

- | | | |
|---|------|---|
| TAKESHI NIKAWA, GUNTER SCHUCH,
GUNTER WAGNER and HELMUT SIES | 1007 | Interaction of ebselen with glutathione <i>S</i> -transferase and papain <i>in vitro</i> |
| DAVID A. HALL and
SUSANNA M. O. HOURANI | 1013 | Effects of suramin on increases in cytosolic calcium and on inhibition of adenylate cyclase induced by adenosine 5'-diphosphate in human platelets |
| CHUNG-TSEN HSUEH and
BRUCE J. DOLNICK | 1019 | Regulation of folate-binding protein gene expression by DNA methylation in methotrexate-resistant KB cells |
| GERALYN P. KOCAN,
RICHARD A. PARTIS,
RICHARD A. MUELLER,
WALTER G. SMITH and AKIRA NAKAO | 1029 | Contrasting effects of two arachidonate 5-lipoxygenase-inhibitors on formyl-methionyl-leucyl-phenylalanine (fMLP) and complement fragment 5a induced human neutrophil superoxide generation |
| BEN J. VAN DER WALT,
JOHANN M. VAN ZYL and
ANDRÉ KRIEGLER | 1039 | Aromatic hydroxylation during the myeloperoxidase-oxidase oxidation of hydrazines |
| BO CEDERQVIST, MAGNUS G. PERSSON
and LARS E. GUSTAFSSON | 1047 | Direct demonstration of NO formation <i>in vivo</i> from organic nitrites and nitrates, and correlation to effects on blood pressure and to <i>in vitro</i> effects |
| PETER H. YU, DONG-MEI ZUO and
BRUCE A. DAVIS | 1055 | Characterization of human serum and umbilical artery semicarbazide-sensitive amine oxidase (SSAO). Species heterogeneity and stereoisomeric specificity |
| KAZUO TANAKA, YUTAKA ODA,
AKIRA ASADA, MITSUGU FUJIMORI
and YOSHIHIKO FUNAE | 1061 | Metabolism of lidocaine by rat pulmonary cytochrome P450 |
| MARILYN JANSEN, MICHAEL DYKSTRA,
JACQUELINE I. LEE, JEREMY STABLES,
PETER TOPLEY, VINCENT C. KNICK,
ROBERT J. MULLIN, DAVID S. DUCH
and GARY K. SMITH | 1067 | Effect of purine synthesis inhibition on WiDr spheroids <i>in vitro</i> or on WiDr or colon 38 tumors <i>in vivo</i> . Complete growth inhibition but not regression |
| GUAN CHEN and DAVID J. WAXMAN | 1079 | Role of cellular glutathione and glutathione <i>S</i> -transferase in the expression of alkylating agent cytotoxicity in human breast cancer cells |

Short Communications

- | | | |
|---|------|---|
| MIKIHISA TAKANO, YOSHIKO TOMITA,
TOSHIYA KATSURA,
MASATO YASUHARA, KEN-ICHI INUI
and RYOHEI HORI | 1089 | Bestatin transport in rabbit intestinal brush-border membrane vesicles |
| HIROSHI YOKOTA, HIROSHI IKEZOE,
TAKAFUMI INABA, DAISUKE SANDA,
AKIRA YUASA and NORIYUKI KASAI | 1091 | Increase of UDP-glucuronosyltransferase activities toward xenobiotics during the development of hereditary hepatitis in LEC rats |
| LARRY H. MATHERLY and
SUSAN M. ANGELES | 1094 | Role of N-glycosylation in the structure and function of the methotrexate membrane transporter from CCRF-CEM human lymphoblastic leukemia cells |
| TAI-WING WU, LING-HUA ZENG,
JUN WU and KWOK-PUI FUNG | 1099 | Morin: A wood pigment that protects three types of human cells in the cardiovascular system against oxy-radical damage |

Additions and Corrections

- | | |
|------|---|
| 1105 | Partition and distribution coefficients of solutes and drugs in brush border membrane vesicles. Vol. 45 (1993) 1775-1782. Caroline J. Alcorn, Robert J. Simpson, David E. Leahy and Timothy J. Peters |
|------|---|

Announcements

- | |
|------|
| 1107 |
|------|

29 MARCH 1994

CommentaryCHRISTOPHER A. SHAW and
MICHAEL WILKINSON

- 1109 Receptor characterization and regulation in intact tissue preparations. Pharmacological implications

Research Papers

X. H. ZHOU and A. LI WAN PO

- 1121 Stability and
- in vitro*
- absorption of captopril, enalapril and lisinopril across the rat intestine

JIN-GANG ZHANG and
W. EDWARD LINDUP

- 1127 Cisplatin nephrotoxicity: decreases in mitochondrial protein sulphhydryl concentration and calcium uptake by mitochondria from rat renal cortical slices

ALAN J. HARGREAVES,
ANTHONY P. GLAZIER, JOHN FLASKOS,
FRASER H. MULLINS and
W. GRAHAM McLEAN

- 1137 The disruption of brain microtubules
- in vitro*
- by the phospholipase inhibitor
- p*
- bromophenacyl bromide

COLIN D. CLYNE, SIMON W. WALKER,
MOIRA R. NICOL and
BRENT C. WILLIAMS

- 1145 The M
- ₃
- muscarinic receptor mediates acetylcholine-induced cortisol secretion from bovine adrenocortical zona fasciculata/reticularis cells

G. T. TUCKER, M. S. LENNARD,
S. W. ELLIS, H. F. WOODS, A. K. CHO,
L. Y. LIN, A. HIRATSUKA,
D. A. SCHMITZ and T. Y. Y. CHU

- 1151 The demethylenation of methylenedioxymethamphetamine ("ecstasy") by debrisoquine hydroxylase (CYP2D6)

DIANNE WALKER, JEAN-PIERRE FLINOIS,
SOPHIA C. MONKMAN, CLAIRE BELOC,
ALAN V. BODDY,
SUZANNE CHOLERTON, ANN K. DALY,
MICHAEL J. LIND,
ANDREW D. J. PEARSON,
PHILIPPE H. BEAUNE and
JEFFREY R. IDLE

- 1157 Identification of the major human hepatic cytochrome P450 involved in activation and N-dechloroethylation of ifosfamide

DAVID J. T. PORTER,
JOAN A. HARRINGTON,
MERRICK R. ALMOND,
GREGORY T. LOWEN,
THOMAS P. ZIMMERMAN and
THOMAS SPECTOR

- 1165 5-Ethynyl-2(1
- H*
-)-pyrimidinone: aldehyde oxidase-activation to 5-ethynyluracil, a mechanism-based inactivator of dihydropyrimidine dehydrogenase

ATKINSON W. LONGMIRE,
LARRY L. SWIFT,
L. JACKSON ROBERTS, II,
JOSEPH A. AWAD,
RAYMOND F. BURK and
JASON D. MORROW

- 1173 Effect of oxygen tension on the generation of F
- ₂
- isoprostanes and malondialdehyde in peroxidizing rat liver microsomes

MARCELO G. LUQUITA,
ENRIQUE J. SÁNCHEZ POZZI,
VIVIANA A. CATANIA and
ALDO D. MOTTINO

- 1179 Analysis of
- p*
- nitrophenol glucuronidation in hepatic microsomes from lactating rats

YOSHIAKI FUKUDA and
SHIGERU SASSA

- 1187 Suppression of cytochrome P450IA1 by interleukin-6 in human HepG2 hepatoma cells

CLAUDIA M. JOCHHEIM and
THOMAS A. BAILLIE

- 1197 Selective and irreversible inhibition of glutathione reductase
- in vitro*
- by carbamate thioester conjugates of methyl isocyanate

JILL A. MORRIS and
R. SCOTT McIVOR

- 1207 Saturation mutagenesis at dihydrofolate reductase codons 22 and 31. A variety of amino acid substitutions conferring methotrexate resistance

NISAR A. PAMPORI and
BERNARD H. SHAPIRO

- 1221 Effects of neonatally administered monosodium glutamate on the sexually dimorphic profiles of circulating growth hormone regulating murine hepatic monooxygenases

- DIANE L. DEHAVEN-HUDKINS,
LORRAINE F. LANYON,
FELICIA Y. FORD-RICE and
MARK A. ATOR 1231 σ Recognition sites in brain and peripheral tissues.
Characterization and effects of cytochrome P450
inhibitors
- ROBERT J. LINHARDT,
UMESH R. DESAI, JIAN LIU,
AZRA PERVIN, DEBRA HOPPENSTEADT
and JAWED FAREED 1241 Low molecular weight dermatan sulfate as an antithrom-
botic agent. Structure-activity relationship studies
- Short Communications**
- C. MARY DIXON, GILBERT R. PARK
and MICHAEL H. TARBIT 1253 Characterization of the enzyme responsible for the metab-
olism of sumatriptan in human liver
- ORAZIO CANTONI, PIERO SESTILI,
ANDREA GUIDARELLI and
FLAMINIO CATTABENI 1258 Development and characterization of hydrogen peroxide-
resistant Chinese hamster ovary (CHO) cell variants—II.
Relationships between non-protein sulfhydryl levels and the
induction/stability of the oxidant-resistant phenotype
- BYUNG-CHANG SUH and
KYONG-TAI KIM 1262 Inhibition by ethaverine of catecholamine secretion
through blocking L-type Ca^{2+} channels in PC12 cells
- S. MENZEL, C. SAUERNEIMER,
K. BRUNE and G. GEISLINGER 1267 Is the inversion from *R*- to *S*-ketoprofen concentration
dependent? Investigations in rats *in vivo* and *in vitro*
- JOHN M. RAWLINGS, IAN WYATT
and JON R. HEYLINGS 1271 Evidence for redox cycling of diquat in rat small intestine

20 APRIL 1994

Commentary

- ROGER M. NITSCH
and JOHN H. GROWDON 1275 Role of neurotransmission in the regulation of amyloid
 β -protein precursor processing

Research Papers

- MARK S. WILLIAMS
and WILLIAM R. MANCINI 1285 Effect of 3'-amino-2',3'-dideoxycytidine on DNA
replicative intermediates
- H. M. BARHAM, M. S. LENNARD
and G. T. TUCKER 1295 An evaluation of cytochrome P450 isoform activities in
the female dark agouti (DA) rat: relevance to its use as a
model of the CYP2D6 poor metaboliser phenotype
- HITOSHI HOCHI, YUTAKA MASUDA,
YASUKO ISHIMURA, TAKESHI OHUCHI,
YOSHIHIRO MURAKUMO
and MOTOO OKA 1309 Calcium efflux from cultured bovine adrenal chromaffin
cells induced by bradykinin
- CATHERINE JOULAIN,
ANNIE F. PRIGENT, GEORGES NÉMOZ
and MICHEL LAGARDE 1315 Increased glutathione peroxidase activity in human blood
mononuclear cells upon *in vitro* incubation with N-3 fatty
acids
- EVELIEN SMITSKAMP-WILMS,
GODEFRIDUS J. PETERS,
HERBERT M. PINEDO,
JANNETTE VAN ARK-OTTE
and GIUSEPPE GIACCONE 1325 Chemosensitivity to the indoloquinone EO9 is correlated
with DT-diaphorase activity and its gene expression
- MARIA CRISTINA CARRILLO,
KENICHI KITANI, SETSUKO KANAI,
YUKO SATO, KYOKO MIYASAKA
and GWEN O. IVY 1333 The effect of a long term (6 months) treatment with
(-)-deprenyl on antioxidant enzyme activities in selective
brain regions in old female Fischer 344 rats
- AKIRA MIYAKE, SHINQBU MOCHIZUKI
and HIROYUKI KAWASHIMA 1339 Characterization of cloned human cholecystokinin-B
receptor as a gastrin receptor
- JEFFREY CUMMINGS, LUCY ALLAN
and JOHN F. SMYTH 1345 Encapsulation of mitomycin C in albumin micro-
spheres markedly alters pharmacokinetics, drug quinone
reduction in tumour tissue and antitumour activity.
Implications for the drugs' *in vivo* mechanism of action

- EDI KASHIYAMA, TSUYOSHI YOKOI, KUNIO ITOH, SUSUMU ITOH, MASAOKI ODOMI and TETSUYA KAMATAKI 1357 Stereoselective S-oxidation of flosequinan sulfide by rat hepatic flavin-containing monooxygenase 1A1 expressed in yeast
- MIGUEL REYES-PARADA, MA. CECILIA SCORZA, RODOLFO SILVEIRA, FEDERICO DAJAS, GUSTAVO COSTA, KEITH F. TIPTON and BRUCE K. CASSELS 1365 Monoamine oxidase inhibitory effects of some 4-aminophenethylamine derivatives
- GUILLERMINA ASINS, DOLORS SERRA and FAUSTO G. HEGARDT 1373 The effect of etomoxir on the mRNA levels of enzymes involved in ketogenesis and cholesterologenesis in rat liver
- B. PIROTTE, M.-H. ANTOINE, P. DE TULLIO, M. HERMANN, A. HERCHUELZ, J. DELARGE and P. LEBRUN 1381 A pyridothiadiazine (BPDZ 44) as a new and potent activator of ATP-sensitive K⁺ channels
- ROBERT JARZYNA, TADEUSZ LIETZ and JADWIGA BRYLA 1387 Effect of polyamines on glutamate dehydrogenase within permeabilized kidney-cortex mitochondria and isolated renal tubules of rabbit
- MARIE D. SCHWEICH, DOMINIQUE LISON and ROBERT LAUWERYS 1395 Assessment of lipid peroxidation associated with lung damage induced by oxidative stress. *In vivo* and *in vitro* studies
- PATRICIA RENESTO, MUSTAPHA SI TAHAR and MICHEL CHIGNARD 1401 Modulation by superoxide anions of neutrophil-mediated platelet activation
- PAMELA L. CROWELL, ZHIBIN REN, SHOUZHONG LIN, EDWIN VEDEJS and MICHAEL N. GOULD 1405 Structure-activity relationships among monoterpene inhibitors of protein isoprenylation and cell proliferation
- TIMOTHY J. SHAFER, AMY C. NOSTRANDT, HUGH A. TILSON and WILLIAM R. MUNDY 1417 Mechanisms underlying AlCl₃ inhibition of agonist-stimulated inositol phosphate accumulation. Role of calcium, G-proteins, phospholipase C and protein kinase C
- KRISTA J. S. GRACE, DAVID ZAVORTINK and ROBERT S. JACOBS 1427 Inactivation of bee venom phospholipase A₂ by a sesquiterpene furanoic acid marine natural product
- G. WOERLY, E. WEBER and B. RYFFEL 1435 Demonstration of ternary immunophilin-calcineurin complexes with the immunosuppressants cyclosporin and macrolide FK506

Short Communications

- PETER A. MÜNZEL, MARIANNE BRÜCK and KARL WALTER BOCK 1445 Tissue-specific constitutive and inducible expression of rat phenol UDP-glucuronosyltransferase
- KAREN E. WOODS, JOYCE K. RANDOLPH and DAVID A. GEWIRTZ 1449 Antagonism between tamoxifen and doxorubicin in the MCF-7 human breast tumor cell line
- AXEL NORDHOFF, R. HEINER SCHIRMER, ERTAN MAYATEPEK and KATJA BECKER 1453 No evidence for inhibition of human glutathione reductase by valproic acid
- RICHARD J. WEAVER, BRYAN DUNBAR, MAURICE DICKINS, WILLIAM T. MELVIN, JOHN FOTHERGILL and M. DANNY BURKE 1457 Evidence for a new cytochrome P450 form induced by 3-methylcholanthrene in rats
- VINOD BHAKUNI and RAJA ROY 1461 Interaction of trichloroethylene with phosphatidylcholine and its localization in the phosphatidylcholine vesicles: a ¹H-NMR study

- S. N. NAGENDRA, AJAY MADAN and MORRIS D. FAIMAN 1465 *S*-Methyl *N,N*-diethylthiolcarbamate sulfone, an *in vitro* and *in vivo* inhibitor of rat liver mitochondrial low K_m aldehyde dehydrogenase

29 APRIL 1994

Commentary

J. BRIAN HOUSTON

- 1469 Utility of *in vitro* drug metabolism data in predicting *in vivo* metabolic clearance

Research Papers

- ELLEN C. HEESBEEN, LEO F. VERDONCK, GERARD E. J. STAAL and GERT RIJKSEN 1481 Protein kinase C is not involved in the cytotoxic action of 1-octadecyl-2-*O*-methyl-*sn*-glycerol-3-phosphocholine in HL-60 and K562 cells
- NORIHISA INAZU and TETSUO SATOH 1489 Activation by human chorionic gonadotropin of ovarian carbonyl reductase in mature rats exposed *in vivo* to estrogens
- JOHN HOWL, ANDREW D. J. FILER, ROSEMARY A. PARSLow, CHRISTOPHER J. KIRK, MIREK JURZAK, A. IAN SMITH and MARK WHEATLEY 1497 Pharmacological characterization of linear analogues of vasopressin generated by the systematic substitution of positions 1 and 6 by L-amino acids
- CATHERINE GIRRE, DANIELE LUCAS, ERIC HISPARD, CATHERINE MENEZ, SYLVAIN DALLY and JEAN-FRANÇOIS MENEZ 1503 Assessment of cytochrome P4502E1 induction in alcoholic patients by chlorzoxazone pharmacokinetics
- BRUNO LOMONTE, ANDREJ TARKOWSKI, ULF BAGGE and LARS Å. HANSON 1509 Neutralization of the cytolytic and myotoxic activities of phospholipases A₂ from *Bothrops asper* snake venom by glycosaminoglycans of the heparin/heparan sulfate family
- VIVIANE LECLERCQ-MEYER and WILLY J. MALAISSE 1519 Enhancement by succinic acid dimethyl ester of insulin release evoked by D-glucose and glimepiride in the perfused pancreas of normoglycemic and hyperglycemic rats
- JIRO FUJIYAMA, KIMIKO HIRAYAMA and AKIRA YASUTAKE 1525 Mechanism of methylmercury efflux from cultured astrocytes
- JUNXUAN LU, MARK KAECK, CHENG JIANG, ADRIAN C. WILSON and HENRY J. THOMPSON 1531 Selenite induction of DNA strand breaks and apoptosis in mouse leukemic L1210 cells
- ASSIA SHISHEVA and YORAM SHECHTER 1537 A dynamic system for suppression and re-expression of insulin and pervanadate bioresponses in rat adipocytes. Treatment with okadaic acid and staurosporine
- ROBERT E. BURRIER, SUSAN DEREN, DANIEL G. MCGREGOR, LIZBETH M. HOOS, APRIL A. SMITH and HARRY R. DAVIS, JR. 1545 Demonstration of a direct effect on hepatic acyl CoA:cholesterol acyl transferase (ACAT) activity by an orally administered enzyme inhibitor in the hamster
- YUE LIN, FRED R. KOHN, ADA H. C. KUNG and W. STEVE AMMONS 1553 Protective effect of a recombinant fragment of bactericidal/permeability increasing protein against carbohydrate dyshomeostasis and tumor necrosis factor- α elevation in rat endotoxemia
- NICOLAS HIDIROGLOU, MARIA E. CAMILO, HARRIET C. BECKENHAUER, DEAN J. TUMA, ANTHONY J. BARAK, PETER F. NIXON and JACOB SELHUB 1561 Effect of chronic alcohol ingestion on hepatic folate distribution in the rat
- DAVID F. WOODWARD and RUTH A. LAWRENCE 1567 Identification of a single (FP) receptor associated with prostanoid-induced Ca²⁺ signals in Swiss 3T3 cells
- WEI-HSUNG LIN, KENDA MARCUCCI and JEROME A. ROTH 1575 Effect of manganese on tyrosylprotein sulfotransferase activity in PC12 cells

- ZOLTAN KISS 1581 Sphingosine-like stimulatory effects of propranolol on phospholipase D activity in NIH 3T3 fibroblasts
- ZHI-MIN YUAN, D. MARC ROSEN, MERRILL J. EGORIN and PATRICK S. CALLERY 1587 Cytotoxic activity of N^1 - and N^8 -aziridinyl analogs of spermidine
- RICHARD F. LUDUEÑA, MARY CARMEN ROACH, VEENA PRASAD, MOHUA BANERJEE, YUKIKO KOISO, YIN LI and SHIGEO IWASAKI 1593 Interaction of ustiloxin A with bovine brain tubulin
- BERNARD W. FUTSCHER, MOHAMMAD R. ABBASZADEGAN, FREDERICK DOMANN and WILLIAM S. DALTON 1601 Analysis of *MRP* mRNA in mitoxantrone-selected, multidrug-resistant human tumor cells
- HIROYUKI KOBAYASHI, NUNA KIM, MARC-ERIC HALATSCH and TAKAO OHNUMA 1607 Specificity of ribozyme designed for mutated *DHFR* mRNA
- A. MAJID CHERAGHALI, RAKESH KUMAR, LILI WANG, EDWARD E. KNAUS and LEONARD I. WIEBE 1615 Synthesis, biotransformation, pharmacokinetics, and antiviral properties of 5-ethyl-5-halo-6-methoxy-5,6-dihydro-2'-deoxyuridine diastereomers
- SUSAN M. MEIERGERD, JAMES S. McELVAIN and JAMES O. SCHENK 1627 Effects of cocaine and repeated cocaine followed by withdrawal. Alterations of dopaminergic transporter turnover with no changes in kinetics of substrate recognition
- YUICHIRO KIDO, ABDUL R. KHOKHAR and ZAHID H. SIDDIK 1635 Glutathione-mediated modulation of tetraplatin activity against sensitive and resistant tumor cells
- J. CHRISTOPHER GORSKI, STEPHEN D. HALL, DAVID R. JONES, MARK VANDENBRANDEN and STEVEN A. WRIGHTON 1643 Regioselective biotransformation of midazolam by members of the human cytochrome P450 3A (CYP3A) subfamily
- THOMAS E. WEBB, MAI-HUONG PHAM-NGUYEN, MICHAEL DARBY and ASHTON T. HAMME, II 1655 Pharmacokinetics relevant to the anti-carcinogenic and anti-tumor activities of glucarate and the synergistic combination of glucarate:retinoid in the rat
- MARY S. BARNETTE, JUDY RUSH, LISA A. MARSHALL, JAMES J. FOLEY, DULCIE B. SCHMIDT and HENRY M. SARAU 1661 Effects of scalaradial, a novel inhibitor of 14 kDa phospholipase A_2 , on human neutrophil function
- RICHARD W. LAMBRECHT, JULIA W. CABLE, JOYCE A. PEPE and HERBERT L. BONKOVSKY 1669 3,5,5-Trimethylhexanoylferrocene induction of heme oxygenase activity in normal hepatocytes
- RICHARD F. LUDUEÑA, MARY CARMEN ROACH and DAVID L. EPSTEIN 1677 Interaction of ethacrynic acid with bovine brain tubulin
- ELIZABETH T. HAYS, KHIRO SANCHEZ and CARMEL VERRIER 1683 Ryanodine and theophylline-induced depletion of energy stores in amphibian muscle
- MARIA A. R. VIEIRA, MÔNICA F. MOREIRA, THOMAS MAACK and JORGE A. GUIMARÃES 1693 Conversion of T-kinin to bradykinin by the rat kidney
- VICRAM GUPTA, NARAYANA KAMATH, GEORGE T. TKALCEVIC and SHIVENDRA V. SINGH 1701 Potentiation of tamoxifen activity by verapamil in a human breast cancer cell line
- GEORGE W. LUBEGA, RONALD D. KLEIN, TIMOTHY G. GEARY and ROGER K. PRICHARD 1705 *Haemonchus contortus*: the role of two β -tubulin gene subfamilies in the resistance to benzimidazole anthelmintics

18 MAY 1994

Commentary

- ANNE C. E. MOOR, HELGA E. DE VRIES, 1717 The blood-brain barrier and multiple sclerosis
ALBERTUS G. DE BOER and
DOUWE D. BREIMER

Rapid Communication

- GARRY J. HANDELMAN, 1725 α -Lipoic acid reduction by mammalian cells to the dithiol
DERICK HAN, HANS TRITSCHLER form, and release into the culture medium
and LESTER PACKER

Research Papers

- TORBEN JOHANSEN and 1731 Increased Na^+/K^+ -pump activity and adenosine triphos-
HELLE PRÆTORIUS phosphate utilization after compound 48/80-induced histamine
secretion from rat mast cells

- ALESSANDRA PISTELLI, 1737 Nitroblue tetrazolium inhibits oxidation of glyceryl tri-
VINCENZO MOLLACE, nitrate to nitric oxide in bovine aortic smooth muscle cells
GIUSEPPE NISTICO, DANIELA SALVEMINI
and JOHN VANE

- VALERIE M. Y. SEAH and 1743 2,6-Dichloro-4-nitrophenol (DCNP), an alternate-
KIM PING WONG substrate inhibitor of phenolsulfotransferase

- YUTAKA MASUDA, 1751 Effects of the potassium channel openers cromakalim
MASANORI YOSHIZUMI, and pinacidil on catecholamine secretion and calcium
YASUKO ISHIMURA, ITSUO KATOH mobilization in cultured bovine adrenal chromaffin cells
and MOTOO OKA

- ZAHAVA TANNE, RAYMOND COLEMAN, 1759 Ultrastructural and cytochemical changes in the heart of
MENACHEM NAHIR, DALIA SHOMRAT, iron-deficient rats
JOHN P. M. FINBERG and
MOUSSA B. H. YOUDIM

- WICHITTRA TASSANEYAKUL, 1767 Caffeine metabolism by human hepatic cytochromes P450:
DONALD J. BIRKETT, contributions of 1A2, 2E1 and 3A isoforms
MICHAEL E. MC MANUS,
WONGWIWAT TASSANEYAKUL,
MAURICE E. VERONESE,
TOMMY ANDERSSON, ROBERT H. TUKEY
and JOHN O. MINERS

- ULF JUNGNELIUS, 1777 Similar toxic effect of 1,3-bis(2-chloroethyl)-1-nitrosourea
MARIANNE RIDDERSTRÖM, on lymphocytes from human subjects differing in the
JOHAN HANSSON, ULRIK RINGBORG expression of glutathione transferase M1-1
and BENGT MANNERVIK

- ARISTIDE FLORIDI, ROSSANA PULSELLI, 1781 Rhein enhances the effect of Adriamycin on mitochondrial
FRANCESCO P. GENTILE, respiration by increasing antibiotic-membrane interaction
ROSARIA BARBIERI and
MARCELLO BENASSI

- ASTRID HAGELÜKEN, LORE GRÜNBAUM, 1789 Lipophilic β -adrenoceptor antagonists and local anes-
BERND NÜRNBERG, thetics are effective direct activators of G-proteins
RAINER HARHAMMER,
WALTER SCHUNACK and
ROLAND SEIFERT

- SAMIRA RAIS, 1797 Staurosporine up-regulates the expression of phorbol
CHRISTOPHE COMBADIÈRE, dibutyrate binding sites in human platelets
JACQUES HAKIM and AXEL PERIANIN

- EDMUND MASER and 1805 11β -Hydroxysteroid dehydrogenase mediates reductive
GUDULA BANNENBERG metabolism of xenobiotic carbonyl compounds

- A. ALFONSO, M. A. BOTANA, 1813 Effect of signal transduction pathways on the action of
M. R. VIEYTES, M. C. LOUZAO and thapsigargin on rat mast cells. Crosstalks between cellular
L. M. BOTANA signalling and cytosolic pH

- SANDRINE CARTEAU, 1821 Inhibition of the *in vitro* integration of Moloney murine
JEAN FRANCOIS MOUSCADET, leukemia virus DNA by the DNA minor groove binder
HÉLÈNE GOULAOUIC, FRÉDÉRIC SUBRA netropsin
and CHRISTIAN AUCLAIR
- CATHERINE RIBIERE, 1827 Mitochondrial respiratory activity and superoxide radical
ISABELLE HININGER, generation in the liver, brain and heart after chronic
CHANTAL SAFFAR-BOCCARA, ethanol intake
DOMINIQUE SABOURAULT and
ROGER NORDMANN
- HÉLÈNE ROUACH, PASCAL HOUZE, 1835 Effects of acute ethanol administration on the uptake of
MONIQUE GENTIL, ⁵⁹Fe-labeled transferrin by rat liver and cerebellum
MARIE-THÉRÈSE ORFANELLI and
ROGER NORDMANN
- MARIELLE DE LOCHT, 1843 Iron uptake from ferrioxamine and from ferrirhizoferrin
JOHAN R. BOELAERT and by germinating spores of *Rhizopus microsporus*
YVES-JACQUES SCHNEIDER
- ELENE PEREIRA and 1851 Correlation between the short-term measurements of drug
ARLETTE GARNIER-SUILLEROT accumulation in living cells and the long-term growth
inhibition
- R. REGUERA, R. BALAÑA FOUCE, 1859 Putrescine uptake inhibition by aromatic diamidines in
J. C. CUBRIA, M. L. ALVAREZ BUJIDOS *Leishmania infantum* promastigotes
and D. ORDÓÑEZ
- SERGE YU. FUCHS, 1867 Inducibility of various cytochrome P450 isozymes by
VLADIMIR S. SPIEGELMAN and phenobarbital and some other xenobiotics in *Drosophila*
GENNADY A. BELITSKY *melanogaster*
- PANAYOTIS A. THEODOROPoulos, 1875 Cytochalasin B may shorten actin filaments by a mechan-
ACHILLE GRAVANIS, ANNA TSAPARA, ism independent of barbed end capping
ANDREW N. MARGIORIS,
EVA PAPADOGIORGAKI,
VASSILIS GALANOPOULOS and
CHRISTOS STOURNARAS
- FRANÇOIS BERTHOU, YVONNE DREANO, 1883 Involvement of cytochrome P450 3A enzyme family in the
CLAIRE BELLOC, LAURI KANGAS, major metabolic pathways of toremifene in human liver
JEAN-CHARLES GAUTIER and microsomes
PHILIPPE BEAUNE
- MATTHEW B. GRISHAM and 1897 Effects of aminosalicylates and immunosuppressive agents
ALLEN M. MILES on nitric oxide-dependent *N*-nitrosation reactions
- KHOSROW KASHFI, 1903 Differential induction of glutathione *S*-transferase in rat
JULIO A. RIMARACHIN, aorta versus liver
BABETTE B. WEKSLER and
ANDREW J. DANNENBERG
- RAVI KOTHAPALLI, 1909 Effects of long-chain fatty amines on the growth of
EDMUND M. K. LUI, NAJLA GUTHRIE, *ras*-transformed NIH 3T3 cells
ANN F. CHAMBERS and
KENNETH K. CARROLL
- Short Communications**
- ROSS J. BALDESSARINI, ELDA R. MARSH 1917 Effects of dopamine partial-agonist aminoergolines on
and DAVID HUSTON-LYONS dopamine metabolism in limbic and extrapyramidal
regions of rat brain
- ATSUKO YAMASHITA, RIICHI TAWA, 1920 Site-specific DNA cleavage by Cu(II) complexes of
YASUHIRO IMAKURA, KUO-HSIUNG LEE podophyllotoxin derivatives
and HIROMU SAKURAI

1 JUNE 1994

Commentary

- CHRISTA D. M. A. VAN DEN KOEDIJK, 1927 Speculation on the mechanism of action of triphenyl-
MARINUS A. BLANKENSTEIN
and JOSEPH H. H. THIJSEN ethylene antioestrogens

Research Papers

- FRANCISCO GAMARRO, 1939 *P*-glycoprotein overexpression in methotrexate-resistant
M. JESUS CHIQUERO, *Leishmania tropica*
M. VICTORIA AMADOR,
DANIELLE LÉGARÉ, MARC OUELLETTE
and SANTIAGO CASTANYS
- MARELLE G. BOERSMA, 1949 NADPH-cytochrome reductase catalysed redox cycling of
WALTER G. BALVERS, SJEF BOEREN, 1,4-benzoquinone; hampered at physiological conditions,
JACQUES VERVOORT and initiated at increased pH values
IVONNE M. C. M. RIETJENS
- MAYUMI MIMURA, HIROSHI YAMAZAKI, 1957 Differential roles of cytochromes P450 2D1, 2C11, and
CHIKAKO SUGAHARA, TOYOKO HIROI, 1A1/2 in the hydroxylation of bufuralol by rat liver
YOSHIHIKO FUNAE microsomes
and TSUTOMU SHIMADA
- KEE D. KIM, 1965 5-Isothiocyanonicotine: a high-affinity irreversible ligand
NICOLE LERNER-MARMAROSH, for brain nicotinic receptors
MANDA SARASWATI, ANDREW S. KENDE
and LEO G. ABOOD
- BRADLEY M. KERR, 1969 Human liver carbamazepine metabolism. Role of
KENNETH E. THUMMEL, CYP3A4 and CYP2C8 in 10,11-epoxide formation
COLLEEN J. WURDEN,
SUSAN M. KLEIN, DEANNA L. KROETZ,
FRANK J. GONZALEZ
and RENÉ H. LEVY
- GIUSEPPE PIZZORNO, 1981 Enhancement of antineoplastic activity of 5-fluorouracil
SANDRA J. DAVIS, DENNIS J. HARTIGAN in mice bearing colon 38 tumor by (6*R*),5,10-dideaza-
and ORSOLA RUSSELLO tetrahydrofolic acid
- JOSÉ B. A. CUSTÓDIO, 1989 Tamoxifen and hydroxytamoxifen as intramembraneous
TERESA C. P. DINIS, inhibitors of lipid peroxidation. Evidence for peroxy
LEONOR M. ALMEIDA radical scavenging activity
and VÍTOR M. C. MADEIRA
- NISAR A. PAMPORI 1999 Subnormal concentrations in the feminine profile of
and BERNARD H. SHAPIRO circulating growth hormone enhance expression of female-
specific CYP2C12
- S. M. HOSSEIN SADRZADEH, 2005 Effect of chronic ethanol feeding on plasma and liver α -
AMIN A. NANJI and MOHSEN MEYDANI and γ -tocopherol levels in normal and vitamin E-deficient
rats. Relationship to lipid peroxidation
- PIUS JOSEPH, MAHESH C. SHARMA 2011 Inhibition of NAD(P)H:quinone oxidoreductase₁ in
and ANIL K. JAISWAL ethacrynic acid-resistant human colon carcinoma cells
- IRENE W. ALTHAUS, JAMES J. CHOU, 2017 Kinetic studies with the non-nucleoside human
ANDREA J. GONZALES, immunodeficiency virus type-1 reverse transcriptase
MARTIN R. DEIBEL, KUO-CHEN CHOU, inhibitor U-90152E
FERENC J. KEZDY, DONNA L. ROMERO,
RICHARD C. THOMAS,
PAUL A. ARISTOFF, W. GARY TARPLEY
and FRITZ REUSSER
- BARBARA F. HALES 2029 Regulation of the Y_p subunit of glutathione *S*-transferase
and CHUNWEI HUANG P in rat embryos and yolk sacs during organogenesis
- DONALD E. FRAZIER, JR., 2039 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin-induced thymic
ALLEN E. SILVERSTONE and atrophy and lymphocyte stem cell alterations by
THOMAS A. GASIEWICZ mechanisms independent of the estrogen receptor

- JAYA BHATTACHARYYA, 2049 Interaction of chlorpromazine with myoglobin and hemo-
MAITREE BHATTACHARYYA, globin—a comparative study
A. S. CHAKRABARTY, U. CHAUDHURI
and R. K. PODDAR
- YOSUKE TOJYO, AKIHIKO TANIMURA 2055 Modulatory effect of 4 β -phorbol 12-myristate 13-acetate
and YOSHITO MATSUMOTO (PMA) on carbachol-induced Ca²⁺ mobilization in rat
parotid acinar cells
- KAI ZHANG and NAGARATNAM P. DAS 2063 Inhibitory effects of plant polyphenols on rat liver
glutathione *S*-transferases
- SUSAN M. KIMMETT, 2069 Evidence for mechanism-based inactivation of rat and
JAMES P. MCNAMEE, chick embryo hepatic cytochrome P4501A and P4503A by
R. TODD DENOFREO dihydropyridines, sydnones, and dihydroquinolines
and GERALD S. MARKS
- ARTHUR E. BENZICK, 2079 Diquat- and acetaminophen-induced alterations of biliary
SUDHESHNA L. REDDY, SANJIV GUPTA, efflux of iron in rats
LYNETTE K. ROGERS
and CHARLES V. SMITH
- RON BARTZATT and JOE D. BECKMANN 2087 Inhibition of phenol sulfotransferase by pyridoxal
phosphate
- RONG QIU, KENNETH L. MELMON 2097 Effects of lymphokines and mitogens on a histamine
and MANZOOR M. KHAN derivative-induced intracellular calcium mobilization and
inositol phosphate production
- BOE S. SØRENSEN, PETER B. JENSEN, 2105 Antagonistic effect of aclarubicin on camptothecin
MAXWELL SEHESTED, PALLE S. JENSEN, induced cytotoxicity: role of topoisomerase I
EIGIL KJELDSEN, OLE F. NIELSEN
and JAN ALSNER

Short Communication

- DASAN LUO and STEVEN R. VINCENT 2111 Inhibition of nitric oxide synthase by antineoplastic
anthracyclines

15 JUNE 1994

Commentary

- TAMMY M. BRAY 2113 Enhancement of tissue glutathione for antioxidant and
and CARLA G. TAYLOR immune functions in malnutrition

Research Papers

- DORTE NIELSEN, CHRISTIAN MAARE 2125 Kinetics of daunorubicin transport in Ehrlich ascites
and TORBEN SKOVGAARD tumor cells with different expression of P-glycoprotein.
Influence of verapamil
- MICHELE COLUMBO, LUIS M. BOTANA, 2137 Studies of the intracellular Ca²⁺ levels in human adult skin
EDWARD M. HOROWITZ, mast cells activated by the ligand for the human *c-kit*
LAWRENCE M. LICHTENSTEIN receptor and anti-IgE
and DONALD W. MACGLASHAN, JR.
- MARIANNE WEIS, GEORGE E. N. KASS 2147 Further characterization of the events involved in
and STEN ORRENIUS mitochondrial Ca²⁺ release and pore formation by
prooxidants
- JEANNINE S. STROBL, 2157 A survey of human breast cancer sensitivity to growth
VIRGINIA A. PETERSON inhibition by calmodulin antagonists in tissue culture
and KAREN A. WOODFORK
- B. J. NORTHOVER 2163 Effect of pre-treating rat atria with potassium channel
blocking drugs on the electrical and mechanical responses
to phenylephrine

- EDWIN R. CHILVERS, BARBARA J. LYNCH, GRAHAM J. OFFER and R. A. JOHN CHALLISS 2171 Effects of membrane depolarization and changes in intra- and extracellular calcium concentration on phosphoinositide hydrolysis in bovine tracheal smooth muscle
- MARIO CIUFFI, GRAZIA GENTILINI, SERGIO FRANCHI-MICHELI and LUCILLA ZILLETI 2181 Effect of 21-aminosteroid U74500A (pregna-1,4,9(11)-triene-3,20-dione,21-(4-(5,6-bis(diethylamino)-2-pyridinyl)-1-piperazinyl)-16-methyl-, HCl (16 α)) on rat brain cortex lipid peroxidation induced "in vivo" by iron-carbohydrate
- E. DAMONTE, J. NEYTS, C. A. PUJOL, R. SNOECK, G. ANDREI, S. IKEDA, M. WITVROUW, D. REYMEY, H. HAINES, M. C. MATULEWICZ, A. CEREZO, C. E. COTO and E. DE CLERCQ 2187 Antiviral activity of a sulphated polysaccharide from the red seaweed *Nothogenia fastigiata*
- GERRIE W. SANDKER, BETTY WEERT, PETER OLINGA, HENKE WOLTERS, MAARTEN J. H. SLOOFF, DIRK K. F. MEIJER and GERRY M. M. GROOTHUIS 2193 Characterization of transport in isolated human hepatocytes. A study with the bile acid taurocholic acid, the uncharged ouabain and the organic cations vecuronium and rocuronium
- C. KÖGL, W. SCHNEIDER and E. F. ELSTNER 2201 The influence of magnesium-pyridoxal-5'-phosphate-glutamate in comparison with probucol, α -tocopherol and trolox on copper-induced oxidation of human low density lipoprotein *in vitro*
- RADO NOSÁL, VIERA JANČINOVÁ and MARGITA PETŘÍKOVÁ 2207 The role of intracellular calcium in A-23187 stimulated and β -adrenoceptor blocking drug treated blood platelets
- YANONG CAI, ANNA-KARIN SOHLENIUS, KARIN ANDERSSON, CAROLA SUNDBERG and JOSEPH W. DEPIERRE 2213 Effects of acetylsalicylic acid on parameters related to peroxisome proliferation in mouse liver
- PAOLO SARTI, GIOVANNI ANTONINI, GIUSEPPE ARANCIA, THOMAS J. BLANCK, GENNARO CITRO, ANTONELLA MELONI, AGNESE MOLINARI and FRANCESCO MALATESTA 2221 Lonidamine-mediated respiratory changes in rat heart myocytes: a re-examination of the functional response of mitochondrial cytochrome *c* oxidase
- MANUELA PÉREZ-GILABERT, ALVARO SÁNCHEZ-FERRER and FRANCISCO GARCÍA-CARMONA 2227 Enzymatic oxidation of phenothiazines by lipoxygenase/H₂O₂ system
- P. SOUČEK, B. FILIPCOVA and I. GUT 2233 Cytochrome P450 destruction and radical scavenging by benzene and its metabolites. Evidence for the key role of quinones
- ZHI MING ZHENG and STEVEN SPECTER 2243 Suppression by delta-9-tetrahydrocannabinol of lipopolysaccharide-induced and intrinsic tyrosine phosphorylation and protein expression in mouse peritoneal macrophages
- SHARDA P. SINGH, JANMEJAI K. SRIVASTAVA, JAGDISH C. KATIYAR and VISHWA M. L. SRIVASTAVA 2253 Role of reactive oxygen species in the chemoprophylactic action of methyl [5-[[4-(2-pyridinyl)-1-piperazinyl]-carbonyl]-1*H*-benzimidazol-2-yl] carbamate in hamster against *Ancylostoma ceylanicum*
- A. HATZELMANN, J. GOOSSENS, R. FRUCHTMANN, K.-H. MOHRS, S. RADDATZ and R. MÜLLER-PEDDINGHAUS 2259 Inversely-correlated inhibition of human 5-lipoxygenase activity by BAY X1005 and other quinoline derivatives in intact cells and a cell-free system—Implications for the function of 5-lipoxygenase activating protein
- ANDRZEJ SKLADANOWSKI and JERZY KONOPA 2269 Interstrand DNA crosslinking induced by anthracyclines in tumour cells

ANDRZEJ SKLADANOWSKI and JERZY KONOPA	2279	Relevance of interstrand DNA crosslinking induced by anthracyclines for their biological activity
Short Communications		
WOLFGANG REIMANN and HAGEN-HEINRICH HENNIES	2289	Inhibition of spinal noradrenaline uptake in rats by the centrally acting analgesic tramadol
BRIAN L. GOODWIN, COLIN R. J. RUTHVEN and MERTON SANDLER	2294	Gut flora and the origin of some urinary aromatic phenolic compounds
QUAN LI, CHRISTOPHER J. BOWMER and MICHAEL S. YATES	2298	Effect of arginine on cisplatin-induced acute renal failure in the rat
MARIE-ANNICK LE BOT, HELENE SWIRSKY-SIMON, DOMINIQUE KERNALEGUEN and CHRISTIAN RICHE	2302	P-glycoprotein expression and function in rat hepatocytes in culture
ULRIKE THULL and BERNARD TESTA	2307	Screening of unsubstituted cyclic compounds as inhibitors of monoamine oxidases

AUTHOR INDEX

- van der Aa E. M., 453
 Abbaszadegan M. R., 1601
 Abdel-Meguid E. M., 443
 Abood L. G., 1965
 Abramson S. B., 563
 Afanas'ev I. B., 795
 Alexander✠ P., 117
 Alfonso A., 1813
 Allan L., 1345
 Almeida L. M., 1989
 Almond M. R., 1165
 Alsner J., 2105
 Althaus I. W., 2017
 Altschuler E., 387
 Amador M. V., 1939
 Amalric F., 111
 Ambroso J. L., 679
 Amiri Z., 910
 Ammons W. S., 1553
 Amsterdam J. G. C. van, 588
 Andersson K., 2213
 Andersson T., 1767
 Andreeva N. I., 303
 Andrei G., 2187
 Angeles S. M., 1094
 Antoine M.-H., 1381
 Antonini G., 2221
 Arancia G., 2221
 Aristoff P. A., 2017
 van Ark-Otte J., 1325
 Asada A., 1061
 Asano T., 241
 Ashani Y., 347
 Asher J. M., 347
 Asins G., 1373
 Ator M. A., 1231
 Auclair C., 1821
 Augusto O., 309
 Awad J. A., 1173
 Axenova L. N., 303

 Bagge U., 1509
 Baillie T. A., 1197
 Baker A. E. M., 673
 Baker P. V., 469
 Baldessarini R. J., 1917
 Bales E., 387
 Balvers W. G., 1949
 Banerjee M., 1593
 Banks W. A., 699
 Bannenberg G., 1805
 Barak A. J., 1561
 Barbieri R., 1781
 Barham H. M., 1295

 Barke K. E., 397
 Barnette M. S., 1661
 Bartzatt R., 2087
 Beaudet A., 43, 53
 Beaune P. H., 1157
 Beaune P., 1883
 Beckenhauer H. C., 1561
 Becker K., 1453
 Beckmann J. D., 2087
 Belitsky G. A., 1867
 Belloc C., 1883
 Beloc C., 1157
 Benassi M., 1781
 Benzick A. E., 2079
 Berthon B., 789
 Berthou F., 1883
 Beusenberg F. D., 588
 Bhakuni V., 1461
 Bhattacharyya J., 2049
 Bhattacharyya M., 2049
 Bicknell S. R., 257
 Birkett D. J., 1767
 Blanck T. J., 2221
 Blankenstein M. A., 1927
 Bock K. W., 485, 1445
 Boddy A. V., 1157
 Boelaert J. R., 1843
 de Boer A. G., 1717
 Boeren S., 1949
 Boersma M. G., 1949
 Bondy S. C., 651
 Bonkovsky H. L., 1669
 Bonnet H., 111
 Bonta I. L., 588
 Botana L. M., 591, 1813, 2137
 Botana M. A., 1813
 Bouche G., 111
 Bouhoute A., 748
 Bours V., 145
 Bowmer C. J., 2298
 Brackett L. E., 801
 Bradbury M. W. B., 969
 Bray T. M., 2113
 Brecht K. M., 347
 Breimer D. D., 1717
 Brethenou P., 111
 Brigle K. E., 337
 Brown L., 281
 Brück M., 1445
 Brune K., 1267
 Bryła J., 1387
 Bujidos M. L. A., 1859
 Bulmer S., 947
 Bunch R. T., 317

- Burk R. F., 1173
 Burke M. D., 763, 1457
 Burrier R. E., 1545
 Busi C., 643

 Cable J. W., 1669
 Cai Y., 2213
 Callery P. S., 1587
 Calverley M. J., 987
 Camilo M. E., 1561
 Canada A. T., 403
 Cantoni O., 1258
 Caranto G. R., 347
 Carayon P., 633
 Carmi-Leroy A., 789
 Carpenter D. S., 914
 Carrillo M. C., 1333
 Carroll K. K., 1909
 Carteau S., 1821
 Casellas P., 633
 Cassel G. E., 499
 Cassels B. K., 1365
 Castanys S., 1939
 Castel M.-N., 43, 53
 Castronovo V., 137, 145
 Catania V. A., 1179
 Cattabeni F., 1258
 Ceccarelli D., 217
 Cederqvist B., 1047
 Cerezo A., 2187
 Chabry J., 43
 Chakrabarty A. S., 2049
 Challiss R. A. J., 2171
 Chambers A. F., 1909
 Chandoga J., 515
 Chariot A., 137
 Chassany O., 415
 Chaudhuri U., 2049
 Chen C.-C., 549
 Chen C.-F., 549
 Chen G., 1079
 Cheng Y.-C., 171
 Cheraghali A. M., 1615
 Chessex P., 871
 Chignard M., 1401
 Childers S. R., 711
 Chilvers E. R., 2171
 Chipman J. K., 625
 Chiquero M. J., 1939
 Cho A. K., 1151
 Cholerton S., 1157
 Chou J. J., 2017
 Chou K.-C., 2017
 Choudhary Q., 197
 Chu T. Y. Y., 1151
 Ciment G., 103
 Ciomei M., 295
 Citro G., 2221
 Ciuffi M., 2181
 Clancy R. M., 563
 Claudepierre P., 415
 Clyne C. D., 1145
 Coene M.-C., 737
 Cohen G. M., 187
 Coleman R., 625, 1759
 Columbo M., 2137
 Combadiere C., 1797
 Combettes L., 789
 Constantino L., 275
 Cools W., 737
 Cory A. H., 365
 Cory J. G., 365
 Costa G., 1365
 Coto C. E., 2187
 Crilley C. T., 961
 Crowell P. L., 1405
 Croxtall J. D., 197
 Cubria J. C., 1859
 de la Cuesta F. S., 209
 Cummings J., 1345
 Custódio J. B. A., 1989
 Czarlewski W., 789

 Dajas F., 1365
 Dally S., 1503
 Dalton W. S., 1601
 Daly A. K., 1157
 Daly J. W., 801
 Damonte E., 2187
 Dannenberg A. J., 1903
 Danoy P. A. C., 827
 Darby M., 1655
 Das N. P., 521, 2063
 Davies D. E., 117
 Davis B. A., 1055
 Davis Jr. H. R., 1545
 Davis S. J., 1981
 De Clercq E., 39, 155, 2187
 De La Cruz J. P., 209
 De Monchy J. G. R., 289
 DeHaven-Hudkins D. L., 1231
 DePierre J. W., 2213
 Deibel M. R., 2017
 Dejardin E., 145
 Delabre K., 21
 Delarge J., 1381
 Denofreo R. T., 2069
 Deren S., 1545
 Desai U. R., 1241
 Di Stefano G., 643
 Dickenson J. M., 947
 Dickins M., 763, 1457
 Dickinson R. G., 457, 469
 Dilworth F. J., 987
 Dinis T. C. P., 1989
 Dinsdale D., 187
 Diwu Z., 373
 Dixon C. M., 1253
 Doctor B. P., 347
 Dolnick B. J., 1019
 Domann F., 1601
 Dong Y., 827
 Dooper M. W. S. M., 289
 Dreano Y., 1883
 Duch D. S., 1067
 Dunbar B., 1457
 Dunlop J., 267
 Dunn I. S., 827
 Dunn S. E., 359
 Dutschman G. E., 171
 Duval D. L., 573
 Dykstra M., 1067

- Eckenstein F. P., 103
 Egorin M. J., 1587
 Elcombe C. R., 763
 Ellis A. L., 387
 Ellis S. W., 1151
 Elstner E. F., 2201
 Emmas C., 197
 Epstein D. L., 1677
 Erchegeyi J., 699
 Estévez M. D., 591

 Faiman M. D., 1465
 Faller D. P., 757
 Farag M. M., 443
 Fareed J., 1241
 Faure M.-P., 43
 Felix K., 555
 Filer A. D. J., 1497
 Filipcova B., 2233
 Finberg J. P. M., 1759
 Fiume L., 643
 Flaskos J., 1137
 Flinois J.-P., 1157
 Floridi A., 1781
 Flower R. J., 197
 Foley J. J., 1661
 Ford-Rice F. Y., 1231
 Fornari F. A., 317
 Forster A., 485
 Fothergill J., 1457
 Fouce R. B., 1859
 Franchi-Micheli S., 2181
 Frazier Jr. D. E., 2039
 Fruchtmann R., 2259
 Fuchs S. Yu., 1867
 Fujii I., 995
 Fujimori M., 1061
 Fujiyama J., 1525
 Fukuda Y., 1187
 Fukuto J. M., 922
 Funae Y., 247, 727, 1061, 1957
 Fung K.-P., 1099
 Funk M., 505
 Futscher B. W., 1601

 Gal C. S.-L., 633
 Galanopoulos V., 1875
 Gallesi D., 217
 Gamage R. S. K. A., 584
 Gamarro F., 1939
 Gambari R., 599
 Garcia C., 633
 Garcia-Carmona F., 2227
 Garnier-Suillerot A., 1851
 Gasiewicz T. A., 2039
 Gath I., 505
 Gautier J.-C., 1883
 Gavish M., 910
 Geary T. G., 1705
 Geisslinger G., 1267
 van Gelderen H., 753
 Gentil M., 1835
 Gentile F. P., 1781
 Gentilini G., 2181
 Gewirtz D. A., 1449
 Gewirtz D. A., 317
 Gewirtz D. A., 839
 Giaccone G., 1325
 Gielen J., 137
 Giovannini F., 217
 Girre C., 1503
 Glazier A. P., 1137
 Godwin A. K., 689
 Goldman I. D., 337
 Golovina S. M., 303
 Gomis A., 225
 Gonzales A. J., 2017
 Gonzalez F. J., 1969
 Goodwin B. L., 2294
 Goossens J., 737, 2259
 Gorkin V. Z., 303
 Gorman A., 267
 Gorski J. C., 1643
 Goujon-Letawe F., 145
 Goulaouic H., 1821
 Gould M. N., 1405
 Grace K. J. S., 1427
 Graf W. K., 893
 Grandi M., 295
 Grant S., 839
 Gravanis A., 1875
 Gravitt K. R., 425
 Gray P., 581
 Grenfell S., 93
 Grieve A., 267
 Grisham M. B., 1897
 Griffiths R., 267
 Groothuis G. M. M., 2193
 Growdon J. H., 1275
 Grünbaum L., 1789
 Guidarelli A., 1258
 Guimarães J. A., 1693
 Guiochon-Mantel A., 21
 Gulati P., 922
 Guo S. X., 651
 Gupta S., 2079
 Gupta V., 1701
 Gustafsson L. E., 1047
 Gut I., 2233
 Guthrie N., 1909
 Gutierrez L. M., 225

 Haasch M. L., 893
 Hackler L., 699
 Hagelüken A., 1789
 Hahn K., 699
 Haines H., 2187
 Hakim J., 1797
 Halatsch M.-E., 1607
 Hales B. F., 2029
 Hall D. A., 1013
 Hall S. D., 1643
 Hamilton T. C., 689
 Hamilton T., 257
 Hamme II, A. T., 1655
 Hampl L., 515
 Han D., 1725
 Handel L. M., 689
 Handelman G. J., 1725
 Hanson L. Å., 1509
 Hansson J., 1777
 Hargreaves A. J., 1137

- Harhammer R., 1789
 Harrington J. A., 1165
 Harris C., 679
 Hartigan D. J., 1981
 Hashida M., 853
 Hatzelmann A., 2259
 Hawley J., 947
 Hays E. T., 1683
 Heesbeen E. C., 1481
 Hegardt F. G., 1373
 Hennies H.-H., 2289
 Herchuelz A., 1381
 Hermann M., 1381
 Hermans E., 77, 89
 Herrlich P., 129
 Heylings J. R., 1271
 Hidioglou N., 1561
 Hill B. T., 775
 Hill S. J., 947
 Hinds M., 387
 Hininger I., 1827
 Hinshaw J. E., 15
 Hiratsuka A., 1151
 Hirayama K., 1525
 Hiroi T., 1957
 Hispard E., 1503
 Hocman G., 515
 Hodnick W. F., 573
 Hoekstra Y., 289
 Holler T., 411
 Holt S. J., 117
 Hong C.-Y., 549
 Hoos L. M., 1545
 Hopkins C. R., 151
 Hoppensteadt D., 1241
 Hori R., 1089
 Horowitz E. M., 2137
 Hosking L. K., 775
 Houchi H., 1309
 Hough L. B., 397
 Hourani S. M. O., 1013
 Houston J. B., 1469
 Houze P., 1835
 Howl J., 1497
 Hsueh C.-T., 1019
 Huang C., 2029
 Huang H.-Y., 859
 Hunt S. P., 975
 Huston-Lyons D., 1917

 Idle J. R., 1157
 Ignatius A., 203
 Ikeda S., 2187
 Ikezoe H., 1091
 Ilett K. F., 914
 Iley J., 275
 Imakura Y., 1920
 Imaoka S., 247
 Inaba T., 1091
 Inazu N., 1489
 Ingram D. M., 914
 Inman C. B., 117
 Inui K.-I., 1089
 Irita K., 447
 Ishimura Y., 1309, 1751
 Ito S., 241

 Itoh K., 1357
 Itoh S., 1357
 Ivy G. O., 1333
 Iwasaki K., 727
 Iwasaki S., 1593

 Jacobs J. J., 827
 Jacobs R. S., 1427
 Jaiswal A. K., 2011
 Jančinová V., 2207
 Jansen G., 659
 Jansen M., 1067
 Jarvis W. D., 839
 Jarzyna R., 1387
 Jensen P. B., 2105
 Jensen P. S., 2105
 Ji L. L., 877
 Jiang C., 1531
 Jochheim C. M., 1197
 Johansen T., 1731
 Johnson G. D., 625
 Johnson S. W., 689
 Jolivet J., 659
 Jones D. R., 1643
 Jones G., 987
 Jope R. S., 429
 Joseph P., 2011
 Joulain C., 1315
 Jungnelius U., 1777
 Jurzak M., 1497

 Kadlubar F. F., 914
 Kaeck M., 1531
 Kamataki T., 1357
 Kamath N., 1701
 Kamyshanskaya N. S., 303
 Kanai S., 1333
 Kangas L., 1883
 Kasai N., 1091
 Kashiya E., 1357
 Kashfi K., 1903
 Kass G. E. N., 2147
 Kastin A. J., 699
 Katiyar J. C., 2253
 Katoh I., 1751
 Katsura T., 1089
 Katz Y., 910
 Kaushal A., 827
 Kauffman H. F., 289
 Kawashima H., 1339
 Kaye S. B., 257
 Keen M., 953
 Kende A. S., 1965
 Kennard N., 93
 Kernalguen D., 2302
 Kerr B. M., 1969
 Kerr D., 281
 Kezdy F. J., 2017
 Khan M. M., 2097
 Khokhar A. R., 1635
 Kido Y., 1635
 Kim K. D., 1965
 Kim K.-T., 1262
 Kim N. D., 531, 541
 Kim N., 1607
 Kim S. G., 531, 541

- Kimmitt S. M., 2069
 King A. R., 469
 Kirk C. J., 1497
 Kinkel A. A., 303
 Kiso T., 241
 Kiss Z., 1581
 Kitabgi P., 43
 Kitani K., 1333
 Kjeldsen E., 2105
 Klein J., 411
 Klein R. D., 1705
 Klein S. M., 1969
 Knaus E. E., 1615
 Knick V. C., 1067
 Kobayashi H., 1607
 Kocan G. P., 1029
 van den Koedijk C. D. M. A., 1927
 Koga A., 447
 Kohn F. R., 1553
 Koiso Y., 1593
 Kögl C., 2201
 Konopa J., 2269, 2279
 Kothapalli R., 1909
 Kozlov A. B., 795
 Krane A., 953
 Kriegler A., 1039
 Kroetz D. L., 1969
 Kumar R., 1615
 Kung A. H. C., 1553
 Kuppusamy U. R., 521
 Kurosawa K., 447
 Kuroyanagi M., 995
 Kusaka M., 137
 Kuzis K., 103
 Kwak J. Y., 531
 Kwak M. K., 531, 541

 Lachance C., 871
 Ladefoged O., 651
 Laduron P. M., 3, 53
 Laduron P., 43
 Lagarde M., 781, 1315
 Lam H. R., 651
 Lambert D. G., 939
 Lambrecht R. W., 1669
 Lang N. P., 914
 Lanyon L. F., 1231
 Larrison R. W., 347
 Lauwers W., 737
 Lauwerys R., 1395
 Lavoie J.-C., 871
 Lawrence R. A., 1567
 Le Bot M.-A., 2302
 Le Fur G., 633
 Le Jeune L., 737
 LeBlanc G. A., 359
 Lebrun P., 1381
 Lech J. J., 893
 Leclercq G., 748
 Lee J. I., 1067
 Lee K.-H., 1920
 Légaré D., 1939
 Lengfelder E., 555
 Lennard M. S., 1151, 1295
 Lerner-Marmarosh N., 1965
 Lescop P., 21

 Leszczynska-Piziak J., 563
 Levy R. H., 1969
 Lewis K., 581
 Li Q., 2298
 Li Y., 1593
 Lichtenstein L. M., 2137
 Lietz T., 1387
 Lin L. Y., 1151
 Lin S., 1405
 Lin T.-S., 171
 Lin W.-H., 1575
 Lin Y., 1553
 Lind M. J., 1157
 Lindup W. E., 179, 1127
 Linhardt R. J., 1241
 Lison D., 1395
 Liu J., 1241
 Liu M.-C., 171
 Löffelholz K., 411
 Lo Y.-C., 549
 de Locht M., 1843
 Lohmeyer M., 975
 Lomonte B., 1509
 Longmire A. W., 1173
 Louzao M. C., 591, 1813
 Lowen G. T., 1165
 Lown J. W., 373
 Lu J., 1531
 Lu S. C., 859
 Lubega G. W., 1705
 Lucas D., 1503
 Lucas M., 667
 Ludueña R. F., 1593, 1677
 Lui E. M. K., 1909
 Lund M., 673
 Luo D., 2111
 Luo M.-Z., 171
 Luquita M. G., 1179
 Lynch B. J., 2171

 Maack T., 1693
 Maare C., 2125
 Macdermot J., 953
 Macglashan Jr. D. W., 2137
 Madan A., 1465
 Madeira V. M. C., 1989
 Madhubala R., 253, 611
 Makin H. L. J., 987
 Malaisse W. J., 1519
 Malatesta F., 2221
 Maloteaux J. M., 77, 89
 Mancini W. R., 1285
 Mannervik B., 1777
 Marchand F., 789
 Marcucci K., 1575
 Margioris A. N., 1875
 Mariani M., 295
 Marks G. S., 2069
 Marsh E. R., 1917
 Marshall L. A., 1661
 Martini R., 905
 Maser E., 1805
 Mashkovsky M. D., 303
 Masini A., 217
 Masta A., 581
 Masuda S., 853

- Masuda Y., 1309, 1751
 Matherly L. H., 1094
 Matsuda H., 727
 Matsumoto Y., 2055
 Mattioli A., 643
 Matulewicz M. C., 2187
 Maxwell D. M., 347
 Mayatepek E., 1453
 Mayer J. M., 753
 Mayer R. T., 763, 893
 Mayes J., 387
 Mazella J., 43
 Maffrand J. P., 633
 McCrodden J. M., 617
 McElvain J. S., 1627
 McGregor D. G., 1545
 McGregor K., 827
 McIvor R. S., 1207
 McLean W. G., 1137
 McManus M. E., 1767
 McNamee J. P., 2069
 McNaughton L., 975
 Medvedev A. E., 303
 Meiergerd S. M., 1627
 Meijer D. K. F., 2193
 Meinetsberger E., 203
 Melmon K. L., 2097
 Meloni A., 2221
 Melvin W. T., 1457
 Menez C., 1503
 Menez J.-F., 1503
 Menzel S., 1267
 Merville M.-P., 145
 Meshul C., 103
 Meskini N., 781
 Meydani M., 2005
 Meyer Th., 373
 leclercq-Meyer V., 1519
 Michel J., 827
 Midzuhashi K., 717
 Miles A. M., 1897
 Milgrom E., 21
 Mimura M., 1957
 Minchin R. F., 914
 Miners J. O., 1767
 Misawa S., 247
 Misenheimer T. M., 673
 Mitchell E. W., 877
 Miwa M., 995
 Miyake A., 1339
 Miyasaka K., 1333
 Mochizuki S., 1339
 Mohrs K.-H., 2259
 Molinari A., 2221
 Mollace V., 1737
 Mongelli N., 295
 Monkman S. C., 1157
 Moor A. C. E., 1717
 Moreira M. F., 1693
 Morel G., 63
 Morin D., 175
 Morris J. A., 1207
 Morrison J. G., 257
 Morrow J. D., 1173
 Moskvitina T. A., 303
 Mottino A. D., 1179
 Mouscadet J. F., 1821
 Mueller R. A., 1029
 Mukhopadhyay R., 253, 611
 Müller A., 129
 Müller-Peddinghaus R., 2259
 Münzel P. A., 1445
 Mullin R. J., 1067
 Mullins F. H., 1137
 Mundy W. R., 1417
 Murakumo Y., 1309
 Murray M., 905
 Musgrave I. F., 233
 Nagamine T., 594
 Nagaoka M., 717
 Nagasawa H. T., 922
 Nagase K., 727
 Nagele A., 555
 Nagendra S. N., 1465
 Nahir M., 1759
 Nakamura M., 247
 Nakao A., 1029
 Nakazato Y., 241
 Nalwalk J. W., 397
 Nanji A. A., 745, 925, 2005
 Nankervis R., 281
 Nastruzzi C., 599
 Nau H., 485
 Nebert D. W., 25
 Némóz G., 781, 1315
 Neyts J., 39, 2187
 Ngo E. O., 421
 Nguyen T. D., 403
 Nicol M. R., 1145
 Nielsen D., 2125
 Nielsen M., 742
 Nielsen O. F., 2105
 Nikawa T., 1007
 Nikiforov A. A., 815, 821
 Nishi R., 103
 Nishikawa M., 853
 Nistico G., 1737
 Nitsch R. M., 1275
 Nixon P. F., 1561
 Noda K., 727
 Noël F., 331
 Nordhoff A., 1453
 Nordmann R., 1827, 1835
 Northover B. J., 2163
 Nosál R., 2207
 Nostrandt A. C., 1417
 Nouel D., 43
 Novak R. F., 531
 Numazawa M., 717
 Nürnberg B., 1789
 Nutter L. M., 421
 O'Brian C. A., 425
 O'Brien E. M., 617
 O'Reilly C. M., 757
 Octave J.-N., 89
 Oda Y., 1061
 Odomi M., 1357
 Oesch F., 505
 Ohnuma T., 1607
 Ohta T., 241

- Ohuchi T., 1309
 Oka M., 1309, 1751
 Okabe H., 447
 Okyayuz-Baklouti I., 781
 Olinga P., 2193
 Onodera S., 887
 Ordoñez D., 1859
 Orfanelli M.-T., 1835
 Ormerod M. G., 187
 Orr M. S., 317
 Orrenius S., 2147
 Ortega G., 209
 Ostrachovitch E. A., 795
 Ostretsova I. B., 815, 821
 Ouellette M., 1939
 Ozols R. F., 689
 Offer G. J., 2171
 Østergaard G., 651

 Packer L., 1725
 Pai S. B., 171
 Palmgren M., 699
 Pampori N. A., 1221, 1999
 Papadogiorgaki E., 1875
 Pardini R. S., 573
 Pardon R. S., 331
 Park G. R., 1253
 Parslow R. A., 1497
 Parsons P. G., 827
 Partis R. A., 1029
 Pastori W., 295
 Pearson A. D. J., 1157
 Pedersen J. B., 179
 Peereboom-Stegman J. H. J., 453
 Pepe J. A., 1669
 Pereira E., 1851
 Pérez-Gilabert M., 2227
 Perez R. P., 689
 Perianin A., 1797
 Perretti M., 931
 Perrot-Appanat M., 21
 Persson M. G., 1047
 Persson S.-Å., 499
 Pervin A., 1241
 Peters G. J., 659, 1325
 Peterson M. G., 127
 Peterson V. A., 2157
 Petriková M., 2207
 Pettit G. R., 839
 Pham-Nguyen M.-H., 1655
 Philips M., 563
 Phillips D., 581
 Pick C. G., 910
 Pinard M.-F., 659
 Pinedo H. M., 1325
 Pirotte B., 1381
 Pistelli A., 1737
 Pizzorno G., 1981
 Platt K.-L., 505
 Plumb J. A., 257
 Po A. L. W., 1121
 Poddar R. K., 2049
 Porter D. J. T., 1165
 Povirk L. F., 317, 839
 Pozzi E. J. S., 1179
 Prætorius H., 1731

 Prasad V., 1593
 Price P., 745
 Prichard R. K., 1705
 Prigent A. F., 781, 1315
 Pujol C. A., 2187
 Pulselli R., 1781

 Qiu R., 2097
 Quardokus E. M., 893
 Quarto N., 111

 Raake W., 203
 Raddatz S., 2259
 Radler-Pohl A., 129
 Rahmsdorf H. J., 129
 Rais S., 1797
 Raja K., 969
 Randolph J. K., 317, 1449
 Raufaste B. B. D., 633
 Raveh L., 347
 Rawlings J. M., 1271
 Ray K., 93
 Reddy S. L., 2079
 Reguera R., 1859
 Reig J. A., 225
 Reimann W., 2289
 Ren Z., 1405
 Renesto P., 1401
 Reusser F., 2017
 Reyes-Parada M., 1365
 Reyman D., 2187
 Ribiere C., 1827
 Riche C., 2302
 Ridderström M., 1777
 Rietjens I. M. C. M., 1949
 Rijkse G., 1481
 Rimarachin J. A., 1903
 Ringborg U., 1777
 Roach M. C., 1593, 1677
 Roberts II, L. J., 1173
 Robertson I. G. C., 584
 Robins M. J., 365
 Rogers L. K., 2079
 Rojeková I., 515
 Roman A. M., 111
 Romero D. L., 2017
 Rosen D. M., 1587
 Roth J. A., 1575
 Rouach H., 1835
 Roy M. B., 711
 Roy R., 1461
 Rush J., 1661
 Russel F. G. M., 453
 Russello O., 1981
 Ruthven C. R. J., 2294
 Ryan M. P., 757
 Ryffel B., 1435

 Sabourault D., 1827
 Sachsenmaier C., 129
 Sadrzadeh S. M. H., 745, 925, 2005
 Sakurai H., 1920
 Sala F., 225
 Salvemini D., 1737
 Salwey M., 947
 Samano V., 365

- Sánchez-Ferrer A., 2227
 Sanchez K., 1683
 Sánchez-Margalet V., 667
 Sanda D., 1091
 Sandker G. W., 2193
 Sandler M., 2294
 Sanz A., 667
 Sapena R., 175
 Saraswati M., 1965
 Sarau H. M., 1661
 Sarti P., 2221
 Sass J. O., 485
 Sassa S., 1187
 Sato Y., 1333
 Satoh T., 1489
 Sauernheimer C., 1267
 Saffar-Boccara C., 1827
 Schenk J. O., 1627
 Schirmer R. H., 1453
 Schmidt D. B., 1661
 Schmitz D. A., 1151
 Schneider W., 2201
 Schneider Y.-J., 1843
 Schornagel J. H., 659
 Schuch G., 1007
 Schunack W., 1789
 Schutz M. B., 347
 Schweich M. D., 1395
 Scorza Ma. C., 1365
 Seah V. M. Y., 1743
 Sehested M., 2105
 Seidel A., 505
 Seifert R., 233, 1789
 Sekiguchi T., 594
 Selhub J., 1561
 Senior J., 267
 Sernia C., 281
 Serra D., 1373
 Sestili P., 1258
 Setanoians A., 257
 Sexton T., 711
 Shafer T. J., 1417
 Shapiro B. H., 1221, 1999
 Sharma M. C., 2011
 Shaw C. A., 1109
 Shechter Y., 1537
 Shellard S. A., 775
 Sherman L., 103
 Shimada T., 247, 727, 1957
 Shiraga T., 727
 Shisheva A., 1537
 Shomrat D., 1759
 Siddik Z. H., 1635
 Sies H., 1007
 Silveira R., 1365
 Silverstone A. E., 2039
 Singh S. P., 2253
 Singh S. V., 1701
 Skladanowski A., 2269, 2279
 Skovsgaard T., 2125
 Skratt J. J., 397
 Slooff M. J. H., 2193
 Smart D., 939
 Smith A. A., 1545
 Smith A. I., 1497
 Smith C. V., 2079
 Smith G. K., 1067
 Smith G., 763, 939
 Smith W. G., 1029
 Smithers N., 93
 Smitskamp-Wilms E., 1325
 Smyth J. F., 1345
 Snoeck R., 2187
 Snowden R. T., 187
 Soares L., 387
 Sobel M., 137
 Sohlenius A.-K., 2213
 Sola F., 295
 Solano F., 667
 Solari R., 93
 Sørensen B. S., 2105
 Souček P., 2233
 Specter S., 2243
 Spector T., 1165
 Spiegelman V. S., 1867
 Spinella M. J., 337
 Srivastava J. K., 2253
 Srivastava V. M. L., 2253
 Staal G. E. J., 1481
 Stables J., 1067
 Stenström A., 499
 Stone V., 625
 Stournaras C., 1875
 Strath M., 418
 Strobl J. S., 2157
 Sturm R. A., 827
 Subra F., 1821
 Suga T., 918
 Sugahara C., 1957
 Sugatani J., 995
 Sugawara H., 887
 Sugiyama H., 918
 Suh B.-C., 1262
 Sun X.-M., 187
 Sundberg C., 2213
 Suttie J. W., 673
 Suzuki Y., 995
 Swift L. L., 1173
 Swirsky-Simon H., 2302
 Tagawa K., 447
 Tahar M. S., 1401
 Takahashi S., 447
 Takakura Y., 853
 Takano M., 1089
 Tanaka E., 247
 Tanaka K., 1061
 Tanimura A., 2055
 Tanne Z., 1759
 Tarbit M. H., 1253
 Tarkowski A., 1509
 Tarpley W. G., 2017
 Tassaneeyakul W., 1767
 Tassaneeyakul W., 1767
 Taudou G., 789
 Tawa R., 1920
 Taylor C. G., 2113
 Teitel C. H., 914
 Tempel K., 203
 Teng C.-M., 549
 Testa B., 753, 2307
 Theodoropoulos P. A., 1875

Thijssen J. H. H., 1927
 Thomas P., 925
 Thomas R. C., 2017
 Thompson H. J., 1531
 Thompson S., 763
 Thornalley P. J., 418
 Thull U., 2307
 Thummel K. E., 1969
 Tillement J. P., 175, 415
 Tilson H. A., 1417
 Timmermans A., 289
 Tipton K. F., 617, 1365
 Tkalcevic G. T., 1701
 Tobise K., 887
 Tojyo Y., 2055
 Tokuda H., 853
 Tomita Y., 1089
 Topley P., 1067
 Traylor R. S., 839
 Trenti T., 217
 Tritschler H., 1725
 Truchet I., 111
 Tsapara A., 1875
 Tucker G. T., 1151, 1295
 Tukey R. H., 1767
 de Tullio P., 1381
 Tuma D. J., 1561
 Tupy J. L., 127
 Turner A. J., 839, 961

 Ueda F., 969
 Ueno A., 995
 Umehara K., 995
 Urien S., 415

 Vásquez-Vivar J., 309
 Van Hove C., 737
 Van Nyen G., 737
 Van Wauwe J., 737
 VandenBranden M., 1643
 Vane J., 1737
 Vedejs E., 1405
 Verdonck L. F., 1481
 Veronese M. E., 1767
 Verrier C., 1683
 Vervoort J., 1949
 Vieira M. A. R., 1693
 Vieytes M. R., 1813
 Vieytes M. R., 591
 Vincent S. R., 2111
 Viniegra S., 225
 de Vries H. E., 1717

 Wagner G., 1007
 Waibel K. H., 347
 Walker D., 1157
 Walker S. W., 1145
 van der Walt B. J., 1039
 Wang L., 1615
 Ward N. E., 425
 Waxman D. J., 1079
 Weaver R. J., 1457
 Weaver R. J., 763
 Webb T. E., 1655
 Weber E., 1435
 Weert B., 2193

Weis M., 2147
 Weissmann G., 563
 Weizman R., 910
 Weksler B. B., 1903
 Westin E. H., 337
 Weyer A., 789
 Wheatley M., 1497
 White J. O., 197
 Whittaker A., 947
 Wiebe L. I., 1615
 Wilkinson M., 1109
 Williams A. M., 457
 Williams B. C., 1145
 Williams M. B., 429
 Williams M. S., 1285
 Wilson A. C., 1531
 Wilson R. J. M., 418
 Wilton J. C., 625
 Wiseman H., 493
 Wishart G. C., 257
 Witt M. R., 742
 Witvrouw M., 2187
 Woerly G., 1435
 Wolfe A. D., 347
 Wolters H., 2193
 Wong K. O., 477
 Wong K. P., 477, 1743
 Wong S. S. C., 827
 Woodfork K. A., 2157
 Woods H. F., 1151
 Woods K. E., 1449
 Woodward D. F., 1567
 Woodward W. R., 103
 Workman P., 975
 Wouterse A. C., 453
 Wrighton S. A., 1643
 Wu J., 1099
 Wu T.-W., 1099
 Wurden C. J., 1969
 Wyatt I., 1271

 Yamada J., 918
 Yamakawa M., 447
 Yamanaka T., 925
 Yamashita A., 1920
 Yamazaki H., 727, 1957
 Yamazaki R., 995
 Yanai J., 910
 Yasuhara M., 1089
 Yasutake A., 1525
 Yates M. S., 2298
 Yeung A. T., 689
 Yokoi T., 1357
 Yokota H., 1091
 Yoshitake J.-I., 447
 Yoshizumi M., 1751
 Youdim M. B. H., 617, 1759
 Yu P. H., 1055
 Yuan Z.-M., 1587
 Yuasa A., 1091

 Zadina J. E., 699
 Zavortink D., 1427
 Zeller H.-D., 505
 Zeng L.-H., 1099
 Zhang J.-G., 1127

Zhang K., 2063
Zhang X.-M., 827
Zheng Z. M., 2243
Zhou X. H., 1121
Zilletti L., 2181
Zimmerman T. P., 1165

Zimmermann J., 373
Zini R., 175
Zipf T. F., 387
Zuo D.-M., 1055
Zwelling L. A., 387
van Zyl J. M., 1039

NOTES FOR CONTRIBUTORS OF FULL-LENGTH PAPERS, COMMENTARIES AND SHORT COMMUNICATIONS

Submission of Contributions

Full-length papers and Short Communications should be sent to a Regional Editor: addresses are given inside the front cover. Papers from the Americas should be sent to Professor A. C. Sartorelli, papers from Europe to Professor J. E. Gielen and papers from the rest of the world to either the American or European office. Commentaries are normally solicited by Professor H. R. Behrman, but suggestions from readers of topics and authors will be welcome. When readers suggest topics, they will normally be asked to submit a brief outline of the proposed Commentary for review. A decision to commission the Commentary will be made as rapidly as possible after receipt of these outlines.

The Editors welcome submission by the authors of the names, addresses, telephone and FAX numbers of 5 or 6 individuals who could, in their opinion, expertly review their submitted manuscript. The Editors, of course, reserve the right to use reviewers of their choice. An assurance should be given that the material has not been published or submitted elsewhere.

Form of Contributions

Full-length papers should be submitted in English with an abstract summarizing briefly the essential contents. The manuscript (including figure captions and references) should be sent in triplicate and should be typed on one side of the paper, double-spaced and with margins. The form generally accepted by learned societies should be followed: Abstract, Introduction (with *no* heading), Materials and Methods, Results and Discussion. A short running title of approximately 50 characters should also be provided. Manuscripts must be accompanied by copies of all relevant articles that are cited as in press or under consideration by another journal.

In the case of *Short Communications*, sections may be combined, e.g. Materials and Methods and Results or Results and Discussion; an abstract should also accompany these papers. Short Communications should be no more than 8 double-spaced typed pages including tables and figures.

Commentaries are short research editorials that should be between 3000 and 5000 words in length (12–20 typewritten pages, double-spaced).

Authors should consult recent issues of *Biochemical Pharmacology* for guidance on style and preferred format. For abstracting purposes, *please include the first name of each author of a paper to be published in the Journal*. In addition, 6 *key words* or short phrases should be added at the bottom of the abstract page to assist in indexing the article and which may be published with the Abstract. Use terms from the Subject Headings from *Index Medicus* when possible. The original manuscript and diagrams will be discarded 1 month after publication unless the publisher is requested to return original material to the author. *Contributors are requested to indicate clearly on the title page of the manuscript the name, address, telephone number and FAX number, if available, of the author to whom proofs and correspondence should be sent.*

Proofs and Reprints

A reprint order form will be supplied with page proofs sent to the authors for checking. *Any corrections to proofs must be restricted to printer's errors*: other than these, substantial changes at this stage may be charged to the author.

Nomenclature and Abbreviations

Where possible, nomenclature and abbreviations should be in accord with internationally agreed rules. When an enzyme or compound is first mentioned in the text, specification by its code number accompanied by its systematic name (as distinct from its trivial name) is requested by the Editors, but not checked for correctness. Official names of drugs are preferred to trade names. If trade names are used, they should be capitalized and the trademark included. When listing the source from which a compound is obtained, give both the name and location of the company.

It is necessary that the abbreviations used in the main text should be defined in a footnote on the title page of the article. Abbreviations used in the Abstract must be defined within the Abstract as this must be comprehensible without consulting the main text. Abbreviations, including internationally accepted biochemical abbreviations, that can be used without definition, except in titles, can be found in issues 1 and 7 of each volume.

The mass of a biochemical entity should be specified as either relative molecular mass (M_r , not molecular weight) or as molecular mass (expressed in kDa). M_r should not be expressed in daltons. Use either M_r or kDa consistently throughout a paper.

Temperatures denoted by an unqualified degree symbol $^{\circ}$ are assumed to be Centigrade. For solution strengths, percentages should be expressed by the sign %, followed in cases of ambiguity by w/w, w/v or v/v [e.g. 5% (w/v) means 5 g/100 mL]. In spectrophotometry, extinction (E) should be used, rather than optical density.

Statements with regard to statistical significance should be accompanied by probability values derived from appropriate statistical tests.

The following sources give useful guidance on the preparation of manuscripts:

1. Suggestions and Instructions to Authors, *Biochem J* **289**: 1–15, 1993. It is particularly requested that authors follow the instructions on isotopically labelled compounds.
2. Terminology and Abbreviations, *J Biol Chem* **268**: 745–753, 1993.
3. International Union of Biochemistry, *Enzyme Nomenclature*. Academic Press, 1984.
4. CBE Style Manual Committee, *CBE Style Manual: A Guide for Authors, Editors and Publishers in the Biological Sciences*, 5th Edn., Council of Biology Editors, Inc., Bethesda, MD 20814.

Reproduction of Line Drawings

These should normally be about twice the final size required. They should be separate from the typescript with captions typed together on a separate sheet. Illustrations should not be pasted to separate sheets of paper.

Line drawings and figures showing mechanisms or complete chemical formula can also be reproduced in colour (see next page).

Reproduction of Black and White Photographs

These should be presented in the form of good quality glossy prints.

Reproduction of Colour Photographs

Colour photographs, such as histochemical sections can be reproduced in colour, but a charge relating to the reproduction of material in colour will be made. An estimate of the charge can be obtained from the publishers.

Tables

Authors are asked to keep tabular matter to a minimum. Each table and every column should be provided with an explanatory heading, with units of measure clearly indicated. The same data should not be reproduced in both tables and figures. Footnotes to a table should be indicated by the same symbols used in the text. Tables and illustrations should be completely intelligible without reference to the text.

References

References should be numbered consecutively in square brackets in the text, the full reference being cited in a numbered list at the end of the paper. References should contain the names and initials of *all* the authors of each paper, together with the full title of the paper, the abbreviated journal title, the volume number, the first and last page numbers and the year as follows:

Journal

1. Reiter R and Burk RF, Effect of oxygen tension on the generation of alkanes and malondialdehyde by peroxidizing rat liver microsomes. *Biochem Pharmacol* 36: 925-929, 1987.

Book

2. Winer BJ, *Statistical Principles in Experimental Design*. McGraw-Hill, New York, 1971.

Chapter in a book

3. Shatkin AJ, Colorimetric reactions for DNA, RNA, and protein determinations. In: *Fundamental Techniques in Virology* (Eds. Habel K and Salzman NP), pp. 231-237. Academic Press, New York, 1969.

Symposium proceedings

4. Wefers H and Sies H, Generation of photoemissive species during quinone redox cycling. In: *Bioreduction in the Activation of Drugs, Proceedings of the Second Biochemical Pharmacology Symposium, Oxford, UK, 25-26 July 1985* (Eds. Alexander P, Gielen J and Sartorelli AC), pp. 22-24. Pergamon Press, Oxford, 1986.

The titles of journals should be abbreviated in accordance with *Index Medicus*.

Footnotes

Footnotes, as distinct from literature references, should be indicated by the following symbols: *, †, ‡, §, ||, ¶, starting afresh on each page. They should not be included in the numbered reference system. Footnotes should be used for references to unpublished work (including work submitted for publication), personal communications (the wording of the quoted material should be verified with the person who supplied the information, and a letter of permission to use this material must be obtained from the source and submitted), proprietary names of trademarked drugs and other material not appropriately referred to in the text or in the numbered reference list, but should be kept to a minimum.

INSTRUCTIONS FOR THE PREPARATION OF RAPID COMMUNICATIONS

Papers should be submitted in English with an abstract summarising, briefly, the contents. The typewritten manuscript of a Rapid Communication is reproduced *photographically*, and each communication is a separate entity: an odd number of pages results in a blank page, which costs almost as much to produce as a full page. In general, only papers of 4 or 6 pages will be accepted.

1. Abbreviations must be listed in a footnote on the title page.
2. Manuscripts should be typed, "space and a half" (3 typewriter notches), using a black ribbon (blue ink cannot be reproduced), on good quality white bond paper or on special lay sheets available from any of the Regional Editors. The typist should ensure a clean, clear impression of the letters. Two copies (carbon or photocopy) should accompany the original.
3. Any good quality paper may be used, provided the actual typing area is 20 cm (7 $\frac{3}{4}$ in.) by 31 cm (12 $\frac{1}{4}$ in.), the margins being provided during reproduction. The title should be typed in *capital letters*, centred on the width of page 1 with the title at least 5 cm (2 in.) from the top of the page. After a two-line (quadruple) space, the author's name should be typed, and after a one-line (double) space, the author's address should be typed, capitalizing the first letter of all main words. A three-line (sextuple) space following the author's address should be left before typing an abstract of the article followed by another three-line space before typing the text of the article. The typing area of page 1, including the title, should be 20 cm (7 $\frac{3}{4}$ in.) wide by 29 $\frac{1}{2}$ cm (11 $\frac{1}{2}$ in.) deep. The typing area of *all* other pages should be extended to a depth of 31 cm (12 $\frac{1}{4}$ in.).
4. The drawing of formulae, graphs and other figures should be included in the text, so as not to exceed the specified typing area. Illustrations may be in the form of glossy prints *pasted* onto the appropriate place or else they may be carefully drawn in black ink onto the typing area in a size that will remain legible after a slight reduction. Ensure that the caption does not become confused with the text. Captions should be typed "single space" (2 typewriter notches).
5. Each page should be numbered lightly at the bottom of the sheet in blue pencil.
6. An assurance should be given that the material has not been published or submitted elsewhere in preliminary form.

Reprints

To reduce production time for Rapid Communications, please indicate the number of reprints (lots of 50) required *when submitting* the manuscript. Orders received after a particular issue has been printed will be delayed and a separate price quotation will be necessary.

Submission of Rapid Communications

Rapid Communications should be sent with two copies to the appropriate Regional Editor.