

Contents

Contents of Number 1/2

Original Communications

- Identification of (*R*)-Vicianin in *Davallia trichomanoides* Blume
P. A. LIZOTTE and J. E. POULTON 5
- Differential Regulation of Two Genes Controlling the Biosynthesis of Isovitexin 7-O-Galactoside in *Silene* Plants
J. M. STEYNS and J. V. BREDERODE 9
- Biosynthetic Capacity of *Stachys* Seedlings for Verbascoside and Related Caffeoyl Derivatives
C. ANDARY and R. K. IBRAHIM 18
- Isolation and Separation of Epidermal and Mesophyll Protoplasts from Rye Primary Leaves – Tissue-Specific Characteristics of Secondary Phenolic Product Accumulation
M. SCHULZ and G. WEISSENBOCK 22
- Partial Purification and Some Properties of 1-Sinapoylglucose: Choline Sinapoyltransferase (“Sinapine Synthase”) from Seeds of *Raphanus sativus* L. and *Sinapis alba* L.
W. GRÄWE and D. STRACK 28
- Biosynthesis of the Furanoacetylene Phytoalexin Weyerone in *Vicia faba*
N. A. AL-DOURI and P. M. DEWICK 34
- Host-Pathogen Interactions. XXX. Characterization of Elicitors of Phytoalexin Accumulation in Soybean Released from Soybean Cell Walls by Endopolygalacturonic Acid Lyase
K. R. DAVIS, A. G. DARVILL, P. ALBERSHEIM, and A. DELL 39
- Inhibition of Phenylalanine Ammonia-Lyase *in vitro* and *in vivo* by (1-Amino-2-phenylethyl)phosphonic Acid, the Phosphonic Analogue of Phenylalanine
B. LABER, H.-H. KILTZ, and N. AMRHEIN 49
- Flavin Nucleotide-Dependent 3-Hydroxylation of 4-Hydroxyphenylpropanoid Carboxylic Acids by Particulate Preparations from Potato Tubers
J. M. BONIWELL and V. S. BUTT 56
- Use of Immunotitration to Demonstrate Phytochrome-Mediated Synthesis *de novo* of Chalcone Synthase and Phenylalanine Ammonia Lyase in Mustard Seedling Cotyledons
R. BRÖDENFELDT and H. MOHR 61
- Tyrosine Biosynthesis in *Sorghum bicolor*: Isolation and Regulatory Properties of Arogenate Dehydrogenase
J. A. CONNELLY and E. E. CONN 69
- Tyrosine Biosynthesis in *Sorghum bicolor*: Characteristics of Prephenate Aminotransferase
D. L. SIEHL, J. A. CONNELLY, and E. E. CONN 79
- Flavonoids and Terpenoids from the Exudates of Some *Baccharis* Species
E. WOLLENWEBER, I. SCHÖBER, P. DOSTAL, D. HRADETZKY, F. J. ARRIAGA-GINER, and G. YATSKIEVYCH 87
- Transformation-Related Cellular Protein p53: Increased Level in Untransformed Rat Cells Following Treatment with the Tumorpromoter, Tetradecanoylphorbol-Acetate
M. HEBEL, G. BRANDNER, H. K. HOCHKEPPEL, and D. G. BRAUN 94
- Glycosphingolipid Analysis of Human Myeloid Leukemias (In German)
B. KNIEP and P. F. MÜHLRADT 100
- Properties of Vinorine Synthase – the *Rauwolfia* Enzyme Involved in the Formation of the Ajmaline Skeleton
A. PFITZNER, L. POLZ, and J. STÖCKIGT 103
- High Performance Liquid Chromatography Coupled with Radioactivity Detection: A Powerful Tool for Determining Drug Metabolite Profiles in Biological Fluids
K.-O. VOLLMER, W. KLEMISCH, and A. v. HODENBERG 115
- Partial Purification and Characterization of S-Adenosyl-L-Methionine:Norreticuline N-Methyltransferases from *Berberis* Cell Suspension Cultures
CHI-KIT WAT, P. STEFFENS, and M. H. ZENK 126



Biosynthesis of 4-Formyl-4-imidazoline-2-on, the Heterocyclic Base of Nikkomycin X R.-M. SCHMIDT, H. PAPE, and M. JUNACK	135	the White-Rot Fungus, <i>Phanerochaete chrysosporium</i> M. ARJMAND and H. SANDERMANN JR.	206
Metabolism of the Plant Growth Regulator (E)-[³ H]2-Ethylhex-2-enoic Acid in <i>Hordeum vulgare</i> B. SCHNEIDER, H.-R. SCHÜTTE, and A. PREISS	141	Further Studies on the Biosynthesis of Granaticin XIAN-GUO HE, CHIU-CHIN CHANG, CHING-JER CHANG, J. C. VEDERAS, A. G. MCINNES, J. A. WALTER, and H. G. FLOSS	215
Metabolism and Degradation of Nicotinic Acid in Parsley (<i>Petroselinum hortense</i>) Cell Suspension Cultures and Seedlings L. SCHWENEN, D. KOMOSSA, and W. BARZ	148	Minimal Time Requirement for Lasting Elicitor Effects in Cultured Parsley Cells H. STRASSER and U. MATERN	222
Basal Blotches and Blotchlessness of Poppy Flowers: A Chemogenetic Characterization (In German) H. BÖHM	158	Elicitor-Stimulated Furanocoumarin Biosynthesis in Cultured Parsley-Cells: S-Adenosyl-L-Methionine:Bergaptol and S-Adenosyl-L-Methionine:Xanthotoxol O-Methyltransferases K. D. HAUFFE, K. HAHLBROCK, and D. SCHEEL	228
Chemical Investigations of Tropical Medicinal Plants, XXI. Long Chain Alkyl Esters of Ferulic and <i>p</i> -Coumaric Acid from <i>Bauhinia manca</i> H. ACHENBACH, M. STÖCKER, and M. A. CONSTENLA	164	The Topology of the Plastoquinone and Herbicide Binding Peptides of Photosystem II in the Thylakoid Membrane A. TREBST	240
<i>Cyanophora paradoxa</i> : Fatty Acids and Fatty Acid Synthesis <i>in vitro</i> H. KLEINIG, P. BEYER, C. SCHUBERT, B. LIEDVOGEL, and F. LÜTKE-BRINKHAUS	169		
Degradation of NAD(H) by Endogenous Enzymes of Yeasts and Clostridia H.-J. SCHUETZ and H. SIMON	172		
Genetic and Biochemical Studies on the Conversion of Dihydroflavonols to Flavonols in Flowers of <i>Petunia hybrida</i> G. FORKMANN, P. DE VLAMING, R. SPRIBILLE, H. WIERING, and A. W. SCHRAM	179		
Biosynthesis of Acridone Alkaloids. A Cell-free System from <i>Ruta graveolens</i> Cell Suspension Cultures A. BAUMERT, G. SCHNEIDER, and D. GRÖGER	187		
Phytoalexin Production by Isolated Soybean Protoplasts H. MIETH, V. SPETH, and J. EBEL	193		
Composition of Lipopolysaccharides from Various Strains of <i>Rhodocrobium vannielii</i> O. HOLST, J. WECKESSER, B. RIETH, and C. S. DOW	202		
Plant Biochemistry of Xenobiotics. Mineralization of Chloroaniline/Lignin Metabolites from Wheat by			

Contents of Number 3

Original Communications

Biosynthesis of Daphnetin in <i>Daphne mezereum</i> L. ST. A. BROWN	247
Monogalloylhamamelose from <i>Hamamelis virginiana</i> (In German) G. SCHILLING and A. KELLER	253
Activation of Streptolysin S <i>in vitro</i> by Oligonucleotides A. TAKETO and Y. TAKETO	258
Optimization of Conditions for Accurate Phosphate and Total Phosphorus Assay on Lipid Samples, in Conjunction with Thin-Layer Chromatography V. M. KAPOULAS and G. TH. TSANGARIS	263
Effect of the CO ₂ -Concentration during Growth on the Oxygen Evolution Pattern under Flash Light in <i>Chlorella</i> Y. SHIRAIWA and G. H. SCHMID	269

A Large Chloroplast Thioredoxin <i>f</i> Found in Green Algae P. LANGLOTZ, W. WAGNER, and H. FOLLMANN	275	Notes	
Chlorophyll Photobleaching in Pigment-Protein Complexes R. CARPENTIER, R. M. LEBLANC, and G. BELLE-MARE	284	Influence of Temperature on the Transport of Ascorbate across Artificial Membranes as Studied by the Spin Label Technique W. LOHMANN, P. Z. TIAN, and D. HOLZ	348
Diurnal Changes of Fructose-6-phosphate,2-kinase and Fructose-2,6-bis-phosphatase Activities in Spinach Leaves M. STITT, G. MIESKES, H.-D. SÖLING, H. GROSSE, and H. W. HELDT	291	The Influence of Spin Label on the Transport of Ascorbate across Artificial Membranes W. LOHMANN, P. Z. TIAN, and D. HOLZ	351
Molecular Mechanics Investigation on Conformational Flexibility of 14 β Steroids in Drug-Receptor Interactions M. BOHL and M. WUNDERWALD	297	Effect of Magnetic Field on Ascorbic Acid Oxidase Activity, I V. S. GHOLE, P. S. DAMLE, and W. H.-P. THIEMANN	355
Alterations in the Activities of Rabbit Erythrocyte Membrane-Bound Enzymes Induced by Cholesterol Enrichment and Depletion Procedures E. KAMBER and L. KOPEIKINA-TSIBOUKIDOU	301	Oxygen Incorporation in Cleavage of ¹⁸ O-Labeled 13-Hydroperoxylinoleyl Alcohol into 12-Hydroxy-(3 <i>Z</i>)-dodecenal in Tea Chloroplasts A. HATANAKA, T. KAJIWARA, J. SEKIYA, and H. TOYOTA	359
Stimulation of Phosphatidylinositol Phosphorylation in the Sarcoplasmic Reticular Ca ²⁺ -Transport ATPase by Vanadate M. VARSÁNYI, G. BEHLE, and M. SCHÄFER	310	New Pulvinic Acid Derivatives from <i>Pulveroboletus</i> Species (Boletales) (In German) R. MARUMOTO, C. KILPERT, and W. STEGLICH	363
Relative Hypertrehalosaemic Activities of Naturally Occurring Neuropeptides from the AKH/RPCH Family G. GÄDE	315	Volatiles from the Defensive Secretions of Two Rove Beetle Species (Coleoptera: Staphylinidae) K. DETTNER and G. SCHWINGER	366
Broadband, Non-Thermal Millimeter-Wave Influence on Giant Chromosomes CHR. KOSCHNITZKE, F. KREMER, L. SANTO, A. POGLITSCH, and L. GENZEL	321	Isolation of Beef Brain Phosphonolipids by Thin Layer Chromatography: Their Identification and Silicic Acid Column Chromatographic Separation M. C. MOSCHIDIS	369

Contents of Number 4

Original Communications			
The Anal Sac Secretion of Viverrids from the Genus <i>Genetta</i> J. JACOB and H. SCHLIEMANN	325	Storage of Quinolizidine Alkaloids in Epidermal Tissues M. WINK	375
Some Remarks About Laser-Induced Mass Spectrometry of Bacteria J. ALBRECHT, E. W. SCHMID, and R. SÜSSMUTH	337	Indole Alkaloids from <i>Ochrosia elliptica</i> Plant Cell Suspension Cultures K.-H. PAWELKA and J. STÖCKIGT	381
Transepithelial Cytophagy by <i>Trichoplax adhaerens</i> F. E. Schulze (Placozoa) Feeding on Yeast H. WENDEROTH	343	Major Indole Alkaloids Produced in Cell Suspension Cultures of <i>Rhazya stricta</i> Decaisne K.-H. PAWELKA and J. STÖCKIGT	385

Determination of Hyoscyamine and Scopolamine in <i>Datura innoxia</i> Plants by High Performance Liquid Chromatography K.-H. PLANK and K. G. WAGNER	391	Characterization of a Defective Mutant of the Dahlemense Strain of Tobacco Mosaic Virus J. M. WERTZ, P. SMITAMANA, and S. SARKAR	477
Evidence for the Presence of Neutral Glycerylether Derivatives in Pollen Lipids of Pine Tree <i>Pinus halepensis</i> N. K. ANDRIKOPOULOS, A. SIAFAKA-KAPADAI, N. YANOVITS-ARGYRIADIS, and C. A. DEMOPOULOS	396	Electronmicroscopical Contrast by Palladium Chloride J. M. FERRER, A. TATO, and J. C. STOCKERT	483
A Chemical Investigation of <i>Pueraria mirifica</i> Roots J. L. INGHAM, S. TAHARA, and SR. Z. DZIEDZIC	403	Notes	
Characterization and Properties of Different Glucosyltransferases Isolated from Suspension-Cultured Cells of <i>Daucus carota</i> E. INGOLD and H. U. SEITZ	409	Cyanidin 3-Gentiobioside from Primary Leaves of Rye (<i>Secale cereale</i> L.) E. BUSCH, D. STRACK, and G. WEISSENBOCK	485
Conversion Rate of Ozone with Volatile Terpenes in the Surface Region of Conifer Needles (In German) H. RUSSI	421	¹ H-NMR Studies on the Effect of Spin Label on Lipids W. LOHMANN and B. KIEFER	487
Impact of UV-B Radiation on Photosynthetic Assimilation of ¹⁴ C-Bicarbonate and Inorganic ¹⁵ N-Compounds by Cyanobacteria G. DÖHLER, I. BIERMANN, and J. ZINK	426	The Macromolecular Structure of Collagen in Tendon Fibres of Dermatosparactic Animals E. MOSLER, W. FOLKHARD, W. GEERCKEN, O. HELLE, E. KNÖRZER, M. H. J. KOCH, CH. M. LAPIÈRE, H. NEMETSCHKE-GANSLER, B. NUSGENS, and TH. NEMETSCHKE	489
Pentachlorophenol Inhibits Photosynthetic Electron Flow and Quenches Chlorophyll Fluorescence after Preillumination CH. NIEHRS and J. AHLERS	433	Quasisynergism as Evolutionary Advance to Increase Repellency of Beetle Defensive Secretions K. DETTNER and R. GRÜMMER	493
The Diazo Reaction of Bilirubins and Phycorubins: A Quantitative Study W. KUFER, O. SCHMID, G. SCHMIDT, and H. SCHEER	437	Contents of Number 5/6	
Orientation Measurements on Ordered Multibilayers of Phospholipids and Sphingolipids from Synthetic and Natural Origin by ATR Fourier Transform Infrared Spectroscopy K. BRANDENBURG and U. SEYDEL	453	Original Communications	
The Dynamics of Bone Mineral in Some Vertebrates. F. C. M. DRIESSENS and R. M. H. VERBEECK	468	Pyoverdine Type Siderophores from <i>Pseudomonas aeruginosa</i> (In German) G. BRISKOT, K. TARAZ, and H. BUDZIKIEWICZ	497
A Serum-Free <i>in vitro</i> Culture System for Crayfish Organs G. GELLISSEN, M. TRAUB, and K.-D. SPINDLER	472	A New Biflavone and Further Flavonoids from the Moss <i>Hylocomium splendens</i> R. BECKER, R. MUES, H. D. ZINSMEISTER, F. HERZOG, and H. GEIGER	507
		4-O-β-D-Glucosides of Hydroxybenzoic and Hydroxycinnamic Acids – Their Synthesis and Determination in Berry Fruit and Vegetable B. SCHUSTER, M. WINTER, and K. HERRMANN	511
		Chemistry and Morphology of Epicuticular Waxes from Leaves of Five <i>Euphorbia</i> Species H. HEMMERS, P.-G. GÜLZ, and K. HANGST	521

¹ N-Acetyl-3-indolylmethylglucosinolate in Seedlings of <i>Tovaria pendula</i> Ruiz et Pav. H. SCHRAUDOLF and R. BÄUERLE	526	Effects of Adenosine-3':5'-monophosphate (cAMP) on the Activity of Soluble Protein Kinases in Maize (<i>Zea mays</i>) Coleoptile Homogenates B. JANISTYN	579
Changes in Fructose-2,6-bisphosphate Level during the Growth of Suspension Cultured Cells of <i>Catharanthus roseus</i> H. ASHIHARA	529	Effects of Pyridazinone Herbicides during Chloroplast Development in Detached Barley Leaves. III. Effects of SAN 6706 on Photosynthetic Activity and Chlorophyll-Protein Complexes G. LASKAY, E. LEHOCZKI, A. L. DOBI, and L. SZALAY	585
Biosynthesis of Pyoluteorin: A Mixed Polyketide-Tricarboxylic Acid Cycle Origin Demonstrated by [1,2- ¹³ C ₂]Acetate Incorporation D. A. CUPPELS, C. R. HOWELL, R. D. STIPANOVIC, A. STOESSL, and J. B. STOTHERS	532	Photocontrol of Chloroplast Lipids in Fern Gametophytes ST. KRAISS and A. R. GEMMRICH	591
The Expression of the Isovitexin 7-O-Xylosylating Gene <i>gX</i> in <i>Silene pratensis</i> and <i>S. dioica</i> is Restricted to the Petals J. STEYNS and J. v. BREDERODE	537	Changes in the Stoichiometry of Photosystem II Components as an Adaptive Response to High-Light and Low-Light Conditions during Growth A. WILD, M. HÖPFNER, W. RÜHLE, and M. RICHTER	597
Ergosterol as a Biochemical Indicator of Fungal Infection in Spruce and Fir Needles from Different Sources W. F. OSSWALD, W. HÖLL, and E. F. ELSTNER	542	The Activation of the Cytochrome P-450 Dependent Monooxygenase System by Light D. MÜLLER-ENOCH and H. GRULER	604
Plant Defense Substances XXIX. Isolation, Characterization and Synthesis of Turgorines from <i>Gleditsia triacanthos</i> L. (In German) H. SCHILDKNECHT, R. MULEY, G. M. KRESBACH, P. KUNZELMANN, and D. KRAUSS	547	Specificity of Rabbit Antibodies Elicited by Related Synthetic Peptides A. CHERSI, R. A. HOUGHTEN, F. CHILLEMI, R. ZITO, and D. CENTIS	613
Preparation of Pheromones by Simple Procedures H. K. MANGOLD and H. BECKER	555	Structure Investigations of Agonists of the Natural Neurotransmitter Acetylcholine, IV. X-Ray Structure Analyses of Trimethylpentylammonium-chloride and (4-Acetoxybutyl)trimethylammonium-iodide A. GIEREN and M. KOKKINIDIS	618
Increased Lipxygenase Activity is Involved in the Hypersensitive Response of Wheat Leaf Cells Infected with Avirulent Rust Fungi or Treated with Fungal Elicitor C. A. OCAMPO, B. MOERSCHBACHER, and H. J. GRAMBOW	559	Structure Investigations of Agonists of the Natural Neurotransmitter Acetylcholine, V. Structure-Activity Correlations for Cholinergic Stimulants Derived from Crystal Structures of Their Halides A. GIEREN and M. KOKKINIDIS	627
Stimulation of Photorespiration by the Carbonic Anhydrase Inhibitor Ethoxyzolamide in <i>Chlorella vulgaris</i> Y. SHIRAIWA and G. H. SCHMID	564	Structure Investigations of Agonists of the Natural Neurotransmitter Acetylcholine, VI. X-Ray Structure Analysis of Trimethyl[2-(propionyloxy)ethyl]ammonium-iodide (O-Propionylcholine-iodide) A. GIEREN and M. KOKKINIDIS	641
The Photosynthetic Apparatus of <i>Ectothiorhodospira halochloris</i> . 2. Accessibility of the Membrane Polypeptides to Partial Proteolysis and Antenna Polypeptide Assignments to Specific Chromophores R. STEINER, A. ANGERHOFER, and H. SCHEER	571	Is the Calcium Pump Involved in Calcium Release? M. UNGEHEUER, A. MIGALA, and W. HASSELBACH	647

Selective Abolition of Sarcoplasmic Reticulum Vesicles' Calcium Releasing Mechanisms W. HASSELBACH, M. UNGEHEUER, A. MIGALA, and K. RITTER	652	of Pyridine-2,6-di(monothiocarboxylic Acid) from Pyridine-2,6-dicarboxylic Acid (In German) U. HILDEBRAND, K. TARAZ, and H. BUDZIKIEWICZ	691
The Sensitivity of the Ventral Nerve Photoreceptor of <i>Limulus</i> Recovers after Light Adaptation in Two Phases of Dark Adaptation I. CLASSEN-LINKE and H. STIEVE	657	A Furanolheliangolide in <i>Helianthus debilis</i> ; Implications for a Chemotaxonomy of the Genus <i>Helianthus</i> O. SPRING, V. KLEMT, K. ALBERT, and A. HAGER	695
<i>Notes</i>		UDP-Glucose: Anthocyanidin/Flavonol 3-0-Glucosyltransferase in Enzyme Preparation from Flower Extracts of Genetically Defined Lines of <i>Matthiola incana</i> R. Br. M. TEUSCH, G. FORKMANN, and W. SEYFFERT	699
Antipeptide Antibodies: Do They Distinguish HLA-Alloantigens? A. CHERSI, R. A. HOUGHTEN, D. ZELASCHI, and C. CENCIARELLI	668	Cyanidin 3-Oxalylglucoside in Orchids D. STRACK, E. BUSCH, V. WRAY, L. GROTHJAHN, and E. KLEIN	707
Erratum to A. PFITZNER, L. POLZ, and J. STÖCKIGT, Z. Naturforsch. 41c , 103–114 (1986)	671	Characterization of Glutamine Synthetase of Roots, Etiolated Cotyledons and Green Leaves from <i>Sinapis alba</i> (L.) R. MANDERSCHIED and A. WILD	712
Contents of Number 7/8		Are Polyphosphoinositides Involved in Signal Transduction of Elicitor-Induced Phytoalexin Synthesis in Cultured Plant Cells? H. STRASSER, CH. HOFFMANN, H. GRISEBACH, and U. MATERN	717
<i>Original Communications</i>		Herbal Insecticides III. Pyrethrin I in the Essential Oil of <i>Chrysanthemum balsamita</i> L. (In German) H. J. BESTMANN, B. CLASSEN, U. KOBOLD, O. VOSTROWSKY, and F. KLINGAUF	725
Esters of Benzyl Alcohol and 2-Phenyl-ethanol-1 in Epicuticular Waxes from <i>Jojoba</i> Leaves P.-G. GÜLZ and F.-J. MARNER	673	Interference of Dimethazone with Formation of Terpenoid Compounds G. SANDMANN and P. BÖGER	729
Collettruncoic Acid Methyl Ester, a Unique Meroterpenoid from <i>Colletotrichum truncatum</i> A. STOESSL and J. B. STOTHERS	677	Species-Specific Differences in Acetyl Coenzyme A Synthesis of Chloroplasts H.-J. TREEDE, B. RIENS, and K.-P. HEISE	733
Complex Flavonoids from <i>Pityrogramma</i> Frond Exudates: Synthesis of Two Flavones with C–C-Linked Dihydrocinnamoyl Substituents M. IINUMA, K. HAMADA, M. MIZUNO, F. ASAI, and E. WOLLENWEBER	681	Nitrogen and Sulfur Starvation of the Cyanobacterium <i>Synechococcus</i> 6301. An Ultrastructural, Morphometrical, and Biochemical Comparison G. WANNER, G. HENKELMANN, A. SCHMIDT, and H.-P. KÖST	741
Occurrence of 2-(2-Hydroxy-4,7-dimethoxy-2H-1,4-benzoxazin-3-one)- β -D-glucopyranoside in <i>Triticum aestivum</i> Leaves and Its Conversion into 6-Methoxy-benzoxazolinone H. J. GRAMBOW, J. LÜCKGE, A. KLAUSENER, and E. MÜLLER	684		
6-(Hydroxythio)carbonylpyridine-2-carboxylic Acid and Pyridine-2-carboxylic Acid-6-monothiocarboxylic Acid as Intermediates in the Biosynthesis			

Conjugated Enamino Compounds, a New Molecular Probe for the Mechanism of Photosynthetic Electron Transport

T. ASAMI, N. TAKAHASHI, and S. YOSHIDA 751

Acyclo Nucleosides and Nucleotides: Synthesis, Conformation and Other Properties, and Behaviour in Some Enzyme Systems, of 2',3'-Seco Purine Nucleosides, Nucleotides and 3':5'-Cyclic Phosphates, Analogues of cAMP and cGMP

R. STOLARSKI, Z. KAZIMIERCZUK, P. LASSOTA, and D. SHUGAR 758

Azadirachtin, a Chemical Probe for the Study of Moulting Processes in *Rhodnius prolixus*

E. S. GARCIA, M. UHL, and H. REMBOLD 771

Comparative Enzymatic Degradation of H1 Subfractions from Syrian Hamster Tissues

E. HRABEC, A. PLUCIENNICZAK, and H. PANUSZ 776

Polymerization of Actin in the Absence and Presence of Cytochalasin B: Problems of Determining "Critical Concentration"

B. FUSSMANN and P. DANCKER 781

Proliferation Kinetics and Metabolic Features of *in vitro* Grown Ehrlich Ascites Tumor Cells in the Presence of Exogenous Pyruvate

W. KROLL, ST. POSTIUS, and F. SCHNEIDER 787

Triplet-Selective Chemistry: a Possible Cause of Biological Microwave Sensitivity

F. KEILMANN 795

Notes

Interaction between Spin Labels and DPPC Vesicles

W. LOHMANN, B. KIEFER, and W. SCHMEHL 799

Aspects of Mycobacterial Response to Beryllate Ions *in vitro*

H. J. MACCORDICK 802

Effect of Tuftsin on the Phagocytotic Activity of the Unicellular *Tetrahymena*. Does Primary Interaction Develop Imprinting?

G. CSABA, V. LÁSZLÓ, and P. KOVÁCS 805

Contents of Number 9/10

Original Communications

2-Hydroxy-4-methoxy-5-methyl Pyridine N-Oxide, an Al^{3+} Complexing Metabolite from *Pseudomonas cepacia* (In German)

ST. WINKLER, W. OCKELS, H. BUDZIKIEWICZ, H. KORTH, and G. PULVERER 807

Characterization of Volatile Constituents from Heterotrophic Cell Suspension Cultures of *Ruta graveolens*

M. JORDAN, C. H. ROLFS, W. BARZ, R. G. BERGER, H. KOLLMANNBERGER, and F. DRAWERT 809

Identification and Biosynthesis of Glucosylated and Sulfated Flavonols in *Flaveria bidentis*

L. VARIN, D. BARRON, and R. IBRAHIM 813

Substrate-Dependent Arylsulfatase Activity in the Cyanobacterium *Plectonema* 73110

S. MÜLLER and A. SCHMIDT 820

Volatile Fragrance Compounds from the Fungus *Gloeophyllum odoratum* (Basidiomycotina)

H.-P. HANSSEN, V. SINNEWELL, and W.-R. ABRAHAM 825

An Elicitor of the Hypersensitive Lignification Response in Wheat Leaves Isolated from the Rust Fungus *Puccinia graminis* f. sp. *tritici*. I. Partial Purification and Characterization

B. MOERSCHBACHER, K. H. KOGEL, U. NOLL, and H. J. REISENER 830

An Elicitor of the Hypersensitive Lignification Response in Wheat Leaves Isolated from the Rust Fungus *Puccinia graminis* f. sp. *tritici*. II. Induction of Enzymes Correlated with the Biosynthesis of Lignin

B. MOERSCHBACHER, B. HECK, K. H. KOGEL, O. OBST, and H. J. REISENER 839

Metabolic Conversions of Trichothecene Mycotoxins: Biotransformation of 3-Acetyldeoxynivalenol into Fusarenon-X

N. C. P. BALDWIN, B. W. BYCROFT, P. M. DEWICK, and J. GILBERT 845

Biochemical Properties and Crystal Structure of Ethylmethylglyoxal Bis(guanyldrazone) Sulfate — an Extremely Powerful Novel Inhibitor of Adenosylmethionine Decarboxylase H. ELO, I. MUTIKAINEN, L. ALHONEN-HONGISTO, R. LAINE, J. JÄNNE, and P. LUMME	851	(R)Mandelonitrile and Prunasin, the Sources of Hydrogen Cyanide in All Stages of <i>Paropsis atomaria</i> (Coleoptera: Chrysomelidae) A. NAHRSTEDT and R. H. DAVIS	928
Protein Phosphorylation — Dephosphorylation in the Cytosol of Pea Mesophyll Cells R. HRACKY and J. SOLL	856	Latitude Dependent Circadian Rhythms of Carabid Beetles G. LEYK and W. MARTIN	935
Diethyldithiocarbamate, a New Photosystem I Electron Donor of Mehler-Type Hill Reactions B. L. UPHAM and K. K. HATZIOS	861	Notes	
Photodestruction of Endogenous Porphyrins in Relation to Cellular Inactivation of <i>Propionibacterium acnes</i> T. B. MELØ and G. REISÆTER	867	New Flavonoids from the Exudate of <i>Baccharis bigelovii</i> (Asteraceae) F. J. ARRIAGA-GINER, E. WOLLENWEBER, and D. HRADETZKY	946
The Photosynthetic Apparatus of <i>Ectothiorhodospira halochloris</i> . 3. Effect of Proteolytic Digestion on the Photoactivity R. STEINER, B. KALUMENOS, and H. SCHEER	873	The C-Glycosylflavone Pattern of <i>Passiflora incarnata</i> L. H. GEIGER and K. R. MARKHAM	949
Phenolic Herbicides: Correlation between Lipophilicity and Increased Inhibitory Sensitivity of Thylakoids from Higher Plant Mutants J. DURNER, A. THIEL, and P. BÖGER	881	Antiproliferative Activity of Derivatives of <i>trans</i> -Bis(salicylaldoximate)copper(II) <i>in vitro</i> . Some <i>in vivo</i> Properties of the Parent Compound H. ELO and P. LUMME	951
Biosynthesis and Turnover of Cell Wall Glycoproteins during the Vegetative Cell Cycle of <i>Chlamydomonas reinhardtii</i> J. VOIGT	885	Effect of Tumour Regression on Serum and Tissue Copper Concentration in Mice Bearing Induced Fibrosarcoma P. K. CHAKRAVARTY, A. GHOSH, and J. R. CHOWDHURY	956
Nucleic Acid-Binding Activities of the Intermediate Filament Subunit Proteins Desmin and Glial Fibrillary Acidic Protein C. E. VORGIAS and P. TRAUB	897	Contents of Number 11/12	
Soluble and Insoluble Rat Liver Chromatin is Different in Structure and Protein Composition R. BRUST	910	Contents of Nos 1–12	III–XII
Specific Binding of Calcium to Soluble Chromatin R. BRUST	917	Original Communications	
On the Direct Observation of Water-Fluxes in Tissues and Leaves U.-A. HIRTH and R. LAWACZECK	923	Volatiles from Liquid Cultures of <i>Lentinellus cochleatus</i> (Basidiomycotina) H.-P. HANSEN and W.-R. ABRAHAM	959
		Biosynthesis of Flavor Compounds by Microorganisms. 6. Odorous Constituents of <i>Polyporus durus</i> (Basidiomycetes) R. G. BERGER, K. NEUHÄUSER, and F. DRAWERT	963
		<i>Rhizomnium magnifolium</i> and <i>R. pseudopunctatum</i> , the First Mosses to Yield Flavone Glucuronides R. MUES, G. LEIDINGER, V. LAUCK, H. D. ZINSMEISTER, T. KOPONEN, and K. R. MARKHAM	971

Flavonoid Constituents of <i>Rhamnus lycioides</i> L. M. PAYÁ, S. MÁÑEZ, and A. VILLAR	976	Adsorbent Culture of Tobacco Cell Suspensions with Different Adsorbents R. MAISCH, B. KNOOP, and R. BEIDERBECK	1040
Green Algae (<i>Scenedesmus obliquus</i>) Contain Three Thioredoxins of Regular Size P. LANGLOTZ, W. WAGNER, and H. FOLLMANN	979	Changes in Levels of Cellular Constituents in Sus- pension Culture of <i>Catharanthus roseus</i> Associ- ated with Inorganic Phosphate Depletion T. UKAJI and H. ASHIHARA	1045
A Simple and Rapid Method for Isolation of 124 kDa Oat Phytochrome R. GRIMM and W. RÜDIGER	988	Flow Cytometric DNA-Analysis of Plant Protoplasts Stained with DAPI I. ULRICH and W. ULRICH	1052
Investigation of the Peptide Chain of 124 kDa Phyto- chrome: Localization of Proteolytic Fragments and Epitopes for Monoclonal Antibodies R. GRIMM, F. LOTTSPEICH, H. A. W. SCHNEIDER, and W. RÜDIGER	993	Evidence for the Intercalation of Thalidomide into DNA: Clue to the Molecular Mechanism of Tha- lidomide Teratogenicity? H. P. KOCH and M. J. CZEJKA	1057
Isolation and Characterization of 3 Protochlorophyl- lides from Pigment Mutant C-2A' of <i>Scenedesmus obliquus</i> K. KOTZABASIS and H. SENER	1001	Formation and Structure of Radicals from D-Ribose and 2-Deoxy-D-ribose by Reactions with SO ₄ ⁻ Rad- icals in Aqueous Solution. An <i>in-situ</i> Electron Spin Resonance Study J. N. HERAK and G. BEHRENS	1062
Phosphoenolpyruvate Carboxylase from Maize Leaves. Studies Using β -Methylated Phospho- enolpyruvate Analogues as Inhibitors and Sub- strates D. H. GONZÁLEZ and C. S. ANDREO	1004	Alkylene-bis-isothiocyanates: Novel Insect Growth Regulators G. MATOLCSY, I. UJVÁRY, L. M. RIDDIFORD, and K. HIRUMA	1069
Purification of the Chloroplast Pyruvate Dehydro- genase Complex from Spinach and Maize Meso- phyll H.-J. TREEDE and K.-P. HEISE	1011	C ₉ Aliphatic Aldehydes: Possible Sex Pheromone from Male Tropical West African Shield Bug, <i>Sphaerocoris annulus</i> A. J. E. GOUGH, D. E. GAMES, B. W. STADDON, D. W. KNIGHT, and T. O. OLAGBEMIRO	1073
On the Role of Magnesium in the Reaction of the Pyruvate Kinase from <i>Salmonella typhimurium</i> C. GARCIA-OLALLA and A. GARRIDO-PERTIERRA	1018	Individual Variation in the Sex Pheromone Compo- nents of the False Codling Moth, <i>Cryptophlebia leucotreta</i> (Lepidoptera: Tortricidae) A. B. ATTYGALLE, J. SCHWARZ, O. VOSTROWSKY, and H. J. BESTMANN	1077
Content and Metabolism of Indole-3-acetic Acid (IAA) in Healthy and Rust-Infected Wheat Leaf Segments G. WIESE and H. J. GRAMBOW	1023	Screening and Use of Sex Attractants in Monitoring of Geometrid Moths in Bulgaria M. A. SUBCHEV, J. A. GANEV, O. VOSTROWSKY, and H. J. BESTMANN	1082
The Production of Pyrenocines A and B by a Novel <i>Alternaria</i> species B. TAL and D. J. ROBESON	1032	Relative Potencies of Antagonists of the Luteinizing Hormone Releasing Hormone with Lys ⁸ and Arg ⁸ and Substitutions in Positions 3, 5, 6, 7 and 8 K. FOLKERS, C. BOWERS, P.-F. L. TANG, M. KOB- TA, X. SHAO-BO, W. BENDER, and L. YIN-ZENG	1087
Sensitivity of a Phototrophic Bacterium to the Herbi- cide Sulfometuron Methyl, an Inhibitor of Branched Chain Amino Acid Biosynthesis I. SCHNEIDER and J.-H. KLEMME	1037		

Effect of External Calcium Concentration on the Intensity Dependence of Light-Induced Membrane Current and Voltage Signals in Two Defined States of Adaptation in the Photo-Receptor of <i>Limulus</i> H. STIEVE, H. GAUBE, and J. KLOMFASS	1092	An Improved Procedure for the Quantitative Estimation of the Rust Fungus in Infected Plant Tissue G. WIESE, D. HUGO-WISSEMAN, and H. J. GRAMBOW	1127
Effects of Low Frequency Magnetic Fields on Chick Embryos. Dependence on Incubation Temperature and Storage of the Eggs J. P. JUUTILAINEN	1111	Low Molecular Mass Inhibitors from Calf Thymus Selective for T-Lymphocyte Proliferation H. P. MATTHIESSEN and H. R. MAURER	1131
<i>Notes</i>		The Effect of Volatile Anesthetics on Giant Neurons in the Lobula Plate in the Fly K. KIRSCHFELD	1137
Preliminary Studies towards a Monograph of the Lichen Family Roccellaceae Chev. VII. Secondary Products and Relationships of the Genera <i>Combea</i> de Not. and <i>Schizopelte</i> T. M. Fries (In German) G. FOLLMANN and M. GEYER	1117	Microfilament-Supported Macrovilli in the Hindgut of the Polychaete <i>Dinophilus gyrociliatus</i> U. OSTER	1139
Rearrangement of Glaucolide A into Vernojalcanolide 8-O-Methacrylate M. MARTÍNEZ, A. SÁNCHEZ, G. LÓPEZ, and P. JOSEPH-NATHAN	1119	Comment on: Is there an Equilibrium between Ascorbic and Dehydroascorbic Acids? H. W. MUELLER	1145
Thin Layer Chromatographic and IR Spectral Evidence for the Presence of Phosphonolipids in Human Sperm M. C. MOSCHIDIS	1121	<i>Report</i>	
Evidence for the Presence of Glycerophosphonolipids in the Land Snail <i>Eobania vermiculata</i> M. C. MOSCHIDIS	1124	The Glio-Axonal Interaction and the Problem of Regeneration of Axons in the Central Nervous System – Concept and Perspectives H. WOLBURG, J. NEUHAUS, and A. MACK	1147
		Subject Index	1157
		Authors Index	1181