

CONTENTS

PLANT VIRUSES, SUBVIRAL RNAs and VIROIDS

<i>Contribution of Plant and Virus Genes to Cauliflower Mosaic Virus Pathogenicity</i>	1
S.N. Covey, D.S. Turner, R. Stratford, K. Saunders, A. Lucy, S. Riseborough and P. Ray	
<i>Bromovirus RNA Replication and Host Specificity</i>	11
P. Ahlquist, R. Allison, W. DeJong, M. Janda, Ph. Kroner, R. Pacha and P. Traynor	
<i>Analysis of Tobacco Mosaic Virus-Host Interactions by Directed Genome Modification</i>	23
J.N. Culver, A.G.C. Lindbeck, P.R. Desjardins and W.O. Dawson	
<i>Cell-to-Cell Movement of Plant Viruses</i>	35
T. Godefroy-Colburn, C. Erny, F. Schoumacher, A. Berna, M.-J. Gagey and C. Stussi-Garaud	
<i>Tomato Spotted Wilt Virus: A Bunyavirus Invading the Plant Kingdom</i>	49
R. Kormelink, P. de Haan, D. Peters and R. Goldbach	
<i>Origin and Evolution of Defective Interfering RNAs of Tomato Bushy Stunt Virus</i>	57
D. A. Knorr and T.J. Morris	
<i>Self-Cleavage Activities from Viral Satellite RNAs</i>	67
W.L. Gerlach and M.J. Young	
<i>Viroid Structures Involved in Protein Binding and Replication</i>	75
D. Riesner, J. Harders, R. Hecker, P. Klaff, P. Loss, N. Lukacs and G. Steger	
<i>Analysis of Viroid Pathogenicity by Genome Modification</i>	91
R.W. Hammond and R.A. Owens	

NITROGEN FIXATION, NITROGEN METABOLISM

<i>An Extracellular Oligosaccharide Symbiotic Signal Produced by Rhizobium meliloti</i>	101
Ph. Roche, P. Lerouge, J.-C. Promé, D.G. Barker, C. Faucher, F. Maillet, G. Truchet and J. Dénarié	

<i>Tissue-Specific Expression of Early Nodulin Genes</i>	111
C. van de Wiel and T. Bisseling	
<i>Internalization of Rhizobium by Plant Cells: Targeting and Role of Peribacteroid Membrane Nodulins</i>	121
D.P. S. Verma, G.-H. Miao, C.P. Joshi, C.-I. Cheon and A. Delaune	
<i>Regulation of Nodule Specific Genes</i>	131
P. Lauridsen, N. Sandal, A. Kühle, K. Marcker and J. Stougaard	
<i>Regulation of Genes for Enzymes along a Common Nitrogen Metabolic Pathway</i>	139
G.M. Coruzzi, J.W. Edwards, E.L. Walker, F.-Y. Tsai and T. Brears	

PHYTOPATHOLOGY

<i>Molecular Basis of Plant Defense Responses to Fungal Infections</i>	147
K. Hahlbrock, P. Groß, Ch. Colling and D. Scheel	
<i>Plant Genes Involved in Resistance to Viruses</i>	153
B. Dumas, E. Jaeck, A. Stintzi, J. Rouster, S. Kauffmann, P. Geoffroy, M. Kopp, M. Legrand and B. Fritig	
<i>Repeated DNA Sequences and the Analysis of Host Specificity in the Rice Blast Fungus</i>	167
F.G. Chumley, B. Valent, M.J. Orbach, J.A. Sweigard L. Farrall and A. Walter	
<i>Molecular Genetics of the Tomato Pathogen Cladosporium fulvum</i>	179
R.P. Oliver, N.J. Talbot, M.T. McHale and A. Coddington	
<i>Transgenic Potato Cultivars Resistant to Potato Virus X</i>	183
A. Hoekema, M.J. Huisman, D. Posthumus-Lutke Willink, E. Jongedijk, P. van den Elzen and B.J.C. Cornelissen	

AGROBACTERIUM, TRANSFORMATION

<i>The Agrobacterium Virulence System</i>	193
P.J.J. Hooykaas, L.S. Melchers, K.W. Rodenburg and S.C.H. Turk	
<i>T-DNA Gene-Functions</i>	205
C. Koncz, T. Schmülling, A. Spena and J. Schell	
<i>Morphogenetic Genes in the T-DNA of Ri Plasmids</i>	211
P. Costantino, M. Cardarelli, I. Capone, A. De Paolis, P. Filetici, M. Pomponi and M. Trovato	
<i>Transient Expression and Stable Transformation of Maize Using Microprojectiles</i>	219
M. Fromm, T. M. Klein, S.A. Goff, B. Roth F. Morrish and Ch. Armstrong	
<i>Agroinfection as a Tool for the Investigation of Plant-Pathogen Interactions</i>	225
N. Grimsley, E. Jarchow, J. Oetiker, M. Schläeppli and B. Hohn	

GENOME ANALYSIS, RFLP

<i>Physical Mapping of the Arabidopsis Genome and its Applications</i>	239
B.M. Hauge, J. Giraudat, S. Hanley, I. Hwang, T. Kohchi and H.M. Goodman	
<i>Application of Restriction Fragment Length Polymorphism to Maize Breeding</i>	249
M.G. Murray, Y.S. Chyi, J.H. Cramer, S. DeMars, J. Kirschman, Y. Ma, J. Pitas, J. Romero-Severson, J. Shoemaker, D.P. West and D. Zaitlin	
<i>Soybean Genome Analysis: DNA Polymorphisms are Identified by Oligonucleotide Primers of Arbitrary Sequence</i>	263
S.V. Tingey, J.A. Rafalski, J.G.K. Williams and S. Sebastian	
<i>Genome Analysis in Brassica Using RFLPs</i>	269
T.C. Osborn, K.M. Song, W.C. Kennard, M.K. Slocum S. Figdore, J. Suzuki and P.H. Williams	
<i>Physical Mapping of DNA Sequences on Plant Chromosomes by Light Microscopy and High Resolution Scanning Electron Microscopy</i>	277
H. Lehfer, G. Wanner and R.G. Herrmann	

TRANSPOSONS

<i>Structure and Function of the Maize Transposable Element Activator (AC)</i>	285
R. Kunze, G. Coupland, H. Fußwinkel, S. Feldmar, U. Courage, S. Schein, H.-A. Becker, S. Chatterjee, M.-G. Li and P. Starlinger	
<i>Expression and Regulation of the Maize Spm Transposable Element</i>	299
N.V. Fedoroff, P. Masson and J.A. Banks	
<i>The En/Spm Transposable Element of Zea mays</i>	309
M. Frey, A. Menßen, S. Grant, S. Lütticke, J. Reinecke, S. Trentmann, G. Cardon, H. Saedler and A. Gierl	
<i>The Mechanism and Control of Tam3 Transposition</i>	317
R. Burton, C. Lister, S. Schofield, J. Jones and C. Martin	
<i>Characterization of Mobile Endogenous Copia-Like Transposable Elements in the Genome of Solanaceae</i>	333
M.-A. Grandbastien, A. Spielmann, S. Pouteau, E. Huttner, M. Longuet, K. Kunert, C. Meyer, P. Rouzé and M. Caboche	

MITOCHONDRIA, CHLOROPLASTS, PHOTOSYNTHESIS

<i>Organization and Evolution of the Maize Mitochondrial Genome</i>	345
C.M.-R. Fauron, M. Havlik, M. Casper	
<i>RNA Editing in Wheat Mitochondria: A New Mechanism for the Modulation of Gene Expression</i>	365
J.-M. Grienemberger, L. Lamattina, J.H. Weil, G. Bonnard and J. Gualberto	

<i>Topological Orientation of the Membrane Protein URF13</i>	375
K.L. Korth, F. Struck, C.I. Kaspi, J.N. Siedow and C.S. Levings III	
<i>Cytoplasmic Male Sterility in Petunia</i>	383
M.R. Hanson, M.B. Connett, O. Folkerts, S. Izhar, S.M. McEvoy, H.T. Nivison and K.D. Pruitt	
<i>Nuclear and Chloroplast Genes Involved in the Expression of Specific Chloroplast Genes of Chlamydomonas reinhardtii</i>	401
J.-D. Rochaix, M. Goldschmidt-Clermont, Y. Choquet, M. Kuchka and J. Girard-Bascou	
<i>The Thylakoid Membrane of Higher Plants: Genes, their Expression and Interaction</i>	411
R.G. Herrmann, R. Oelmüller, J. Bichler, A. Schneiderbauer, J. Steppuhn, N. Wedel, A.K. Tyagi and P. Westhoff	
<i>Greening of Etiolated Monocots - The Impact of Leaf Development on Plastid Gene Expression</i>	429
P. Westhoff and H. Schrubar	
<i>Regulation of Chloroplast Biogenesis in Barley</i>	439
J.E. Mullet, J.C. Rapp, B.J. Baumgartner, T. Berends-Sexton and D.A. Christopher	
<i>Chlorophyll Biosynthesis</i>	449
D. von Wettstein	
<i>Molecular Approaches to Understand Sink-Source Relations in Higher Plants</i>	461
L. Willmitzer, A. Basner, K. Borgmann, W.-B. Frommer H. Hesse, S. Hummel, J. Koßmann, T. Martin, B. Müller M. Rocha-Sosa, A. von Schaeven, M. Stitt and U. Sonnewald	

GENE EXPRESSION, PHOTORECEPTORS

<i>The Expression of an Ovalbumin and a Seed Protein Gene in the Leaves of Transgenic Plants</i>	471
Ch. Wandelt, W. Knibb, H.E. Schroeder, M.R.I. Khan D. Spencer, S. Craig, T.J.V. Higgins	
<i>Regulation of Plant Gene Expression by Antisense RNA</i>	479
J. Mol, A. van der Krol, A. van Tunen, R. van Blokland P. de Lange and A. Stuitje	
<i>Photocontrol of Gene Expression</i>	487
E. Schäfer, A. Batschauer, A.R. Cashmore, B. Ehmann H. Frohnmeier, K. Hahlbrock, T. Kretsch, T. Merkle, M. Rocholl and B. Wehmeyer	
<i>phyA Gene Promoter Analysis</i>	499
P.H. Quail, W.B. Bruce, K. Dehesh and J. Dulson	
<i>Approaches to Understanding Phytochrome Regulation of Transcription in Lemna gibba and Arabidopsis thaliana</i>	509
E.M. Tobin, J.A. Brusslan, J.A. Buzby, G.A. Karlin-Neumann D.M. Kehoe, P.A. Okubara, S.A. Rolfe, L. Sun and S.C. Weatherwax	

<i>Cis-Regulatory Elements for the Circadian Clock Regulated Transcription of the Wheat cab-1 Gene</i>	519
A. Pay, E. Fejes, M. Szell, E. Adam and F. Nagy	

PLANT DEVELOPMENT

<i>Self-Incompatibility as a Model for Cell-Cell Recognition in Flowering Plants</i>	527
J.E. Gray, B.A. McClure, V. Haring, M.A. Anderson and A.E. Clarke	
<i>Floral Homeotic and Pigment Mutations Produced by Transposon-Mutagenesis in Antirrhinum majus</i>	537
R. Carpenter, S. Doyle, D. Luo, J. Goodrich, J.M. Romero, R. Elliot, R. Magrath and E. Coen	
<i>Molecular Analysis of the Homeotic Flower Gene deficiencies of Antirrhinum majus</i>	545
H. Sommer, W. Nacken, P. Huijser, J.-P. Beltran, P. Flor, R. Hansen, H. Pape, W.-E. Lönnig, H. Saedler and Z. Schwarz-Sommer	
<i>Mutations of Knotted Alter Cell Interactions in the Developing Maize Leaf</i>	555
S. Hake, N. Sinha, B. Veit, E. Vollbrecht and R. Walko	
<i>T-DNA Insertion Mutagenesis in Arabidopsis: A Procedure for Unravelling Plant Development</i>	563
K.A. Feldmann, A.M. Wierzbicki, R.S. Reiter and S.A. Coomber	

PROTEIN TRANSPORT

<i>Defining the Vacuolar Targeting Signal of Phytohemagglutinin</i>	575
M.J. Chrispeels, C.D. Dickinson, B.W. Tague, D.C. Hunt and A. von Schaewen	
<i>Signals for Protein Import into Organelles</i>	583
G. von Heijne	
<i>Protein Translocation Across the Chloroplast Envelope Membrane</i>	595
D. de Boer, J. Hageman, R. Pilon, T. America and P. Weisbeek	
<i>Protein Transport Across the Thylakoid Membrane</i>	605
C. Robinson, R. Mould and J. Shackleton	
<i>Protein Import into Plant Mitochondria</i>	611
F. Chaumont and M. Boutry	

STORAGE PROTEINS

<i>Assembly of Maize Storage Proteins into Protein Bodies in Developing Endosperm</i>	619
B.A. Larkins, C.R. Lending and E. de Barros	
<i>Genetic and Molecular Studies on Endosperm Storage Proteins in Maize</i>	627
N. Di Fonzo, H. Hartings, M. Maddaloni, S. Lohmer, R. Thompson, F. Salamini and M. Motto	

<i>Assembly Properties of Modified Subunits in the Glycinin Subunit Family</i>	635
W.J.P. Lago, M.P. Scott and N.C. Nielsen	

<i>The Prolamins of the Triticeae (Barley, Wheat and Rye): Structure, Synthesis and Deposition</i>	641
P.R. Shewry, A.S. Tatham, G. Hull, N.G. Halford, J. Henderson, N. Harris and M. Kreis	

STRESS REACTIONS

<i>Genes Induced by Abscissic Acid and Water Stress in Maize</i>	651
M. Pagès, D. Ludevid, J. Vilardell, M.A. Freire, M. Pla, M. Torrent and A. Goday	
<i>Molecular Analysis of Desiccation Tolerance in the Resurrection Plant Craterostigma plantagineum</i>	663
D. Bartels, K. Schneider, D. Piatkowski, R. Elster, G. Iturriaga, G. Terstappen, L.T. Binh and F. Salamini	
<i>The Anaerobic Responsive Element</i>	673
M.R. Olive, J.C. Walker, K. Singh, J.G. Ellis, D. Llewellyn, W.J. Peacock and E.S. Dennis	
<i>The Induction of the Heat Shock Response: Activation and Expression of Chimaeric Heat Shock Genes in Transgenic Plants</i>	685
F. Schöffl, M. Rieping and K. Severin	
<i>Oxidative Stress in Plants</i>	695
Ch. Bowler, L. Slooten, E.W.T. Tsang, W. van Camp, M. van Montagu and D. Inzé	

INTERESTING PATHWAYS

<i>Elucidating Lipid Metabolism Using Mutants of Arabidopsis</i>	707
J. Browse, S. Hugly, M. Miquel and C. Sommerville	
<i>Alkaloids: A New Target for Molecular Biology</i>	719
T.M. Kutchan	
<i>The Shikimate Pathway's First Enzyme</i>	729
K.M. Herrmann, J. E.B.P. Pinto, L.M. Weaver and J.-M. Zhao	
<i>ACC Synthase Genes in Zucchini and Tomato</i>	737
G. Peter, W. Rottmann, T. Sato, P.-L. Huang, P. Oeller, J. Keller, J. Murphy and A. Theologis	
<i>Molecular Analysis of Anthocyanin Genes of Zea mays</i>	747
U. Wienand, B. Scheffler, Ph. Franken, A. Schrell, U. Niesbach-Klösgen, E. Tapp, J. Paz-Ares and H. Saedler	
<i>Author Index</i>	757
<i>Subject Index</i>	761