

# Contents

*K. Munk: In Memoriam Dr. Mildred Scheel . . . . .	XXI
AA. Ullrich and J. Schlessinger: Growth Factor Receptors: Role in Normal Mitogenic Signalling and Oncogenesis . . . . .	XXIII
*V. T. Ivanov: In Memoriam Prof. Yuri Ovchinnikov . . . . .	XXXIII
*V. T. Ivanov and V. A. Nesmeyanov: Yuri Ovchinnikov . . . . .	XXXV
*J. D. Rowley: Ovchinnikov Lecture Human Leukemia Genes: Search for the Villains . . . . .	XL
*R. C. Gallo and L. S. Nerurkar: Ovchinnikov Lecture Human Retroviruses: Linkage to Leukemia and AIDS . . . . .	XLVII
*Pastor Bode Lecture . . . . .	LXX
N. A. Mitchison: Pastor Bode Lecture: Escape from the Red Queen . . . . .	LXXIII
Frederick Stohlman Jr. Memorial Lecture . . . . .	LXXXI
S. Broder: Clinical Research Using 3'-Azido-2',3'-Dideoxythymidine (AZT) and Related Dideoxynucleosides in the Therapy of AIDS . . . . .	LXXXIII
F. Grosveld, M. Antoniou, M. Berry, E. de Boer, N. Dillon, J. Ellis, P. Fraser, D. Greaves, O. Hanscombe, J. Hurst, M. Lindenbaum, V. Mignotte, S. Philipsen, S. Pruzina, J. Strouboulis, D. Talbot, and D. Whyatt: The Human $\beta$ -Globin Locus Control Region. . . . .	CV
List of Participants . . . . .	CXIX
Wilsede Scholarship Holders . . . . .	CXXVII
Acknowledgements . . . . .	CXXIX

## Clinical Aspects

*D. Pinkel: Bone Marrow Transplantation in Children with Acute Leukemia: A 1990 View . . . . .	3
M. Eder, O. G. Ottmann, T. E. Hansen-Hagge, C. R. Bartram, S. Gillis, D. Hoelzer, and A. Ganser: Proliferation-Including Effects of Recombinant Human Interleukin-7 and Interleukin-3 in B-Lineage Acute Lymphoblastic Leukemia . . . . .	11
*K. Welte, C. Zeidler, A. Reiter, J. Rösler, T. Pietsch, T. Hecht, and H. Riehm: Effects of Granulocyte Colony- Stimulating Factor in Children with Severe Congenital Neutropenia . . . . .	16
N. J. Simbirtseva: Interleukin-1 Production in Patients with Nonlymphocytic Leukemia and Myelodysplastic Syndromes . . . . .	22
J. Boguslawska-Jaworska, J. Pisarek, A. Chybicka, B. Kazanowska, J. Armata, W. Balwierz, H. Bubala, T. Jackowska, D. Michalewska, M. Ochocka, U. Radwanska, R. Rokicka Milewska, M. Rytlevska, S. Skomra, G. Sladkowska, J. Wachowiak, M. Wiczorek, E. Zelenay, D. Sońta-Jakimczuk, and A. Woźniak: The Results of Treatment of Acute Lymphoblastic Leukemia Relapses in the Polish Children's Leukemia/Lymphoma Study Group . . . . .	28
A. Petrakova and J. Stary: Long-Term Follow-up Study in Childhood Acute Lymphoblastic Leukemias . . . . .	32
T. Miyashita, S. Mizutani, M. Asada, J. Fujimoto, T. Inaba, and T. Furukawa: Monoclonal Blast Cell Proliferation in Transient Myeloproliferative Disorder . . . . .	33

<i>K. Pálóczi, K. Natonek, E. Pócsik, B. Kotlán, R. Mihalik, M. Benczur, J. Demter, and G. G. Petrányi:</i> The Comparison of the Expression of Activation Antigens on Peripheral Blood Mononuclear Cells in Chronic Lymphocytic Leukemia and in Hairy Cell Leukemia . . . . .	38	<i>M. Waechter, E. Elstner, J. Maciejewski, H.-D. Volk, and R. Ihle:</i> In Vitro Effect of GM-CSF and IFN- $\gamma$ on the Establishment of Stromal Layer and Hemopoiesis in Human Dexter Culture . . . . .	97
<i>V. A. Almazov, E. I. Podoltzeva, E. V. Morozova, X. O. Sitskaya, V. M. Kravzova, and B. V. Afanasiev:</i> Multiple Myeloma: Immunodeficient, Osteolytic, Renal, and Amyloid Syndromes . . . . .	41	<i>A. Y. Zaritskey and O. V. Strizhak:</i> The Effect of Bone Marrow Fibroblast and Stromal Cell-Conditioned Media on Hemopoietic Cells in Culture . . . . .	101
<i>B. V. Afanasiev, E. I. Podoltzeva, E. V. Morozova, V. A. Almazov, L. S. Zubarovskaya, and V. M. Kravzova:</i> Prognostic Factors in Patients with Multiple Myeloma . . . . .	50	<i>N. L. Samoilina, A. L. Medvinsky, O. I. Gan, and T. E. Manakova:</i> Hemopoietic Stem Cells in Embryogenesis of the Mouse . . . . .	106
<i>A. G. Zedginidze:</i> Cytogenetic Disorders During Tumor Progression in Leukemia . . . . .	56	<i>Po-min Chen, Huo-I Hsiao, Jenn-long Su, J. Liu, and Ling-ling Yang:</i> Induction of Differentiation of the Human Promyelocytic Cell Line (HL-60) by Conditioned Medium of <i>Ceatea letifera</i> -Stimulated Mononuclear Cells . . . . .	110
<i>N. N. Mamaev, V. A. Pavlova, and O. V. Marinets:</i> New Cytogenetic Aspects of Myelodysplasia and Acute Leukemia . . . . .	59	<i>L. R. Rohrschneider:</i> Molecular Mechanisms in Myeloid Lineage Development . . . . .	115
<i>T. E. Hansen-Hagge, S. Yokota, J. W. G. Janssen, and C. R. Bartram:</i> Detection of Minimal Residual Leukemia by Polymerase Chain Reactions . . . . .	65	<i>M. Ranson and J. T. Gallagher:</i> Proteoglycans in Cellular Recognition and Secretory Functions in the Haemopoietic System . . . . .	121
<i>J. Monaselidze, Z. Chanchalashvili, I. Kalandadze, D. Khachidze, and I. Topuridze:</i> Structural Changes in Blast Cell Chromatin and DNA in Patients with Acute Leukemia After Cytosar and Irradiation Treatment . . . . .	72	<i>S. H. Gohla, R. A. Zeman, M. Bögel, E. Jurkiewicz, S. Schrum, H. D. Haubeck, H. Schmitz, G. Hunsmann, and R. D. Neth:</i> Modification of the In Vitro Replication of the Human Immunodeficiency Virus HIV-1 by TPSg, a Polysaccharide Fraction Isolated from the Cupressaceae <i>Thuja occidentalis</i> L. (Arborvitae) . . . . .	140
<b>Cell Biology</b>		<b>Molecular Genetics</b>	
<i>J. E. Dick:</i> Animal Models of Normal and Leukemic Human Hematopoiesis . . . . .	77	<i>M. F. Greaves, J. Brown, L. Fina, D. Robertson, D. Delia, and H. V. Molgaard:</i> Molecular Cloning and Expression of CD34: A Haemopoietic Progenitor-Associated Cell Surface Glycoprotein . . . . .	153
<i>M. Akashi and H. P. Koeffler:</i> Colony Stimulating Factors: Regulation of Production . . . . .	83	<i>N. M. Gough:</i> Molecular Genetics of the Human GM-CSF Receptor . . . . .	159
<i>M. Y. Gordon, D. Clarke, C. R. Dowding, and M. Siczkowski:</i> Adhesive Interactions in the Regulation of Haemopoiesis . . . . .	93	<i>E. I. Frolova, D. V. Smirnov, G. M. Dolganov, I. A. Mazo, N. S. Bystrov, and I. V. Severtsova:</i> Structural Organization of the Cytokine Gene Cluster on Human Chromosome 5 . . . . .	166

<i>S. A. Nedospasov, A. N. Shakhov, D. V. Kuprash, I. A. Udalova, M. M. Azizov, T. M. Seregina, M. I. Mekshenkov, and R. L. Turetskaya:</i> Genes Encoding Tumor Necrosis Factors: Genome Organization, Polymorphism, and Expression . . . . .	175	<i>A. G. Tatosyan, M. S. Shtutman, L. Z. Topol, N. P. Kisseljova, E. A. Musatkina, and G. I. Deichman:</i> Selective Integration of Rous Sarcoma Virus Genome in High- and Low-Metastatic Transformed Cell Lines . . .	260
<i>A. Miyajima:</i> Molecular Characterization of the Mouse Interleukin-3 Receptor .	185	<i>P. G. Knyazev, O. M. Serova, I. F. Nikiforova, V. I. Babenko, A. A. Goltzov, G. F. Pluzhnikova, O. V. Plutalov, U. A. Berlin, and E. I. Swartz:</i> Molecular Mechanism of Alteration of H-rasI Oncogene in Human Breast Carcinomas: G to T Transversion in 12th Codon of the Undeleted Allele in the Case of the Loss of the Other Gene Allele .	262
<i>J. H. Pierce:</i> Signal Transduction Through Foreign Growth Factor Receptors and Oncogenes Transfected into Interleukin-3-Dependent Hematopoietic Cells . . . . .	191		
<i>M. Dean, M. B. White, B. Gerrard, L. Krueger, V. Baranov, N. Kapronov, M. Ianuzzui, G. Sebastio, M. Leppert, and J. Amos:</i> Genetic Analysis of Ion Transport . . . . .	194		
<b>Virology</b>		<b>Immunology</b>	
<i>F. Wendling, M. Souyri, I. Vigon, S. Gisselbrecht, and P. Tambourin:</i> The Molecular Biology of the Myeloproliferative Leukemia Virus . .	201	<i>H.-G. Ljunggren, P. Höglund, C. Öhlén, and K. Kärre:</i> Natural Killer Cell Mediated Defence Directed Selectively Against Target Cells Lacking MHC Class I Gene Products . . . . .	267
<i>W. Kolch, R. H. Bassin, and U. R. Rapp:</i> Raf Function is Required for Proliferation of NIH/3T3 Cells and Transformation by Nonnuclear Oncogenes . . . . .	208	<i>B. Van den Eynde, B. Lethé, A. Van Pel, and T. Boon:</i> Tumor Rejection Antigens and Immune Surveillance . . . . .	279
<i>C. Zechel, H. Peters, U. Schleenbecker, A. Anders, and F. Anders:</i> erbB <sup>aa</sup> : an "Ignition Spark" for the Xiphorus Melanoma Machinery? . . . . .	213	<i>P. J. Robinson:</i> Glycophosphatidylinositol-Anchored Membrane Proteins as Coreceptors in T-Cell Activation . . . . .	286
<i>U. Lorenz, P. Beimling, J. Cao, and K. Moelling:</i> Analysis of Human Retroviral Regulatory Proteins Tax and Tat . . . . .	235	<i>V. A. Nesmeyanov, S. V. Khaidukov, R. L. Komal'eva, M. V. Sumaroka, I. S. Litvinov, E. G. Dorodnikh, T. I. Valyakina, A. Malakhov, and K. Brisken:</i> The Molecular Mechanism of Muramyl Peptides' Biological Activity . . . . .	290
<i>M. Schwab:</i> Human Neuroblastoma: Paradigm for a Tumor with Oncogene Amplification and Loss of a Putative Tumor Suppressor Gene . . . . .	241	<i>S. M. Kang, M. Grilli, A. C. Tran, and M. J. Lenardo:</i> A Novel Nuclear Factor Binds to the NF-KB Motif in the Interleukin-2 Enhancer . . . . .	294
<i>M. E. M. Campbell and S. McCorkindale:</i> Activation of Gene Expression by Human Herpes Virus 6 . . . . .	251	<i>D. Cosman:</i> Soluble Cytokine Receptors as Immunomodulators . . . . .	302
<i>C. Leib-Mösch, M. Bachmann, E.-M. Geigl, R. Brack-Werner, T. Werner, V. Erfle, and R. Hehlmann:</i> Expression of S71-Related Sequences in Human Cells . . . . .	256	<b>Early Life and Evolution</b>	
		<i>S. Ohno:</i> Immunological Self-Nonself Discrimination and Numerous Peptide Fragments Shared by Unrelated Proteins . . . . .	311

• <i>S. N. Rodin, A. Y. Rzhetsky, and A. A. Zharkikh:</i> Multigene Families: The Problem of Molecular Recapitulation . . . . .	316	• <i>J. Schwietering and P. J. Plath:</i> Frozen Temporal Pattern in Growing Systems . . . . .	329
• <i>S. N. Rodin, Y. G. Matushkin, and J. S. Krushkal:</i> Repeated Intragenome "Parasites" as a Factor in Molecular Coevolution .	323	• <i>U. Krause:</i> On Some Concepts in Modeling Nonlinear Phenomena . . .	336
		<b>Subject Index</b> . . . . .	343