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Contents

Contributors	xiii
Preface	
Audrey E. Evans	xxiii
Acknowledgments	xxv

CELL DIFFERENTIATION

Induction-Dependent and Lineage-Dependent Models for Cell Diversification Are Mutually Exclusive H. Holtzer, J. Biehl, and S. Holtzer	3
Modulation of Cell Surface Antigens Accompanies Morphological Differentiation of Human Neuroblastoma Cell Lines C. Patrick Reynolds and John Maples	13
Properties of Human Neuroblastoma Cells Following Induction by Retinoic Acid Neil Sidell and Richard Horn	39
Neuronal, Schwannian, and Melanocytic Differentiation of Human Neuroblastoma Cells In Vitro Maria Tsokos, Robert A. Ross, and Timothy J. Triche	55
Effect of Adenosine Analogues on the Growth and Protein Carboxymethyltransferase Activity of C-1300 Murine Neuroblastoma in Tissue Culture Bernard L. Mirkin, Robert F. O'Dea, and Harry P. Hogenkamp	69
Impact of Alpha Fetoprotein in Differentiation of Human Neuroblastoma Cells Junichi Uchino, Haruhiko Naito, Yuji Sato, and Yoshihide Shinada	79
Tumor Differentiation—Application of Prostaglandins in the Treatment of Neuroblastoma Shinsaku Imashuku, Shinjiro Todo, Noriko Esumi, Tetsuo Hashida, Kentaro Tsunamoto, and Fumiaki Nakajima	89
Discussion: Cell Differentiation Howard Holtzer, Uriel Littauer, C. Patrick Reynolds, Neil Sidell, Maria Tsokos, Bernard L. Mirkin, Junichi Uchino, and Shinsaku Imashuku	99

ONCOGENE EXPRESSION AND CYTOGENETICS

Amplification of N-myc Sequences in Primary Human Neuroblastomas: Correlation With Advanced Disease Stage Garrett M. Brodeur, Robert C. Seeger, Manfred Schwab, Harold E. Varmus, and J. Michael Bishop	105
Studies on the Expression of the Amplified Domain in Human Neuroblastoma Cells Peter W. Melera, Richard W. Michitsch, Kate T. Montgomery, June L. Biedler, Kathleen W. Scotto, and Joseph P. Davide	115
Comparison Studies of Oncogenes in Retinoblastoma and Neuroblastoma Wen-Hwa Lee, A. Linn Murphree, and William F. Benedict	131
Expression of the N-Ras Oncogene in Tumorigenic and Non-Tumorigenic HT 1080 Fibrosarcoma X Normal Human Fibroblast Hybrid Cells Bernard Weissman, Corey S. Mark, William F. Benedict, and Eric J. Stanbridge	141
Chromosome Abnormalities, Gene Amplification, and Tumor Progression Fred Gilbert	151
Peripheral Neuroepithelioma: Genetic Analysis of Tumor Derived Cell Lines Mark A. Israel, Carol Thiele, Jacqueline Whang-Peng, Chien-Song Kao-Shan, Timothy J. Triche, and James Miser	161
Possible Relationship of Chromosome Abnormalities and Gene Amplification With Effects of Chemotherapy: A Neuroblastoma Xenograft Study Yoshiaki Tsuchida, Yasuhiko Kaneko, Naotoshi Kanda, Shun-ichi Makino, Tadashi Utakoji, and Sumio Saito	171
Discussion: Oncogene Expression and Cytogenetics Alfred Knudson, William F. Benedict, Garrett M. Brodeur, Peter W. Melera, Bernard Weissman, Fred Gilbert, Mark A. Israel, and Yoshiaki Tsuchida . . .	181
EXPRESSION OF GENE PRODUCTS	
The Expression of Tubulin and Various Enzyme Activities During Neuroblastoma Differentiation Uriel Z. Littauer, A. Zutra, S. Rybak, and Irith Ginzburg	193
Growth Stage-Related Synthesis and Secretion of Proteins by Human Neuroblastoma Cells and Their Variants June L. Biedler, Michael G. Rozen, Osama El-Badry, Marian B. Meyers, Peter W. Melera, Robert A. Ross, and Barbara A. Spengler	209
Heterogeneity of Proteoglycans From Tissue Cultured Human Neuroblastoma Cells Ian Hampson, Shant Kumar, and John Gallagher	223
Glycosylation Changes in Membrane Glycoproteins After Transfection of NIH 3T3 With Human Tumor DNA Mary Catherine Glick, Rosaria De Santis, and Ursula V. Santer	229

ICS
 Human
 Disease Stage
 Schwab, 105
 Domain in Human
 Montgomery,
 P. Davide 115
 Neuroblastoma and
 Benedict 131
 Genic and Non-
 Human Fibroblast
 Benedict, and
 141
 on, and Tumor
 151
 s of Tumor Derived Cell
 Peng, Chien-Song Kao-
 161
 nalties and Gene
 Neuroblastoma
 Iwata, Shun-ichi Makino,
 171
 Genetics
 Brodeur, Peter W. Melera,
 and Yoshiaki Tsuchida . . 181
 e Activities During
 Ziegler 193
 n of Proteins by Human
 Dry, Marian B. Meyers,
 Spengler 209
 Cultured Human
 223
 Proteins After Transfection
 Iwata V. Santer 229

Collagen Synthesis by Human Neuroblastoma Cells
 Y.A. DeClerck and C. Lee 239
 Expression of a Melanocyte Phenotype in Human Neuroblastoma
 Cells *In Vitro*
 Robert A. Ross and June L. Biedler 249
 Analysis of Neuroblastoma Cell Proteins Using Two-Dimensional
 Electrophoresis
 S.M. Hanash, M. Gagnon, R.C. Seeger, and L. Baier 261
 Discussion: Expression of Gene Products
 Mary Catherine Glick, June L. Biedler, Uriel Z. Littauer, Ian Hampson, Y.A.
 DeClerck, Robert A. Ross, and S.M. Hanash 269
TUMOR MARKERS
 Circulating Gangliosides as Tumor Markers
 Stephan Ladisch and Zi-Liang Wu 277
 Clinical Studies With Neuron Specific Enolase
 Paul J. Marangos 285
 NSE in Neuroblastoma and Other Round Cell Tumors of Childhood
 Timothy J. Triche, Maria Tsokos, R. Ilona Linnoila, Paul J. Marangos, and
 Roma Chandra 295
 Prognostic Importance of Serum Neuron Specific Enolase in Local
 and Widespread Neuroblastoma
 P.M. Zeltzer, P.J. Marangos, H. Sather, A. Evans, S. Siegel, K.Y. Wong,
 A. Dalton, R. Seeger, and D. Hammond 319
 Serum Ferritin as a Prognostic Indicator in Neuroblastoma: Biological
 Effects of Isoferritins
 Hie-Won L. Hann, Mark W. Stahlhut, and Audrey E. Evans 331
 A Panel of Monoclonal Antibodies Which Discriminate Neuroblastoma
 From Ewing's Sarcoma, Rhabdomyosarcoma, Neuroepithelioma, and
 Hematopoietic Malignancies
 Ludvik Donner, Timothy J. Triche, Mark A. Israel, Robert C. Seeger, and
 C. Patrick Reynolds 347
 Immunohistologic Detection and Phenotyping of Neuroblastoma Cells
 In Bone Marrow Using Cytoplasmic Neuron Specific Enolase and Cell
 Surface Antigens
 Thomas J. Moss, Robert C. Seeger, Andrea Kindler-Rohrborn,
 Paul J. Marangos, Manfred F. Rajewsky, and C. Patrick Reynolds 367
 HLA-A,B,C and β 2-Microglobulin Are Expressed Weakly by Human
 Cells of Neuronal Origin, but Can Be Induced in Neuroblastoma Cell
 Lines by Interferon
 Lois A. Lampson, James P. Whelan, and Cheryl A. Fisher 379
 Detection of Neuroblastoma With ¹³¹I-Meta-Iodobenzylguanidine
 P.A. Voûte, C.A. Hoefnagel, H.R. Marcuse, and J. de Kraker 389
 Discussion: Tumor Markers
 Audrey E. Evans, Paul Marangos, Stephen Ladisch, Timothy J. Triche,
 P.M. Zeltzer, Hie-Won L. Hann, Ludvik Donner, Thomas J. Moss,
 Lois A. Lampson, and P.A. Voûte 399

DETECTION AND REMOVAL OF TUMOR CELLS FROM BONE MARROW

Preliminary Studies of Agglutination of Metastatic Neuroblastoma by Soy Bean Lectin
 William L. Elkins 405

Monoclonal Antibodies and Magnetic Microspheres Used for the Depletion of Malignant Cells From Bone Marrow
 J.T. Kemshead, J.G. Treleaven, F.M. Gibson, J. Ugelstad, A. Rembaum, and T. Philip 413

Sensitive Detection of Neuroblastoma Cells in Bone Marrow for Monitoring the Efficacy of Marrow Purging Procedures
 C. Patrick Reynolds, Thomas J. Moss, Robert C. Seeger, Alfred T. Black, and James N. Woody 425

Depletion of Neuroblastoma Cells From Bone Marrow With Monoclonal Antibodies and Magnetic Immunobeads
 Robert C. Seeger, C. Patrick Reynolds, Dai Dang Vo, John Ugelstad, and John Wells 443

Physical Cell Separation of Neuroblastoma Cells From Bone Marrow
 C.G. Figdor, P.A. Vouïte, J. de Kraker, L.N. Vernie, and W.S. Bont 459

Antibody-Complement Killing of Neuroblastoma Cells
 A.P. Gee, J. Van Hilten, J. Graham-Pole, and M.D.P. Boyle 471

Anti-Neuroblastoma Monoclonal Antibodies Which Do Not Bind to Bone Marrow Cells
 Christopher N. Frantz, Reggie E. Duerst, Daniel H. Ryan, Nancy L. Gelsomino, Louis S. Constine, and Philip K. Gregory 485

Development of Neuroblastoma Monoclonal Antibodies for Potential Utilization in Diagnosis and Therapy
 Nai-Kong V. Cheung, Ulla Saarinen, John Neely, Floro Miraldi, Sarah Strandjord, Phyllis Warkentin, and Peter Coccia 501

Discussion: Detection and Removal of Tumor Cells From Bone Marrow
 Robert C. Seeger, John T. Kemshead, W.M. Elkins, C.P. Reynolds, C. Figdor, A.P. Gee, C.N. Frantz, and N-K. V. Cheung 507

NEW APPROACHES TO THERAPY

In Vitro Sensitivity of Neuroblastoma Cells to Antineoplastic Drugs by Short-Term Test
 C. Rosanda, A. Garaventa, M. Pasino, P. Strigini, and B. De Bernardi . . . 515

Radiosensitivity of Neuroblastoma
 J.M. Deacon, P. Wilson, and G.G. Steel 525

Therapeutic Application of Radiolabelled Monoclonal Antibody UJ13A in Children With Disseminated Neuroblastoma—A Phase 1 Study
 J.T. Kemshead, A. Goldman, D. Jones, J. Pritchard, J.S. Malpas, I. Gordon, J.F. Malone, G.D. Hurley, and F. Breatnach 533

Sequential Cis-Platinum and VM26 in Neuroblastoma: Laboratory and Clinical (OPEC Regimen) Studies
 Jon Pritchard, R. Whelan, and Bridget T. Hill 545

FROM BONE MARROW
Neuroblastoma by
 405
uses Used for the
 Istad, A. Rembaum,
 413
ine Marrow for
dures
 eger, Alfred T. Black,
 425
row With
ids
), John Ugelstad, and
 443
From Bone Marrow
nd W.S. Bont 459
Cells
 . Boyle 471
h Do Not Blind to
 Ryan,
 C. Gregory 485
odies for Potential
 ro Miraldi,
 ia 501
Is From Bone
 C.P. Reynolds,
 g 507
neoplastic Drugs by
 d B. De Bernardi 515
 525
onal Antibody UJ13A
. Phase 1 Study
 J.S. Malpas,
 h 533
ma: Laboratory and
 545

Metastatic Neuroblastoma Managed by Supralethal Therapy and Bone Marrow Reconstitution (BMRC). Results of a Four-Institution Children's Cancer Study Group Pilot Study
 G.J. D'Angio, C. August, W. Elkins, A.E. Evans, R. Seeger, C. Lenarsky, S. Feig, J. Wells, N. Ramsay, T. Kim, W. Woods, W. Krivit, S. Strandjord, P. Coccia, and L. Novak 557
Treatment of Advanced Neuroblastoma With Two Consecutive High-Dose Chemotherapy Regimens and ABMT
 O. Hartmann, C. Kalifa, F. Beaujean, C. Bayle, E. Benhamou, and J. Lemerle 565
Autologous Bone Marrow Transplantation for Very Bad Prognosis Neuroblastoma
 T. Philip, P. Biron, I. Philip, M. Favrot, J.L. Bernard, J.M. Zucker, B. Lutz, E. Plouvier, P. Rebattu, M. Carton, P. Chauvot, L. Dutou, G. Souillet, N. Philippe, P. Bordigoni, M. Lacroze, G. Clapisson, D. Olive, J. Treleven, J.T. Kemshead, and M. Brunat-Mentigny 569
Discussion: New Approaches to Therapy
 Giulio J. D'Angio, Stuart Siegel, C. Rosanda, J. Deacon, J.T. Kemshead, J. Pritchard, C. Kalifa, and T. Philip 587
Index 591

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xiv / Contributors

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xviii / Contributors

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Preface

This volume contains papers presented at the Third Symposium on Neuroblastoma Research held at The Children's Hospital of Philadelphia in May of 1984. In the five-year interval between the second and third symposia, there has been an explosion of research in the basic biology of neuroblastoma. A much larger number of investigators are working in this area and there was a significant increase in the number who wished to present data. There are, therefore, a larger number of papers which, of necessity, had to be more limited in length. Much of the valuable discussion during the conference has been summarized and is included after each group of papers dealing with the individual topic. The initial papers start at the molecular level, proceed through cytogenetics and biochemical markers to clinically related topics, and culminate in recent advances in treatment. The largest number are in the area of basic or applied laboratory research, a change from the previous conference which addressed more fully the clinical problems of neuroblastoma.

The first seven sections deal with cell differentiation of both human and mouse neuroblastoma cell lines. Agents causing differentiation that are discussed include retinoic acid, alpha fetoprotein, prostaglandins, and in the C1300 line, adenosine analogues. Also addressed are the changes in cell surface antigens accompanying morphologic differentiation and the interrelationship of neuronal, schwannoma, and melanotic differentiation of neuroblastoma cells.

Oncogene expression is discussed in the second section, including the important observation of the association of amplification with disease stage and prognosis. Several papers in this section present data on gene amplification, and one compares neuroblastoma with retinoblastoma. The final paper reports the possible relationship of chromosome abnormalities and gene amplification with the effect of chemotherapy.

The volume continues with several papers addressing the expression of gene products. These include tubulin, various proteins, proteoglycans, and collagen. One investigator addresses the glycosylation changes in membrane glycoproteins after transfection of NIH 3T3 cells with human tumor DNA.

One of the largest areas explored is that of tumor markers. In the clinical field the advent of neuroblastoma-associated biological markers has been

xxiv / Preface

extremely useful for diagnosis and prognosis. The markers discussed are gangliosides, neuron specific enolase, and ferritin. Data was presented on the weak expression of HLA antigen on neuroblastoma cells and the effects of interferon on this expression. The final topic in this section deals with the uptake of most neuroblastoma tumors of the ^{131}I labelled meta-iodo-benzylguanidine.

The two final sections present clinical topics mostly relating to bone marrow transplantation and methods of ridding the bone marrow of tumor cells prior to its use as an autologous transplant. Methods of purging the bone marrow include lectin separation and antibody coated magnetic micropheres. The new therapies discussed include bone marrow transplantation with multidrug chemotherapy regimens, with or without total body irradiation and allogeneic or cryopreserved autologous marrow reinfusion in patients who have relapsed and those newly diagnosed.

This volume will be of primary interest to the basic scientist working in the field of human neuroblastoma and the clinician who is seeking clues to achieve a better understanding of this unusual childhood cancer in order to provide better therapy. However, the several chapters on molecular biology will be of interest to researchers in any basic cancer research.

Audrey E. Evans, M.D.