

THIRTY-FOURTH ANNUAL MEETING
of the
TISSUE CULTURE ASSOCIATION

June 12-16, 1983

Sheraton-Twin Towers Hotel
Orlando, FL

PROGRAM COMMITTEE

James R. Florini (*Chairperson, 1983-84*)
Mina J. Bissell
Ray A. Bressan (*Plant Division*)
Gretchen J. Darlington
Alvan Donnan, Jr. (*Local Committee*)
Jack Gruber
John M. Lehman
Dwight E. Lynn (*Invertebrate Division*)
Leonard R. Murrell (*Fell Division*)
Dorothy R. Pitelka
Elizabeth M. Earley (*Ex-Officio*)

MONDAY MORNING: June 13, 1983

Seminole & Orange

SYMPOSIUM

GENE ISOLATION AND ITS USE IN CELL BIOLOGY

Convener: Dr. Robert A. Weinberg, Massachusetts Institute of Technology

- 8:30 Welcoming Remarks. GERARD J. MCGARRITY, Institute for Medical Research, Camden, N.J. *President*, Tissue Culture Association.
- 8:35 Introduction. R. A. WEINBERG.
- 8:40 S-1 The Decapentaplegic Gene Complex in *Drosophila*. W. GELBART, V. Irish, L. Posakony, D. Segal, F. Spenser, and D. St. Johnston.
- 9:30 S-2 Molecular Basis of a Simple Behavior. R. SCHELLER, Stanford Univ., Stanford, CA.
- 10:20 Coffee in Exhibit Area
- 10:35 S-3 Activation of the *myc* Oncogene by Chromosomal Translocation. M. D. COLE, G. L. C. Shen-Ong, E. J. Keath, and S. P. Piccoli, St. Louis Univ., St. Louis, MO.
- 11:25 S-4 Mechanisms of Formation of Human Oncogenes. R. A. WEINBERG, H. Land, and L. F. Parada, Massachusetts Institute of Technology, Cambridge, MA.
- 12:15 General Discussion

MONDAY AFTERNOON: June 13, 1983

Palm Beach/Broward

SESSION-IN-DEPTH

Origin of Cell Lines

Convener: R. E. Stevenson, American Type Culture Collection

- 1:30 Introduction: R. E. STEVENSON

Numbers preceding titles refer to abstracts.
Capitalization identifies speaker; asterisk (*) identifies member.
†Submitted for Wilton R. Earle Award.
#Submitted for the Honor B. Fell Award.

ABSTRACTS WILL NOT BE PRINTED IN THE MEETING PROGRAM. BRING YOUR ABSTRACT ISSUE OF *IN VITRO* TO THE ANNUAL MEETING. ABSTRACT ISSUES OF *IN VITRO* WILL BE SOLD AT THE REGISTRATION DESK TO ANYONE REQUIRING AN ADDITIONAL COPY.

- 1:45 1 Dreams of Cellular Physiology Captured in Tissue Culture Systems — George Gey's Bequest.
R. A. PATILLO and A. C. F. Ruckert.
- 2:15 2 Human Cancer Cell Culture. G. E. MOORE.*
- 2:45 Coffee Break
- 3:00 3 Establishment of Cell Lines From Human Solid Tumors. A. LEIBOVITZ.*
- 3:30 4 Problem Solving with Cell Cultures. L. CORIELL.*
- 4:00 5 Remembrances of Things Past or The Coming of Age of WI-38. L. HAYFLICK.*
- 4:30 Discussion

MONDAY AFTERNOON: June 13, 1983

Lake

SESSION-IN-DEPTH

Intermediate Filaments: Molecular Markers for Cell Identification

Convener: T.-T. Sun, New York Univ.

- 1:30 Introduction: T.-T. Sun
- 1:40 6 Intermediate Filaments and Cell Diversification. H. HOLTZER, G. Bennet, P. Antin, S. Tapscott, and M. Pacifici.
- 2:15 7 Neural Cytoskeleton. M. L. SHELANSKI.
- 2:50 Coffee Break
- 3:05 8 Keratin Classes as Molecular Markers for Different Types of Epithelial Differentiation. T. T. SUN.*
- 3:40 9 Intermediate Filaments as Markers for Determining the Origin of Cell Lines and Human Tumors. M. OSBORN, E. Debus, M. Altmannsberger, and K. Weber.
- 4:15 10 The "Mesothelial Keratins": Expression and Regulation in Cultured Epithelial Cell Types and in vivo. J. G. RHEINW. D. Connell, O. Alberti, and P. J. LaRocca.
- 4:35 Discussion

MONDAY AFTERNOON: June 13, 1983

Osceola

Somatic Embryogenesis

Convener: I. Vasil, U. Florida.

- 1:30 Introduction: I. Vasil
- 1:35 11 Somatic Embryogenesis in Grasses. INDRA K. VASIL.
- 2:25 12 Asexual Embryogenesis in Palms. B. TISSERAT.
- 3:15 Coffee Break
- 3:35 13 The Use of Macromolecular Markers to Study Plant Embryo Development in vitro. M. L. CROUCH.
- 4:25 14 Carrot and Capsella: mRNA Synthesis and Accumulation during Somatic Embryogenesis and Zygotic Embryogenesis. V. RAGHAVEN.

MONDAY AFTERNOON: June 13, 1983

Dade/Florida Keys

CONTRIBUTED PAPERS

Carcinogenesis and Mutagenesis

Convener: N. Auersberg and L. J. Schiff

- 1:30 15 Biological Activity of Carbon Particles Coated with Benzo(a)Pyrene and Pyrene in Cultured Hamster Trachea. L. J. SCHIFF,* A. M. Shefner, and J. L. Graf.
- 1:45 16 Selenium-Modified Metabolism and Mutagenicity of Benzo(a)pyrene. R. W. TEEL,* and S. R. Kain.
- 2:00 17 Inhibition of DNA Synthesis Following Ultraviolet Irradiation and N-Ethyl-N-Nitrosourea Treatment of Various Human Cell Types in Culture. R. GIBSON-D'AMBROSIO,* Y. Leong, and S. M. D'Ambrosio.
- 2:15 18 Metabolism, Binding to DNA and DNA Repair Following 7,12-dimethylbenz-(a)-anthracene Treatment of Human Lymphocytes in Vitro. S. M. D'AMBROSIO, C. T. Oravec, and D. New.
- 2:30 19 Comparison of Rat Ventral Prostate Cell Lines Established by Exposure to Cadmium Chloride and Herpes Simplex Type 2 Virus. L. TERRACIO,* and M. Nachtigal.
- 2:45 Coffee Break
- 3:00 20 Constitutive $\Delta 5,3\beta$ hydroxysteroid dehydrogenase (HSD) activity in KMSV transformed adrenal cells: possible activation of an oncofetal gene. N. AUERSPERG,* and K. Farcnik.

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#Submitted for the Honor B. F^{II} Award.

- 3:15 21 Retinoid Reversal of Squamous Metaplasia in Organ Cultures of Tracheas Derived from Hamsters Fed Vitamin A-Deficient Diet. **D. P. CHOPRA.***
- 3:30 22 Sister Chromatid Exchange (SCE) Response to Tumor Promoting Agent (TFA) in Fibroblasts Predisposed to Malignancy. **S. L. WENGER,*** and **M. W. Steele.***
- 3:45 23 Cytogenetic Studies with an Opossum Cell Line (*Didelphys virginiana*). **A. B. MUKHERJEE,*** and **D. Esposito.**
- 4:00 24 Electrophoretic Variation in Human Cells Transfected with a Mouse Adenine Phosphoribosyltransferase (APRT) Gene. **J. TISCHFIELD,*** **P. Stambrook,** **T. Oblak,** and **J. Trill.**

MONDAY AFTERNOON: June 13, 1983

Exhibit Hall

POSTER SESSION

Odd number posters should be manned from 1:30 to 3:00 p.m.

Even numbered posters should be manned from 3:00 to 4:30 p.m.

Characterization

- 25 A Reproductive Method for Establishment of Clonal Epithelial Cell Lines from Normal Adult Rat Liver. **K. FURUKAWA,*** **T. Shimada,*** **Y. Mochizuki,** and **G. M. Williams.***
- 26 Some Properties of New Clonal Epithelial Cell Lines Established from Adult Rat Liver. **T. SHIMADA,*** **K. Furukawa,*** and **G. M. Williams.***
- 27 Isozyme and Chromosome Data Base of Human Cell Lines. **M. J. OTTENBREIT,** **B. Hukku,** **M. Mally,** and **W. D. Peterson, Jr.***
- 28 Ultrastructure Study of the Development of Rat Myocytes in Monolayer Culture. **L. R. PAPA,*** **G. M. Ciralo,** and **P. T. McCauley.**
- 29 Quantitative Evaluation of Purine Nucleoside Phosphorylase Electrophoresis for Species Determination of Cells. **J. ZIEGENMEYER,*** **D. K. Smith,** and **C. A. Lepp.***
- 30 Effects of Sodium Butyrate on Adult Rat Hepatocyte Cell Cultures. **G. L. ENGELMAN,*** **J. L. Steacker,** **A. Richardson,** and **J. A. Fierer.**
- 31 Effect of Selenious Acid on Microsomal Cytochrome P-450 Content of Primary Cultures of Adult Rat Hepatocytes. **G. L. ENGELMAN,*** and **J. A. Fierer.**

Differentiation

- 32 Morphological and Functional Differentiation of Individual Hypothalamic Nuclei in vitro. **A. T. GYEVAI,*** **G. B. Makara,** **E. Stark,** and **M. Palkovits.**
- 33 Single Cell Variability in Serum Albumin mRNA in Rat Hepatoma Cells. **J. A. PETERSON,*** **J. M. Taylor,** **J. W. McLean,** and **W. L. Chaovapong.**
- 34 Growth Requirements and Differentiated Functions of Cultured Human Urothelial Cells. **T. M. O'CONNELL,** and **J. G. Rheinwald.***
- 35 Development of Purine Nucleoside Phosphorylase Reagent for Use in the Characterization of Nine Vertebrate Cell Lines. **C. A. LEPP,*** and **J. M. Zeigenmeyer.***
- 36 Effect of Dexamethasone on the Isozyme Pattern of Gammaglutamyltranspeptidase (GGT) in Cultured Adult Rat Hepatocytes. **M. J. GOMEZ-LECHON,*** **J. Coloma,** and **J. V. Castell.**

Tumor Cell

- 37 Comparative Study of the Human Neuroblastomas by the Soft Agar Clonal Cultures. **T. K. LEUNG.**
- 38 Culture and Characterization of Normal, Preneoplastic, and Neoplastic Rat and Human Colon Cells. **M. P. MOYER.***
- 39 A Kinetic Analysis of the Induction and Decay of the Antiviral State by Murine Placental Interferon and Type I Interferons. **C. D. REED,*** **P. T. Allen,** **O. S. Weislow,** and **A. K. Fowler.**

Virology and General

- 40 Characterization of Infectious Mononucleosis (IM) Downey Cells, and Purification of Paul-Bunnell (PB) Antigen. **A. FJELDE,*** **O. Roholt,** **R. Stelluto,** **P. Bennett,** and **J. Kellam.**
- 41 Comparison of NU-Serum and FBS Supplemented Media for Cell Growth and Propagation of Viruses. **A. K. Weinrod,** **D. Vails,** **J. P. Iltis,** **D. L. MADDEN,** and **D. A. Fuccillo.***
- 42 A-V's for Tissue Culture Laboratory Safety Training: A Report from the TCA ad hoc Committee for Laboratory Materials and Biosafety. **J. M. REED,*** and **J. LIPSCHUTZ.***
- 43 In Vitro Test for Toxicants. **E. BORENFREUND,*** and **O. Borrero.**

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MONDAY EVENING: June 13, 1983

Palm Beach/Broward

8-10 p.m.

ROUND TABLES

- R-1** Use of Organ and Cell Cultures to Replace the Use of Animals in Toxicity Testing Lake
Convener: W. H. J. Douglas, Tufts University
- R-2** Laboratory (and Office) Uses of Microcomputers Palm Beach/Broward
Conveners: J. R. Florini, Syracuse University
 C. R. Keogh, Alpha Computer Center
- R-3** Films and AV Presentations on Safety Procedure and Safety Training Indian River
Conveners: L. Lipshutz, Campbell Soup
 J. M. Reed, IIT Research Institute
- R-4** Woody Plant Propagation Osceola
Conveners: S. Garton, Native Plants, Inc., Salt Lake City
 P. E. Read, Univ. of Minnesota
- R-5** Genetic Mechanisms for Variation in Plant Cultures Volusia/Cape Canaveral
Convener: D. K. Dougall, Univ. of Tennessee

TUESDAY MORNING: June 14, 1983

Lake

SESSION-IN-DEPTH

Flow Cytometry

Convener: J. H. Lehman, U. Colorado

- 8:30 Introduction: J. H. LEHMAN, U. Colorado
- 8:45 44 Chromosome Analysis and Sorting by Flow Cytometry. L. S. Cram, M. F. Bartholdi, and J. GH. Jett.
- 9:30 45 The Use of Flow Cytometry for Studies of Cellular Differentiation. D. E. SWARTZENDRUBER, and J. C. Martin.
- 10:15 46 Immunological Methods in the Study Cell Heterogeneity. P. K. HORAN.
- 11:00 Coffee Break
- 11:15 47 Heterogeneous Expression of Carcinoembryonic Antigen by Human Colon Carcinoma Cell Lines. R. E. CUNNINGHAM, and P. D. Noguchi.*
- 11:30 48 Flow Cytometric Cell Cycle Analysis of Immune Cell Proliferation: An In Vitro Immunotoxic Screen. J. F. ANSON,* W. G. Hinson, H. Schol, J. L. Pipkin, and J. L. Hudson.
- 11:45 49 Detection of Nuclear Antigen by Flow Cytometry Combined with Monoclonal Antibody. D. W. SHEN, F. Real, L. Ngo, L. J. Old, P. A. Marks, and R. A. Rifkind (sponsored by J. Fogh*)
- 12:00 50 Chemosensitivity of FANFT-Induced Mouse Bladder Tumors. A. D. DEITCH,* and R. de Ver White.

TUESDAY MORNING: June 14, 1983

Osceola

SESSION-IN-DEPTH

The Theoretic Basis of Micropropagation Practice

Convener: B. H. McCown, U. of Wisconsin

- 8:30 Overview — Problems and Perspectives in Micropropagation Practice and Theory. B. H. MCCOWN.
- 8:45 51 Control of Cell/Tissue Growth and Differentiation — Hormonal and Nutrient Aspects. R. L. MOTT.*
- 9:30 52 Control of Shoot Growth Character and Apical Dominance in Culture. G. R. SECKINGER.
- 10:15 Coffee Break
- 10:35 53 Control of Phase Change in Relation to Propagation Stock Plant Manipulation. W. P. HACKETT.
- 11:20 54 Basic Research Needs and Their Application to Micropropagation Practice. B. H. MCCOWN.

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TUESDAY MORNING: June 14, 1983

Cape Canaveral/Volusia

CONTRIBUTED PAPERS

Contributed Papers: Plants

Conveners: J. J. Finer and J. F. Reynolds

- 9:00 55 A Comparison of Several Gelling Agents and Concentrations on Callus Growth and Organogenesis in Vitro. P. E. READ,* J. L. Halquist, and M. A. Hosier.
- 9:15 56 A Comparison and Evaluation of Anther Cultures Taken from Whole Plants and from *de novo* Flower Buds. M. P. BRIDGEN,* and R. E. Veilleux.
- 9:30 57 Morphogenesis in Barley Tissue Cultures. R. C. WEIGEL, and K. W. Hughes.*
- 9:45 58 Influence of Media, Genotype, Explant Source and Serial Subculture on Shoot Regeneration of In Vitro Broccoli, *Brassica oleracea*. N. E. Bieber, and J. F. REYNOLDS.*
- 10:00 59 Micropropagation of Jojoba Cultivars. P. P. JAUHAR.*
- 10:15 60 Cloning of Cassava in Liberia. J. M. LOCKARD,* R. G. Lockard, and M. A. Saqui.
- 10:30 Coffee Break
- 10:45 61 Plant Regeneration from a Long-term Callus Line of Birdsfoot Trefoil Stored at Low (4 degrees Celcius) Temperature. B. R. Orchinsky, and D. T. TOMES.*
- 11:00 62 Regeneration of Alfalfa from Protoplast, Cell and Callus Cultures. D. C. W. BROWN and E. M. Koehl.
- 11:15 63 †Stimulation of Somatic Embryogenesis in Cotton (*Gossypium klotzscianum* Anderss.). J. J. FINER,* A. A. Reilley, and R. H. Smith.*
- 11:30 64 Embryogenesis from Cultured Leaf Sections of *Dactylis glomerata*. B. V. CONGER* and G. E. Hanning.
- 11:45 65 Regeneration of NaCl-tolerant Sugarcane Plants from Callus Reinitiated from NaCl Pre-Selected Plantlets. M. C. LIU* and H. S. Yeh.

TUESDAY MORNING: June 14, 1983

Palm Beach/Broward

CONTRIBUTED PAPERS

Hormones and Growth Factors

Conveners: D. A. Sirbasku and G. C. Buehring

- 9:00 66 Inhibin Production by Cultured Hamster Sertoli Cells: Changes During Regression. A. S. BERKOWITZ* and J. J. Heindel.*
- 9:15 67 Selection and Characterization of Rat Prostatic Adenocarcinoma Cells Which are Inducible for Alkaline Phosphatase by Retinoid. D. H. REESE,* N. L. Block, and V. A. Politano.
- 9:30 68 The Effect of Different Sera on Short-Term Primary Culture of Isolated Alveolar Type II Cells. R. D. GREENLEAF.*
- 9:45 69 Purification of a Mammary Tumor Cell Growth Factor (Estromedin) from Sheep Pituitaries. T. SAWADA,* T. Ikeda, and D. A. Sirbasku.*
- 10:00 70 The Effect of Oral Contraceptive Steroids on the Growth Rate of Human Mammary Epithelia in Cell Culture. S. M. Longman, and G. C. BUEHRING.*
- 10:15 71 Autocrine Control of Estrogen-Responsive Mammary Tumor Cell Growth. D. DANIELPOUR* and D. A. Sirbasku.*
- 10:30 Coffee Break
- 10:45 72 Defined Medium for Normal Human Mammary Epithelial Cells. R. G. HAM* and S. L. Hammond.
- 11:00 73 Differential Nutrient Requirements of Normal and Malignant Human Transitional Epithelium in Serum-Free Culture. B. M. BISHAI, S. Kagawa, K. S. Narayan,* and D. Kirk.*
- 11:15 74 Replicative Cultures of Normal Human Bladder Epithelial Cells in Serum-Free Medium. M. E. KAIGN,* D. Kirk,* S. Kigawa, G. Vener, and S. K. Narayan.*
- 11:30 75 Reduction of Sera Requirement in Tissue Cultures by Hormone Supplement. H. C. CHANG* and O. W. Jones.
- 11:45 76 Hormonal Determinants of Vascular Smooth Muscle Cell (SMC) Growth in Serum-Free Medium. R. WEINSTEIN,* K. Wenc, M. B. Stemerman, and T. Maciag.*
- 12:00 77 Expression of Major Liver Metabolic Functions in Long Term Serum-Free Rat Liver Epithelial Cell Lines. P. PADIEU* and M. Chessebeuf.*

TUESDAY MORNING: JUNE 14, 1983

Exhibit Hall

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*Submitted for the Honor B. Fell Award.

POSTER SESSION

Odd numbered posters should be manned from 9:00 to 10:30 a.m.

Even numbers posters should be manned from 10:30 a.m. to noon.

Growth

- 78 Potent Stimulation of Human Umbilical Endothelial Cell Growth by Human Diploid Fibroblasts. **M. KAN**, S. Sunami, and I. Yamane.*
- 79 Localization of Tyrosine-Specific Protein Kinase in Anchorage Independent Cells. **J. F. WHELAN**, and G. M. Clinton.
- 80 Cytoskeletal Events during Calcium or EGF-induced Initiation of DNA Synthesis in Rat Liver Cells. **S. H. H. SWIERENGA**,* N. Marceau,* and R. Goyette.
- 81 Optimized Medium for Clonal Growth of Human Microvascular Endothelial Cells. **A. KNEDLER** and R. G. Ham.*
- 82 Effects of Sodium Butyrate on the Cell Cycle Progression of Rabbit Articular Chondrocytes in Culture. **M. ADOLPHE**,* S. Larno, X. Ronot,* and P. Lechat.

Cell Lines

- 83 Air Bladder III Cells: A New, Continuous Cell Line from Goldfish. **T. B. SHEA**, T. Yano, and E. S. Berry.*
- 84 NL/PLC: A Human Hepatocellular Carcinoma Cell Line Established from Metastatic Foci of a Nude Mouse tumor. **G. MELINCOFF**,* A. Quinn, T. Klug, R. Tubbs, and V. R. Zurawski.
- 85 Permanent Cell Lines Established from Hepatic Fibro-Granulomatous Lesions: their Relationship with Myofibroblasts and Ito Cells. **R. BOROJEVIC**,* and A. A. Monteiro.

Metabolism

- 86 Alanine Aminotransferase Activity with Unusually Low Glutamate and High Pyruvate and Alanine Requirement in the Cytosol of Human Fibroblasts. **W. L. MCKEEHAN*** and K. A. McKeehan.
- 87 Effects of cAMP on Surfactant Related Synthesis. **W. STERN**,* S. Pochron,* and L. Nardone.
- 88 New Inherited Metabolic Alteration in Synthesis of Glycoproteins and Glycosaminoglycans Demonstrated in Cultured Skin Fibroblasts. **V. IONASESCU**,* V. Pedrini, and C. Aschenbrenner.

Serum-Free

- 89 Growth and Differentiation of Rabbit Articular Chondrocytes in a Synthetic Serum Free Medium. **M. ADOLPHE**,* B. Froger, X. Ronot,* M. T. Corvol, and N. Forest.
- 90 Biphasic Transport of D-Glucose by a Saturable Component in Human Cultured Cells. **K. MANAKA*** and T. Manaka.
- 91 Liver Phenotype Expression of Progesterone Metabolism in Rab Liver Epithelial Cell Lines Grown in Serum-Free Medium. **F. Laurent** and **J. DESGRES**.*
- 92 A Serum-Free Medium for Fish Cell Cultures. **E. S. BERRY*** and T. B. Shea.

Cytogenetics

- 93 Cytogenetic and Clinical Correlations in Neoplasms of the Human Nervous System. **A. A. AL SAADI*** and F. Latimer.
- 94 Genotoxic Evaluation of Gossypol Acetic Acid in Chinese Hamster Ovary Cells. **S. K. MAJUMDAR*** and W. J. Petraiulo.
- 95 Species and Strain Comparisons of Genotoxic Effects from Ethyl Carbamate, Ethyl N-Hydroxy Carbamate and Vinyl Carbamate. **Y. SHARIEF**,* J. Campbell, S. Leavitt, R. Langenbach, and J. W. Allen.
- 96 Explant Culture of Shark Tissues. **R. T. JONES**,* E. A. Hudson, and T. Sato.

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TUESDAY MORNING: June 14, 1983

Indian River

FILM SESSION

	<i>Film Catalog Number</i>		<i>Running Time</i>
9:00	#114	Mitosis in Endosperm, Reel #2, Effect of Beta Particles and of Colchicine upon Mitosis.* A. Bajer and M. Bajer.	17 Min.
9:30	#605	Dynamic Aspects of the Neuron in Tissue Culture.* C. M. Pomerat.	22 Min.
10:00	#404	Lymphocyte Interactions in Immune Mechanisms: The Mixed Leukocyte Reaction. W. McFarland and D. H. Heilman.	12 Min.
10:20	#201	Dividing Cancer Cells in Vitro.* W. H. Lewis.	6 Min.
10:30	#110	Pinocytosis.* W. H. Lewis.	12 Min.
10:50	#128	Lysis and Phagocytosis of Antibody-Sensitized Chicken Red Cells by P388D ₁ Mouse Macrophage Tumor Cells.* H. S. Koren, W. P. Morgan, and C. J. Dawe.	4 Min.
11:00	—	NEW FILM: Membrane and Nucleus of Differentiated Cells.* G. G. Rose.	60 Min.

*Available for rental from the TCA Business Office.

TUESDAY AFTERNOON: June 14, 1983

Lake

SESSION-IN-DEPTH

Role of the Extracellular Matrix in the Control of Differentiation

Convener: M. J. Bissell, U. Calif.

1:30		Introduction: M. J. BISSELL, U. Calif.
1:40	97	Role of Extracellular Matrix Components in Bone Differentiation and Morphogenesis. A. H. REDDI.
2:20	98	Analysis of Attachment and Attachment Factors of Normal and Abnormal Neural Tissue. M. F. D. NOTTER.*
2:40	99	Regulation of Differentiation by Hormones and Extracellular Matrix. L. REID, D. Jefferson, N. Ruiz-Opazo, Z. Gatmaitan, R. Enat, and L. Leinwand.
3:20		Coffee Break
3:35	100	Fibrin Enhanced Endothelial Cell Organization. J. V. OLANDER,* M. E. Bremer, J. C. Marasa,* J. Feder,* and R. C. Kimes.
3:55	101	How Does the Extracellular Matrix Direct Gene Expression? M. J. BISSELL,* H. G. Hall, E. Y.-H. Lee, and G. Parry.
4:35		Discussion

TUESDAY AFTERNOON: June 14, 1983

Palm Beach/Broward

SESSION-IN-DEPTH

Large-Scale Cell Culture

Convener: W. R. Tolbert, Monsanto

1:30		Introduction: W. R. TOLBERT.
1:35	102	Large Scale Cell Cultivation. A. L. VAN WEZEL,* H. H. de Haan, and C. A. M. Velden-de Groot.
2:25	103	Production of Human Tumor Lymphoma Virus by Large Scale Suspension Culture. M. C. FLICKINGER, D. J. Pickle, W. B. Lebherz,* G. R. Dyson, V. A. Roberts, M. E. Gustafson, and J. A. Mikovits.
3:15		Coffee Break
3:30	104	Large-Scale Perfusion Cell Culture Systems. J. FEDER,* W. R. Tolbert,* and C. Lewis, Jr.*

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#Submitted for the Honor B. Fell Award.

- 3:45 105 Human Tumor Cell Growth in a Prototype Process-Scale Hollow Fiber Culture System. M. C. Wiemann, K. McCarthy, B. Creswick, P. Calabresi, and J. HOPKINSON (sponsored by J. M. Quarles*).
- 4:35 106 Novel Ceramic Material for Large Scale Cell Culture. B. K. LYDERSEN,* G. G. Pugh,* E. C. Duncan,* K. T. Overman, D. M. Johnson, and B. P. Sharma.*

TUESDAY AFTERNOON: June 14

Osceola

SESSION-IN-DEPTH

Biological Responses to Stress in Plants

Convener: R. Bressan, Purdue U.

- 1:30 Introduction: R. BRESSAN
- 1:35 107 Long-Term, High-Frequency Regeneration from Cereal Tissue Cultures. M. W. NABORS (sponsored by R. Bressan*)
- 2:25 108 Salt Tolerance in Cultured Plant Cells. P. M. HASEGAWA.*
- 3:15 Coffee Break
- 3:35 The Role of Proline in Bacteria Under Conditions of Osmotic Stress. L. CSONKA (sponsored by R. A. Bressan*).
- 4:25 110 Free-radical Resistance and Genetic Segregation in Mutants Derived from *Nicotiana tabacum* Cell Cultures. K. W. HUGHES,* S. Holekamp, and R. W. Holton.

TUESDAY AFTERNOON: June 14, 1983

Dade/Florida Keys

CONTRIBUTED PAPERS

Invertebrate/Methodology

Conveners: K. R. Tsang and L. B. Jacobsen

- 1:30 111 Comparison of Serum Dependency of Transformed Insect Cell Lines of Different Degrees of Malignancy. K. R. TSANG* and M. A. Brooks.*
- 1:45 112 Fatty Acids of Four Cell Lines of One Species of Insect and Lines Adapted to Serum-free Medium. G. B. WARD and M. A. Brooks.*
- 2:00 113 Comparative Culture of Insect Cells from the Lepidoptera, Coleoptera, and Orthoptera in Various Media. R. H. GOODWIN.*
- 2:15 114 Development of a Cell Line from the Coleopteran Insect, *Diabrotica undecimpunctata*. D. E. LYNN.*
- 2:30 Coffee Break
- 2:45 115 Expression of Gamma-Glutamyl Transpeptidase Activity in Primary Cultures of Hepatocytes Cocultivated with a Hepatocellular Carcinoma. L. B. JACOBSEN* and S. J. Beecher.
- 3:00 116 A Gelatin Microcarrier for Cell Culture. M. S. PARIS,* D. L. Eaton, D. E. Sempolinski, and B. P. Sharma.*
- 3:15 117 Impedance Measurements of Mammalian Cells in Tissue Culture. I. GIAEVER and C. R. Keese.*
- 3:30 118 Comparison of ¹²⁵I-Pindolol and ³H-Dihydroalprenolol Binding to Intact Myocytes in Culture. L. TERRACIO,* C. G. Ingebretsen, and W. R. Ingebretsen.
- 3:45 119 Isolation, Culture and Characterization of Adult Human Hepatocytes from Surgical Liver Biopsies. F. BALLETT,* M. E. Bouma, S. Wang, N. Amit, and R. Infante.

TUESDAY AFTERNOON: June 14, 1983

Exhibit Hall

POSTER SESSION

Odd numbered posters should be manned from 1:30 to 3:00 p.m.

Even numbered posters should be manned from 3:00 to 4:30 p.m.

Plants

- 120 The Efficacy of Incyte as a Surface Disinfectant for Plant Tissue Culture Explants. S. E. HYNDMAN.
- 121 Selection of Salt Tolerant Carrot Cell Lines. R. A. SIMONS and C. W. Lee.*
- 122 Rooting Apple Cultivars In Vitro: Interaction among Light, Temperature, and Phloroglucinol. R. H. ZIMMERMAN.*

Numbers preceding titles refer to abstracts.

Capitalization identifies speaker; asterisk (*) identifies member.

†Submitted for Wilton R. Earle Award.

#Submitted for the Honor B. Fell Award.

- 123 Effect of NaCl on Soybean Cells in Suspension Culture and on the Regenerative Ability of Intercotyledonary Nodes. T. M. CURRY, S. M. Bhatti, and P. S. Kahlon.*
- 124 Ionic Currents Along the Surface of Carrot Embryoids Measured with the Vibrating Probe. C. E. BARR and D. K. Dougall.*
- 125 Promotion of Bulbing in *Narcissus* (Daffodil) Shoots in vitro. J. E. A. SEABROOK* and B. G. Cumming.
- 126 Screening Alfalfas Adapted to the Southwestern United States for Regenerator Genotypes. G. C. PHILLIPS.*
- 127 Morphogenetic Responses of Cultured Hypocotyl and Cotyledonary Segments of *Leucaena*. S. VENKETESWARAN* and R. Nagmani.
- 128 Regeneration and Pigment Formation in Tissue Cultures of Leafy Spurge (*Euphorbiaceae*). D. G. DAVIS (sponsored by Edwin P. Marks*)
- 129 Thidiazuron Effects on Soybean Callus and Radish Cytokinin Bioassays. J. C. THOMAS* and F. R. H. Katterman.
- 130 Some Characteristics of Cell Suspension of Sweet Potato (*Ipomoea batatas*) and Tomato (*Solanum lycopersicoides*). J. H. M. HENDERSON.

Carcinogenesis

- 131 In Vitro Assay to Detect Chemical Inhibitors of Gap Junction-Mediated Intercellular Communication. C. JONES, J. E. Trosko,* L. Parker, and C. C. Chang.
- 132 Modifications of Gene Expression and Differentiation in Rat Tracheal Epithelial Cells Exposed to a Tumor Promoter. V. E. STEELE* and R. Wu.*
- 133 Balb-3T3 Cell Response to Extracts of Organic Air Samples as Seen by Their Survival in Aggregate Form. J. T. ZELIKOFF, N. Atkins, E. V. Orsi,* and T. J. Kneip.
- 134 Limited Attachment-Independent Growth in a Neurofibromatosis Skin Fibroblast Line. J. J. FREED* and M. E. Croke.
- 135 X-Ray-induced Chromatid Damage in Cells from Cancer-prone Individuals Implicates DNA Repair Deficiencies. K. K. SANFORD,* R. Parshad, and G. M. Jones.
- 136 Analysis of Intra- and Inter-Experimental Variation and Trend in a Standardized Assay for Chemical Enhancement of Viral Transformation in Hamster Embryo Cells. G. G. HATCH* and T. M. Anderson.
- 137 Viral Transformation Influences Repair of DNA-protein Crosslinks in Excision Deficient Human Fibroblasts. W. G. TAYLOR,* R. Gantt,* R. F. Camalier, and E. V. Stephens.

Aging

- 138 Kinetics of Histone Acetylation and Deacetylation in Human Diploid Fibroblasts. M. R. DUNCAN,* M. J. Robinson, and R. T. Dell'Orco.

TUESDAY AFTERNOON: June 14, 1983

Indian River

FILM SESSION

	Film Catalog Number		Running Time
1:30	#101	Anatomy of the Cell.* M. Bessis	20 Min.
2:00	#204	HeLa Cell in Tissue Culture.* G. G. Rose	17 Min.
2:30	#801	Chromosomes of Man.* S. Makino	20 Min.
3:00	#205	Interactions in Culture Between Normal and Tumor Cells of Rats.* H. Katsuta and T. Takaoka	16 Min.
3:20	#121	Cyclosis in Elodea.* C. M. Pomerat	6 Min.
3:30	#701	Development of Erythrocytic Stages of Avian Malaria.* C. G. Huff, A. C. Pipkin, A. B. Weatherby and D. V. Jensen	17 Min.

*Available for rental film from the TCA Business Office.

Numbers preceding titles refer to abstracts.

Capitalization identifies speaker; asterisk (*) identifies member.

†Submitted for Wilton R. Earle Award.

#Submitted for the Honor B. Fell Award.

TUESDAY EVENING: June 14, 1983

8-10 p.m.

ROUND TABLES

- | | | |
|-------------|---|-------------------------------|
| R-6 | Biological Endpoints: Carcinogenesis, Mutagenesis, and General Toxicity. | Lake |
| | <i>Convener:</i> D. Acosta, U. Texas | |
| R-7 | In Search of Better Media for Invertebrate Cell Culture. | Indian River |
| | <i>Convener:</i> F. Hink, Ohio State Univ. | |
| R-8 | Standardization of Cells, Media, and Substrates. | Palm Beach/Broward |
| R-9 | Herbaceous Plant Propagation. | Osceola |
| | <i>Convener:</i> J. Rowe, Agrigenetics Corp. | |
| R-10 | Stress Physiology in Plants. | Cape Canaveral/Volusia |
| | <i>Convener:</i> R. A. Bressan, Purdue Univ. | |
| R-11 | Cell Culture — Continuing Education | Dade/Florida Keys |
| | <i>Convener:</i> L. R. Murrell, U. Tennessee | |

WEDNESDAY MORNING: June 15, 1983**Lake****SESSION-IN-DEPTH****Molecular Biology of Growth Factors***Convener:* T. Maciag, Harvard Medical School

- | | | |
|-------|-----|---|
| 8:30 | | Introduction: T. MACIAG |
| 8:40 | 139 | Platelet Derived Growth Factor: Purification and Characterization. T. DEUEL. |
| 9:20 | 140 | Chemistry and Function of Somatomedin/Insulin-like Growth Factors and their Receptors. J. F. PERDUE (sponsored by T. Maciag*). |
| 9:50 | | Coffee Break |
| 10:05 | 141 | Purification of Growth Factors from Retina and Brain. Comparative Study of EDGF (Eye Derived Growth Factor) and BDGF (Brain Derived Growth Factor). J. Courty, J. PLOUET, M. Olivie, Y. Courtois,* and D. Barritault. |
| 10:40 | 142 | Molecular Biology of NGF Action. T. DARLING. |
| 11:15 | 143 | Molecular Cloning of Rare Gene Sequences Induced Promptly (within one hour) by the Platelet-Derived Growth Factor. C. D. STILES,* A. C. Reffel, and B. H. Cochran. |
| 11:50 | | Discussion |

WEDNESDAY MORNING: June 15, 1983**Cape/Volusia****SESSION-IN-DEPTH****Mutants and Variants from Plant Cultures***Convener:* R. Henke, U. Tennessee

- | | | |
|-------|-----|---|
| 8:30 | | Introduction: R. HENKE |
| 8:35 | 144 | Genetic Characterization of Mutants from Cell Culture: Cosegregation of Altered Enzymatic Phenotype with Selected Culture Traits in Progeny of Regenerated Plants. M. K. B. BERLYN. |
| 9:25 | 145 | Heritable Somaclonal Variation in Wheat. P. J. LARKIN, S. A. Ryan, R. I. S. Brettell, and W. R. Scowcroft. |
| 10:15 | | Coffee Break |
| 10:35 | 146 | Chromosomal and Mendelian Variability in Cultures and R Regenerated Plants. T. J. ORION. |
| 11:25 | 147 | Genetic Analysis of Alfalfa Variants from Somatic Cell Selection. E. T. BINDHAM. |

WEDNESDAY MORNING: June 15, 1983**Seminole****SESSION-IN-DEPTH****In Vitro Applications in Toxicology***Convener:* J. A. Bradlaw, Food and Drug Administration
R. T. Christian, Univ. of Cincinnati

- | | | |
|------|--|---|
| 8:30 | | Introduction: J. A. BRADLAW and R. T. CHRISTIAN |
|------|--|---|

Numbers preceding titles refer to abstracts.

Capitalization identifies speaker; asterisk (*) identifies member.

†Submitted for Wilton R. Earle Award.

#Submitted for the Honor B. Fell Award.

- 8:35 148 Organotypic Tissue Culture Models of Neurotoxic Sensory-motor System Diseases. P. S. SPENCER, B. Veronesi, J. Zagoren, M. Seelig, E. R. Peterson,* and M. B. Bornstein.*
- 9:15 149 Development of an In Vitro Model for Toxicity Testing of Cosmetic Formulations. W. H. J. DOUGLAS.
- 9:55 150 Rat Kidney Epithelial Cell Culture to Study Metal Toxicity. G. CHERIAN.
- 10:35 Coffee Break
- 10:50 151 Altered Regulation of Proliferation and Differentiated Function in Cultured Human Epidermal Cells by Chlorinated Aromatic Hydrocarbons. W. F. GREENLEE, L. G. Hudson, W. S. Stillman, R. D. Irons, and W. A. Toscano.
- 11:30 152 Genetic Toxicity Evaluation of Chemicals: Implications for Animal Assays. J. W. SPALDING.

WEDNESDAY MORNING: June 15, 1983

Palm Beach/Broward

CONTRIBUTED PAPERS

Differentiation in Cultured Cells

Convener: B. W. Wilson and J. A. McAteer

- 8:30 153 Vascular Smooth Muscle Cell Modulation in vivo and Growth Potential in vitro. J. GRUNWALD and C. C. Haudenschild.*
- 8:45 154 Stimulation of Growth and Expression of Differentiation Antigens of Human Melanocytes by Tumor Promoters. M. EISINGER,* O. Marko, A. Houghton, and I. B. Weinstein.
- 9:00 155 Biologic Modification of Antigenic Expression in Dibutyryl Adenosine 3'-5' Cyclic Monophosphate in Cultured Human Glioma Lines. M. B. SISTI, L. A. Pollock, B. H. Smith, and P. L. Kornblith.*
- 9:15 156 Preservation of Cultured Pancreas Explants from Syrian Golden Hamsters. J. RESAU, L. Marzella, J. Cottrell, and R. Jones.
- 9:30 157 Type I Alveolar Epithelial Cell Differentiation in Fetal Rat Lung Organ Explants. J. A. MCATEER* and T. J. Cavanagh.
- 9:45 158 Hypermethylation of Albumin and Alphafetoprotein Genes in Nonexpressing Mouse-Rat Hybrid Cell Lines. W. CHURCH and J. Papaconstantinou.*
- 10:00 Coffee Break
- 10:15 159 Initiation of Muscle-type Phosphorylase (PPL) and Phosphoglycerate Mutase (PGAM) Synthesis is Not Nerve-dependent. M. DAVIDSON, T. Mongini, S. A. Foster, S. DiMauro, and A. F. Miranda.*
- 10:30 160 Inhibitory Effects of Mouse Serum on Chick Muscle Cell Differentiation. R. B. FINLEY and C. L. Parker.*
- 10:45 161 Reversible Inhibition of the Accumulation of Muscle-Specific Proteins by the Differentiation Inhibitor (DI). M. J. Evinger-Hodges, J. R. FLORINI* and B. M. Vertel.
- 11:00 162 †Control of AChE in Myotubes by Serum. G. T. PATTERSON, E. G. Hayman,* and B. W. Wilson.*
- 11:15 163 #Characteristics of Chick Embryos Maintained in Shell-less Culture. G. B. LESTER and C. L. Parker.*
- 11:30 164 Regulation of Differentiation of Adult Human and Rat Hepatocytes Cultured in a Serum-free Medium by Interaction with Another Liver Cell. C. GUGUEN-GUILLOUZO,* B. Clement, D. Glaise, and A. Guillouzo.

WEDNESDAY MORNING: June 15, 1983

Dade/Florida Keys

CONTRIBUTED PAPERS

Tumor Biology

Convener: M. P. Moyer and J. Ridge

- 9:00 165 #Histotypic Expression of Tumor Architecture by Human Cell Lines in Chick Embryonic Tissue Organ Culture. J. RIDGE and P. D. Noguchi.*
- 9:15 166 †Comparison of Culture Media for the In Vitro Clonal Growth of Human Primary Breast Carcinoma Cells. G. J. BESCH, P. R. Rosenbaum, W. H. Wolberg, and M. N. Gould.*
- 9:30 167 Image Analysis in the Quantitation of Human Glioma-Derived Cell Properties and Chemotherapeutic Sensitivity. B. H. SMITH, J. R. Ellis, C. Cooke, C. Gibson, C. Pepin, B. M. Chronwall, P. L. Kornblith,* M. A. Greenwood, and P. E. McKeever.
- 9:45 168 Characterization of Cell Cultures from Normal and Neoplastic Human Brain Tissue. B. P. Barna,* J. W. Bay, S. M. Chou, G. Hoeltge, and B. JACOBS.

Numbers preceding titles refer to abstracts.

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†Submitted for Wilton R. Earle Award.

#Submitted for the Honor B. Fell Award.

- 10:00 169 Inhibitory Effects of Auranofin Analogs on HeLa Cells. T. M. SIMON,* D. H. Kinishima, J. D. Hoeschele, and A. Lorber.
- 10:15 Coffee Break
- 10:30 170 Intrinsic and Acquired Resistance to BCNU Correlates with the Near-Diploid Cells in 4 Freshly Resected Human Gliomas. J. R. SHAPRIO,* P-Y. Pu, and W. R. Shapiro.
- 10:45 171 Use of Athymic Nude Mice to Establish Human Tumor Cell Lines. J. W. HARBELL,* D. B. Mecill, and L. L. Woods.
- 11:00 172 Control of Growth and Differentiation in Rat Prostatic Adenocarcinoma Cells by Butyrate and Related Short-chain Fatty Acids. D. H. REESE,* N. L. Block, and V. A. Politano.
- 11:15 173 Effect of Gonadal Hormones (GH) on Human Renal Cell Carcinoma (RCC) in Serum-Free Medium (SFM). A. L. BEAR, R. V. Clayman,* R. S. Figenshau, and E. E. Fraley.
- 11:30 174 Differential Phenotypic Response of Normal and Neoplastic Mouse Mammary Epithelium in Collagen Matrix Culture. W. JONES, A. Lee, and R. C. Hallowes.
- 11:45 175 Bromocriptine Acts As an Agonist-antagonist of Angiotensin in Human Adrenocortical Conn's Adenomatous Cells in Primary Culture. U. ARMATO* and F. Mantero.

WEDNESDAY MORNING: June 15, 1983

Exhibit Hall

POSTER SESSION

Odd numbered posters should be manned from 9:00 to 10:30 a.m.

Even numbered posters should be manned from 10:30 a.m. to noon.

Immunology

- 176 Effect of Dextran and Ficoll on Enhancement of Antibody Production by Murine Hybridoma. N. YABE, Y. Matsuya, and I. Yamane.*
- 177 Characterization of Monoclonal Antibody Produced Against Varicella Virus. C. Cleghorn, J. P. Iltis, D. L. MADDEN, A. K. Weinrod, and D. A. Fuccillo.*
- 178 Polyclonal and Monoclonal Antibodies that Identify Breast Myoepithelial and Breast Fibroblast Cells. R. L. CERIANI, E. W. Blank, and J. Lee.
- 179 *Trypanosoma cruzi* Infection of Human Muscle Cells is Inhibited by Antibodies to Parasite Surface Antigens. R. BOROJEVIC,* J. Scharfstein, and L. Mendonca-Previato.
- 180 Production of the C3 Component of the Complement by Cultures of Rat Liver Epithelial Cells. Stimulating Effect of Supernatants of Human. M. GUIGUET* and G. Mack.

Methodology

- 181 Preparative Density-Gradient Electrophoresis of Cultured Human Embryonic Kidney Cells. M. E. KUNZE, L. D. Plank, and P. Todd,* and V. Giranda.
- 182 Collagen as an Attachment Factor for Cell Monolayers on Gas-Permeable Teflon Membranes. M. G. GABRIDGE* and M. F. Gladd.
- 183 Large Scale Culture of Human Breast Carcinoma Cells to Isolate Estrogen Receptors. M. T. WININGER,* W. D. Ross,* and T. Allen.*
- 184 An Assay for the Accuracy of Protein Synthesis in Red Blood Cells. K. D. Tschanz, A. Gotto, and C. L. BUNN.*
- 185 Evaluation of a New and Flexible Method for Culturing Macrophages: Attachment to and Removal from Cytodex Microcarriers. C. Ostlung, J. Clark, and M. KRUSE.*

Mutagenesis

- 186 Isolation of Epithelial Subcomponents of the Mouse Mammary Gland for the Tissue Level Culture Studies. W. JONES, N. Choongkittaworn, and H. L. Hosick.*
- 187 Cytotoxicity and Absence of Mutagenic Activity of Vomitoxin (4-deoxynivalenol) in an Hepatocyte-mediated Mutation Assay with V79 Chinese. C. G. ROGERS* and C. Heroux-Metcalf.
- 188 Pluronic Polyols as Vehicles for Petroleum Derivatives in in vitro Assays. M. HARNOIS,* D. Marino, R. Papciak,* M. Grant, D. Crutchfield, and S. Brechner.*

Hormones

- 189 The Influence of Metabolic Substrates Upon Hepatocyte Proliferation in Short Term Primary Cultures. J. A. MCGOWAN* and N. L. R. Bucher.*
- 190 Modulation by Vitamin A Acetate of the Mitogenic Activity of EGF and Insulin on Prostatic Epithelium in Defined Medium. D. M. CHAPRONIERE-RICKENBERG* and M. M. Webber.*

Numbers preceding titles refer to abstracts.

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#Submitted for the Honor B. Fell Award.

- 191 Influences of Culture Media on the Survival and Neuritic Growth of Chick Embryo Ciliary Ganglion Neurons in Monolayer Culture. E. HEWITT,* M. Manthorpe,* S. D. Skaper, G. E. Davis, and S. Varon.

Enzymology

- 192 Induction of Transglutaminase Activity in Transformed Human Cells by Sodium Butyrate. P. J. BIRCKBICHLER,* G. R. Orr, M. K. Patterson,* E. Conway, M. Maxwell, and P. J. A. Davies.
- 193 Substrates of Cellular Transglutaminase Using WI38 Cells Generate Isopeptide Bonds. M. K. PATTERSON,* M. D. Maxwell, P. J. Birckbichler,* and E. Conway.
- 194 Separation of Exponential Cultures of V-79 Cells by Counterflow Centrifugal Elutriation: Correlation of Protein and Superoxide. E. D. WERTS, L. L. Laban, and E. J. Petty.

WEDNESDAY MORNING: June 15, 1983

Osceola

WORKSHOP

Plant Propagation I

Convener: Pamela Myers, Native Plants, Inc., Salt Lake City

- 9:00 W-1 Innovative Tissue Culture in Agriculture — Observations Since Being Involved at Epcot Center. H. ROBATILLE, Disney World — Epcot Center, Orlando, FL.
- 9:30 W-2 Managing a Plant Tissue Culture Operation — Factors Influencing Efficiency. R. STRODE, Oakdell Nursery, Apopka, FL.
- 10:00 Coffee
- 10:20 W-3 Propagation of Magnolia in Tissue Culture. I. BEIDERMAN, Brooklyn Botanic Garden Center, Ossining, NY.
- 10:50 W-4 Micropropagation of Maples. C. ALBRECHT, Microplant Nurseries, Gervais, OR.

WEDNESDAY AFTERNOON: June 15, 1983

- 12-1 Tissue Culture Association Business Meeting Seminole
2 Social Event at Cyprus Gardens

THURSDAY MORNING: June 16, 1983

Dade/Florida Keys

SESSION-IN-DEPTH

Perspectives in Cytogerontology

Convener: L. Hayflick, U. Florida

- 8:30 195 Perspectives in Cytogerontology. L. HAYFLICK.
- 8:50 196 Dominance of Finite vs. Infinite In Vitro Lifespan in Somatic Cell Hybrids. J. R. SMITH* and O. Pereira-Smith.
- 9:20 197 Senescent WI-38 Cells Bind Epidermal Growth Factor (EGF) but Fail to Express the EGF Receptor-Associated Protein Kinase Activity. C. Carlin, J. Golczewski, P. D. Phillips,* B. Knowles, and V. J. CRISTOFALO.*
- 9:50 198 The Role of Protein and RNA Synthesis in the Inhibition of Nuclear DNA Synthesis in Heterokaryons Resulting from the Fusion of Senescent and Low Passage, Actively Dividing Human Diploid Fibroblast-Like Cells. T. H. NORWOOD, G. C. Burmer, and C. J. Zeigler.
- 10:20 Coffee Break
- 10:35 199 Amplification of an "Inter-Alu" Sequence in Extrachromosomal DNA Circles During In Vivo and In Vitro Aging of Normal Human Cells. R. J. SHMOOKLER REIS, C. K. Lumpkin, Jr., J. R. McGill, K. T. Riabowol, and S. Goldstein.*
- 11:05 200 EGF Stimulated Cell Proliferation and Proliferation-Associated Protein Synthesis in Young and Old WI-38 Cells. P. D. PHILLIPS* and E. J. Kuhnle.
- 11:20 201 †The Effects of Glucocorticoid Conditioned Medium upon the Proliferation of WI-38 Cells. C. FINLAY and V. J. Cristofalo.*
- 11:35 202 The Presence of non-Cycling Cells at All Levels of Population Doubling of IMR-90 Fibroblasts. L. N. CASTOR.*
- 11:50 203 Reorganization of the Genome During Aging of Human Fibroblasts. A. MACIEIRA-COELHO* and F. Puvion-Dutilleul.

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THURSDAY MORNING: June 16, 1983

Cape Canaveral/Volusa

SESSION-IN-DEPTH

Plant Vectors and Transposons

Convener: K. Redenbaugh, Plant Genetics, Inc.
R. Mans, Univ. of Florida

- 8:30 Introduction: **K. REDENBAUGH**
8:35 204 Trauma as a Means of Initiating Change in Genome Organization and Expression. **B. McCLINTOCK.**
9:15 205 Characterization of Putative Transposons in Cytoplasmic Male Sterility of Maize. **R. J. MANS.**
9:55 206 Genetic Manipulation of Chloroplasts and Mitochondria by Plant Protoplast Fusion. **L. MENCZEL, F. Nagy, P. Medgyesy, and P. Maligua.**
10:35 Coffee Break
10:50 207 In Vitro Plant Transformation by Bacterial Co-cultivation and Expression of Foreign Genes in Plant Cells. **R. T. FRALEY, S. G. Rogers, and R. B. Horsch.**
11:30 208 New Developments in the Transformation of Plant Tissues. **M. P. GORDON, E. Nester, F. White, R. Amasino, A. Powell, B. Taylor, G. Huffman, G. H. An, and T. Nagata** (sponsored by K. Redenbaugh*).

THURSDAY MORNING: June 16, 1983

Palm Beach/Broward

SESSION-IN-DEPTH

Tumor Biology at the Tissue Level in Culture

Convener: J. Leighton, Medical College of Pennsylvania

- 8:45 Introduction: **J. LEIGHTON**
8:45 209 Insights into Human Cancer Using Organ Cultures. **J. C. PETRICCIANI*** and I. Levenbook.*
9:15 210 Migration of a Rat Bladder Carcinoma Cell Line on Solid Substrata and in Three-Dimensional Tissue. **R. TCHAO, W. Schroyens, and J. Leighton.***
9:30 211 Anchorage Independent Survival as an Indicator of Malignant Transformation: Morphological and Biochemical Comparison. **W. A. SUK,* J. E. Humphreys, and E. P. Hays.**
9:45 212 Phenotypic Variability in Expression of Anchorage Independence by a Human Breast Tumor Cell Line. **M. C. Hancock,* A. J. HACKETT,* and H. S. Smith.***
10:00 Coffee Break
10:15 213 The Analysis of Some Interactive Processes in Mammary Disease. **H. L. HOSICK,* C. A. Carrington, and N. Choongkittaworn.**
10:45 214 Epithelium from Human Breast Cancers in Culture: Is it Really Cancer? **R. C. HALLOWES,* L. A. Peachey, and S. Cox.**
11:15 215 Experimental Surgical Pathology Using Histophysiologic Gradient Culture. Simulation and Analysis of Organoid Associations of Cells. **J. LEIGHTON,* R. Tchao, and R. F. Nicosia.**
11:45 Discussion

THURSDAY MORNING: June 16, 1983

Lake

CONTRIBUTED PAPERS

Virology and Toxicology

Conveners: D. Acosta and G. F. Amborski

- 9:00 216 Fish Cell Line: Persistent Infection with a Coronavirus. **B. LIDGERDING.***
9:15 217 Differential Interferon Sensitivities of Lethal and Non-lethal Strains of Rift Valley Fever Virus (RVFV) In Vitro. **J. A. ROSEBROCK,* G. W. Anderson, Jr., H. Schellekens, and C. J. Peters.**
9:30 218 Cellular Studies Involving Bovine Leukemia Virus (BLV). **G. F. AMBORSKI,* J. Lo, D. Samid, G. Richardson, and J. Casey.**
9:45 219 Enhanced Expression of EBV Viral Capsid Antigen Associated with Benzene Induced Architectural Changes in the B95-8 Line. **E. V. Orsi,* S. L. MAINES,* G. Ragona,* and S. Resta.**

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Capitalization identifies speaker; asterisk (*) identifies member.

†Submitted for Wilton R. Earle Award.

#Submitted for the Honor B. Fell Award.

- 10:00 Coffee Break
 10:15 220 Semiquantitative Morphologic Analysis to Quantify the Cytotoxicity of Cadmium to Cultured Hepatocytes. E. M. B. SØRENSEN and D. Acosta.*
 10:30 221 Cardiotoxicity of Tricyclic Antidepressants in Cultured Rat Myocytes. D. ACOSTA* and K. Ramos.*
 10:45 222 Good Correlation Between the Cytotoxicity of Drugs and Their Allergic Side Effects. B. R. EKWALL.*

THURSDAY MORNING: June 16, 1983

Orange

CONTRIBUTED PAPERS

Growth: Promoters and Control

Conveners: M. Absher and U. K. Ehmann

- 8:30 223 Conditioned Medium Promotes Clonal Growth of Amniotic Fluid Cells. C. H. LAUNDON,* R. E. Priest, and J. H. Priest.*
 8:45 224 Interleukin-1 Promotes Fibroblast Proliferation in Monolayer, Not in Soft Agar, and Not Mediated Through the EGF-Receptor. L. M. MULHALL, S. R. Newcom,* C. W. Bitter, and M. S. Borzy.
 9:00 225 The Effect of Retinoic Acid on Normal and Transformed Human Embryonic Lung Fibroblasts. B. STANULIS-PRAEGER.*
 9:15 226 Response of Fibroblasts to Bleomycin Suggest Subpopulations with Variable Sensitivity. M. P. ABSHER,* D. L. Sylwester, and P. Vacek.
 9:30 227 Effect of Lipopolysaccharide on Cell Attachment, Cell Morphology, and Thymidine Incorporation into DNA of Weanling Rat Hepatocytes in Tissue. J. M. ANDRES* and M. L. Powell.
 9:45 228 F Prostaglandins Very Powerfully Stimulate Neonatal Hepatocyte Growth. U. ARMATO.*
 10:00 Coffee Break
 10:15 229 Feeder Cells Promote Proliferation of Mouse Mammary Epithelial Cells by U. K. EHMANN* and D. S. Misfeldt.*
 10:30 230 Growth of Human Fibroblasts Derived from the Papillary and Reticular Dermis. I. A. SCHAFER,* M. Pandey, and B. R. Davis.
 10:45 231 A Liquid Microcarrier System. C. R. KEESE, and I. Giaever.
 11:00 232 Laminin and Fibronectin Adsorption to a New Surface for Cell Culture: Effect on Cell Attachment and Spreading. T. A. GUHL,* and D. M. Umstatter.*
 11:15 233 Propagating Rat Liver Epithelial Cells on Microcarriers Either in Serum-Supplemented or in Serum-Free Medium. M. CHESSEBEUF,* G. Mignot, and P. Padiou.*
 11:30 234 Cinemicrographic Analysis of Mitosis in Primary Cultures of Adult Rat Hepatocytes. K. Hasegawa, K. Watanabe, and M. Koga.

THURSDAY MORNING — June 16, 1983

Osceola

WORKSHOP

Plant Propagation II

Convener: Pamela Myers, Native Plants, Inc., Salt Lake City

- 9:00 W-5 Virus Elimination in Caladium and Gerbera through Tissue Culture Techniquet — Effects on Marketing. B. HARTMAN.
 9:30 W-6 Methods of Surface Sterilizing Tools — Including a New Approach. G. GENNEN.
 10:00 Coffee
 10:20 W-7 Field Establishment of In Vitro Propagated Potatoes. J. KELLY.
 10:50 W-8 Greenhouse Establishment in In Vitro Propagated Plants. S. GARTON.

READ BY TITLE

- 235 Influence of Vessel Closures on Somatic Embryogenesis in Wild Carrot *Daucus carota* L. D. C.. VERMA* and J. D. Litvay.
 236 Requirement for Endogenous Collagen Synthesis in Adhesion of Epithelial Cells to Collagen Substratum. T. OKIGAKI,* M. Yamada, and N. Ikegami.

Numbers preceding titles refer to abstracts.
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 †Submitted for Wilton R. Earle Award.
 #Submitted for the Honor B. Fell Award.

ABSTRACTS WILL NOT BE PRINTED IN THE MEETING PROGRAM. BRING YOUR ABSTRACT ISSUE OF *IN VITRO* TO THE ANNUAL MEETING. ABSTRACT ISSUES OF *IN VITRO* WILL BE SOLD AT THE REGISTRATION DESK TO ANYONE REQUIRING AN ADDITIONAL COPY.