The CONTENTS arranged by Subject Category can be found immediately following these CONTENTS.

Asterisks * preceding page numbers refer to studies using human-derived material.

Perspectives in Cancer Research

6019 Chromosome Translocations and Human Cancer. Carlo M. Croce.

BASIC SCIENCES

6024 DNA Damage in Cultured L1210 Cells by 2-Haloethoxy Esters of (Methylsulfonyl)methanesulfonic Acid. Jo Ann Alexander, Bonnie J. Bowdon and Glynn P. Wheeler.

*6029 Detection of Activated M, 21,000 Protein the Product of ras Oncogenes, Using Antibodies with Specificity for Amino Acid 12. Gail Wong, Norman Arnheim, Robin Clark, Peter McCabe, Michael Innis, Lois Aldwin, Danute Nitecki and Frank McCormick.


*6054 Two Mechanisms of Synergism When Amphotericin B Is Used in Combination with Actinomycin D or 1-(2-Chloroethyl)-3-cyclohexyli-1-nitrosourea against the Human Promyelocytic Leukemia Cell Line HL-60. Aline Vertut-Croquin, Janina Brajtburg and Gerald Medoff.

*6059 Role of Intracellular Calcium Ion in Human Promyelocytic Leukemia HL-60 Cell Differentiation. Toshiro Okazaki, Toshihiro Mochizuki, Masaro Tashima, Hiroyoshi Sawada and Haruto Uchino.


*6068 Changes in Antigen Expression on Human FME Melanoma Cells after Exposure to Photoactivated Hematoporphyrin Derivative. Catharina de Lange Davies, Andre Western, Tore Lindmo and Johan Moan.


*6083 Potentiation of Lymphocyte Responses by Monoclonal Antibodies to the Ganglioside GD1b. Peter Hersey, Stephen D. Schibeci, Phillip Townsend, Christine Burns and David A. Cherenik.


*6101 Pharmacokinetics of Intraventricular and Intravenous N,N',N",N"-Triethylenephosphoramide (Thiotepa) in Rhesus Monkeys and Humans. John M. Strong, Jerry M. Collins, Cynthia Lester and David G. Poplack.


6125 Effects of 7-R-O-Methylnoagarol (Menogaril) on L1210 Cell Progression in Vitro and in Vivo. Earl G. Adams and Bijoy K. Bhuayan.

6131 Metastatic Potential and Spontaneous Mutation Rates: Studies with Two Murine Cell Lines and Their Recently Induced Metastatic Variants. Wayne S. Pendal and Philip Frost.

*6136 Increase in Human Exposure to Methylamine Precursors of N-Nitrosamines after Eating Fish. Steven H. Zeisel and Kerry-Ann DaCosta.

6139 Inhibition of Human DNA Polymerase a by α1-Antichymotrypsin. Michio Tsuda, Masashi Masuyama and Tsunehiko Katsunuma.

*6143 Characterization of the CA 125 Antigen Associated with Human Epithelial Ovarian Carcinomas. H. M. Davis, V. R. Zurawski, Jr., R. C. Bast, Jr., and T. L. Klug.

6149 Involvement of Protein Kinase C Activation in Ornithine Decarboxylase Gene Expression in Primary Culture of Newborn Mouse Epidermal Cells and in Skin Tumor Promotion by 12-O-Tetradecanoylphorbol-13-acetate. Ajit K. Verma, Rey-Chen Pong and Deborah Erickson.


6160 Effect of Sodium Phenobarbital and Sodium Saccharin in AIN-76A Diet on Carcinogenesis Initiated with N-(4-(5-Nitro-2-furyl)-2-thiazolyl)formamide and N,N-Dibutyl Nitrosamine in Male F344 Rats. Katsumi Imaida and Ching Yung Wang.

† The CONTENTS arranged by Subject Category can be found immediately following these CONTENTS.


6191 Alteration of Fluorouracil Metabolism in Human Colon Cancer Cells by Dipyridamole with a Selective Increase in Fluorodeoxyuridine Monophosphate Levels. Jean L. Grem and Paul H. Fischer.


*6207 2',5'-Oligoadenylate Synthetase Activity in Human Mammary Tumors and Its Potential Correlation with Tumor Growth or Hormonal Responsiveness. Dai Kee Liu, Gail F. Owens and Peter D. Feil.


6223 Experimental Radioimmunotherapy of Murine Lymphoma with 131I-labeled Anti-T Cell Antibodies. Christopher C. Badger, Kenneth A. Krohn, Howard Shulman, Nancy Flournoy and Irwin D. Bernstein.


*6236 Inhibitory Effects of Elevated Temperature on Human Cytokine Production and Natural Killer Activity. Charles A. Dinarello, Roy A. Dempsey, Mark Allegretta, Gail LoPreste, Nicholas Dainiak, David R. Parkinson and James W. Mier.


6246 Effect of Inhibitors of Ornithine Decarboxylase on Retrovirus Induced Transformation of Murine Erythroid Precursors in Vitro. S. Peter Klinken, Manuel J. Castilla and Snorri S. Thorgeirsson.


6255 Metabolism of Nitromephrine (CI 628) in the Immature Female Rat: Role of Gastrointestinal Microflora in the Biotransformation of a Triarylethylene Antiestrogen. Peter C. Ruenitz and Jerome R. Bagley.

6260 Inhibition of Dimethyl Sulfoxide Induced Erythropoietic Differentiation of Murine Erythroleukemia Cells in Culture. Magda Foresti, Luciano Gaudio, Giuseppe Geraci and Paola Manduca.

*6264 Enhanced Inhibition of Colony Formation of Human Renal Cell Carcinoma in Soft Agar by the Combination of α-Difluoromethylornithine and Recombinant γ-Interferon. Kazuo Gojhi, Shin-ichi Murao, Sakan Maeda, Taketoshi Sugiyama and Sadao Kamidono.


6279 Comparison and Characterization of Growth Inhibition in L1210 Cells by α-Difluoromethylornithine, an Inhibitor of Ornithine Decarboxylase, and N,N³-Bis(ethyl)spermidine, an Apparent Regulator of the Enzyme. Carl W. Porter, Barbara Ganis, Tim Vinson, Laurence J. Martin, Debora L. Kramer and Raymond J. Bergeron.

*6286 Modulation of Thiopurine Cytotoxicity in the HL-60 Cell Line by Physiological Concentrations of Hypoxanthine. Solomon Zimm, Gloria E. Johnson and David G. Poplack.


**6349** Foregastro Lesions in Rats and Mice Administered 3-Chloro-2-methylpropene by Gavage for Two Years. Po C. Chan, Joseph K. Haseman, Gary A. Boorman, James Huff, Allan G. Manus and Richard H. Cardy.

**6353** Presence of Proteolytically Processed Keratins in the Culture Medium of MCF-7 Cells, Raymond Chan, Paul V. Rossitto, Benjamin F. Edwards and Robert D. Cardiff.


**6364** Culture of Squamous Head and Neck Cancer on 3T3 Fibroblasts following Isokinetic Velocity Sedimentation. melody A. Cobleigh, John L. Kennedy, James H. Hill, Karin M. Lindholm, Patricia W. Langenber and Edward L. Applebaum.


**6374** Preferential Expression of a M, 155,000 Milk-Fat-Globule Membrane Glycoprotein on Luminal Epithelium of Lobules in Human Breast. Ashraf Imam, Mary M. Drushella, Clive R. Taylor and Zoltán A. Tokés.

**6380** HERBITARY VARIATION IN EXPRESSION OF MULTIPLE TUMOR ASSOCIATED EPITOPES ON A HIGH MOLECULAR WEIGHT MUCIN-LIKE ANTIGEN. Peter S. Linsley, Vincent Ochs, Diane Horn, David B. Ring and Arthur E. Frankel.

**6387** A New Concept for Macromolecular Therapeutics in Cancer Chemotherapy: Mechanism of Tumorotropic Accumulation of Proteins and the Antitumor Agent Smancs. Yasuhiro Matsumura and Hiroshi Maeda.

**6393** Monoclonal Antibodies against Cell-Surface Antigens of the Metastatic Rat 13762NF Mammary Adenocarcinoma and Their Cross-Reactivity with Human Breast Carcinomas. Susan M. North, Peter A. Steck and Garth L. Nicolson.


**6413** Enhancement by γ-Interferon of *In Vitro* Tumor Radiolocalization by a Monoclonal Antibody against HLA-DR Antigen. Gill Rowlinson, Frances Balkwill, Deborah Snook, George Hooker and Agamemnon A. Epenetos.

**6418** Ability of Inhibitors of Glycosylation and Protein Synthesis to Sensitize Cells to Abrin, Ricin, *Shigella* Toxin, and *Pseudomonas* Toxin. Kirsten Sandvig, Tor Ingة Tønnessen and Sjur Olness.

**6423** Induction of Prostate Carcinoma in Situ at High Incidence in F344 Rats by a Combination of 3,2'-Dimethyl-4-aminobiphenyl and Ethyl Estradiol. Tomoyuki Shirai, Shoji Fukushima, Etsuo Ikawa, Yoshiaki Tagawa and Nobuyuki Ito.

**6427** Microinjection of the ras Oncogene Protein into Nonestablished Rat Embryo Fibroblasts. Neil F. Sullivan, Raymond W. Sweet, Martin Rosenberg and James R. Feramisco.

**6433** *In Vitro* Transformation of Primary Rat Tracheal Epithelial Cells by 5-Azacytidine. Cheryl Walker and Paul Nettesheim.

**6438** Collagenase and Elastase Production by Mouse Mammary Adenocarcinoma Primary Cultures and Cloned Cells. Maria Zeydel, Sachiko Nakagawa, Luis Biempica and Shizuko Takahashi.


**CLINICAL AND EPIDEMIOLOGICAL INVESTIGATIONS**


**6456** Characterization of Malignant Peripheral Blood Cells of Juvenile Chronic Myelogenous Leukemia. Zeev Estrov, Barry Zimmerman, Tom Grunberger, Judy Chao, Ikuko E. Teshima, Helen S. Chan and Melvin H. Freedman.


**6471** Cancer Procoagulant in Human Tumor Cells: Evidence from Melanoma Patients. Maria Benedetta Donati, Carlo Gambacorti-Passerini, Bruno Casali, Anna Falanga, Paola Vanotti, Giuseppe Fossati, Nicola Semeraro and Stuart G. Gordon.

**6475** Histochemical Studies with an Estrogen Receptor-related Protein in Human Breast Tumors. Antonio Cano, Arnold I. Coffer, Remy Adatia, Rosemary R. Millis, Robert D. Rubens and Roger J. B. King.


**6489** Development of Primary and Secondary Immune Responses to Mouse Monoclonal Antibodies Used in the Diagnosis and Therapy of Malignant Neoplasms. Nigil S. Courtenay-Luck, Agamemnon A. Epenetos, Richard Moore, Mark Larche, Dimitris Pectasides, Babu Dhokia and Mary A. Ritter.


**6509** Incorporation of Iododeoxyuridine into DNA of Granulocytes in Patients. Karl Belanger, Raymond W. Klecker, Jr., Jan Rowland, Timothy J. Kinsella and Jerry M. Collins.


Continued
Beginning January 1987, Cancer Research will be published twice a month. Issues will be numbered from 1 through 24 and dated the 1st and 15th day of each month. All of the subject categories covered by the journal will be represented in every issue.

NOTE: Advance registration form for 78th Annual Meeting of the American Association for Cancer Research available in the back of this issue.
Cancer Research
VOLUME 46 • NUMBER 12

CONTENTS Arranged by Subject Category

Perspectives in Cancer Research

6019 Chromosome Translocations and Human Cancer. Carlo M. Croce.

BASIC SCIENCES

Biochemistry and Biophysics


6068 Changes in Antigen Expression on Human FME Melanoma Cells after Exposure to Photoactivated Hematoporphyrin Derivative. Catharina de Lange Davies, Andre Western, Tore Lindmo and Johan Moan.

6078 Changes in Isoenzyme Profiles during Induction of Differentiation in Human Myelomonocytic Leukemia Cell Lines. Hans G. Drexler, Kazuyuki Otsuka, Gerhard Gaedicke and Jun Minowada.


6139 Inhibition of Human DNA Polymerase α by α1-Antichymotrypsin. Michio Tsuda, Masashi Masuyama and Tsunehiko Katsumuna.

6143 Characterization of the CA 125 Antigen Associated with Human Epithelial Ovarian Carcinomas. H. M. Davis, V. R. Zurawski, Jr., R. C. Bast, Jr., and T. L. Klug.


6207 2',5'-Oligoadenylate Synthetase Activity in Human Mammary Tumors and Its Potential Correlation with Tumor Growth or Hormonal Responsiveness. Dai Kee Liu, Gail F. Owens and Peter D. Feil.


6279 Comparison and Characterization of Growth Inhibition in L1210 Cells by α-Difluoromethylornithine, an Inhibitor of Ornithine Decarboxylase, and Nω,Nω-Bis(ethyl)peramidines, an Apparent Regulator of the Enzyme. Carl W. Porter, Barbara Ganis, Tim Vinson, Laurence J. Marton, Debora L. Kramer and Raymond J. Bergeron.


Heritable Variation in Expression of Multiple Tumor Associated Epitopes on a High Molecular Weight Mucin-like Antigen. Peter S. Linsley, Vincent Ochs, Diane Horn, David B. Ring and Arthur E. Frankel.


Carcinogenesis


Increase in Human Exposure to Methylene Precursors of N,N-Dinitrosamines after Eating Fish. Steven H. Zeisel and Kerry-Ann DaCosta.

Involvement of Protein Kinase C Activation in Ornithine Decarboxylase Gene Expression in Primary Culture of Newborn Mouse Epidermal Cells and in Skin Tumor Promotion by 12-O-Tetradecanoylphorbol-13-acetate. Ajit K. Verma, Rey-Chen Pong and Deborah Erickson.

Effect of Sodium Phenobarbital and Sodium Saccharin in AIN-76A Diet on Carcinogenesis Initiated with N-(4-Nitro-2-furyl)-2-thiazoylformamide and N,N-Dibutylamino in Male F344 Rats. Katsumi Imaida and Ching Yung Wang.

Inhibition of Functional Intercellular Communication as a Possible Short-Term Test to Detect Tumor-promoting Agents: Results with Nine Chemicals Tested by Dye Transfer Assay in Chinese Hamster V79 Cells. Marco J. Zeilmaker and Hiroshi Yamashiki.


Effect of Inhibitors of Ornithine Decarboxylase on Retrovirus Induced Transformation of Murine Erythroid Precursors in Vitro. S. Peter Klinken, Manuel J. Castilla and Frederick W. Alt.


Foregut Mesenchymal Lesions in Rats and Mice Administered 3-Chloro-2-methylpropene by Gavage for Two Years. Po C. Chan, Joseph K. Haseman, Gary A. Boorman, James Huff, Allan G. Manus and Richard H. Cardy.

Induction of Prostate Carcinoma in Situ at High Incidence in F344 Rats by a Combination of 3,2'-Dimethyl-4-aminobiphenyl and Ethinyl Estradiol. Tomoyuki Shirai, Shoji Fukushima, Etsuo Ikawa, Yoshiaki Tagawa and Nobuyuki Ito.

In Vitro Transformation of Primary Rat Tracheal Epithelial Cells by 5-Azacytidine. Cheryl Walker and Paul Nettesheim.

Endocrinology


Potentiation of Lymphocyte Responses by Monoclonal Antibodies to the Ganglioside GD, Peter Hersey, Stephen D. Schibeci, Phillip Townsend, Christine Burns and David A. Cheres.


Microinjection of the ras Oncogene Protein into Nonestablished Rat Embryo Fibroblasts. Neil F. Sullivan, Raymond W. Sweet, Martin Rosenberg and James R. Feramisco.

**Preclinical Pharmacology and Experimental Therapeutics**

DNA Damage in Cultured L1210 Cells by 2-Haloethyl Esters of (Methylsulfonyl)methanesulfonic Acid. Jo Ann Alexander, Bonnie J. Bowdon and Glynn P. Wheeler.


Effects of 7-R-O-Methylnorgarol (Menogaril) on L1210 Cell Progression In Vitro and In Vivo. Earl G. Adams and Bijoy K. Bhuyan.


Alteration of Fluorouracil Metabolism in Human Colon Cancer Cells by Dipyridamole with a Selective Increase in Fluorodeoxyuridine Monophosphate Levels. Jean L. Grem and Paul H. Fischer.


Enhanced Inhibition of Colony Formation of Human Renal Cell Carcinoma in Soft Agar by the Combination of α-Difluoromethyl-ornithine and Recombinant γ-Interferon. Kazuo Gohji, Shin-ichi Murao, Sakan Maeda, Taketoshi Sugiyama and Sadao Kamidono.


Modulation of Thiopurine Cytotoxicity in the HL-60 Cell Line by Physiological Concentrations of Hypoxanthine. Solomon Zimm, Gloria E. Johnson and David G. Poplack.

A New Concept for Macromolecular Therapeutics in Cancer Chemotherapy: Mechanism of Tumorotropic Accumulation of Proteins and the Antitumor Agent Smancs. Yasuhiro Matsumura and Hiroshi Maeda.

**CLINICAL AND EPIDEMIOLOGICAL INVESTIGATIONS**


Incorporation of Iododeoxyuridine into DNA of Granulocytes in Patients. Karl Belanger, Raymond W. Kleecker, Jr., Jan Rowland, Timothy J. Kinsella and Jerry M. Collins.


*Epidemiological*


6455  Announcements

6456  Erratum

6457  Acknowledgment to Reviewers

6456  Author Index

Beginning January 1987, Cancer Research will be published twice a month. Issues will be numbered from 1 through 24 and dated the 1st and 15th day of each month. All of the subject categories covered by the journal will be represented in every issue.

NOTE: Advance registration form for 78th Annual Meeting of the American Association for Cancer Research available in the back of this issue.