



## CONTENTS†

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

### Perspectives in Cancer Research

- 5249 Heat Shock Proteins in Thermotolerance and Other Cellular Processes. Stephen W. Carper, John J. Duffy, and Eugene W. Gerner.

### BASIC SCIENCES

- 5256 Synergistic Growth Inhibition of Rat Hepatoma Cells Exposed *in Vitro* to *N*<sup>10</sup>-Propargyl-5,8-dideazaofolate with Methotrexate or the Lipophilic Antifolates Trimetrexate or Metoprine. John Galivan, Zenia Nimec, and Myung Rhee.
- 5261 Dose and Flow Dependence of 5-Fluorouracil Elimination by the Isolated Perfused Rat Liver. Barbour S. Warren, Frank P. LaCreta, David M. Kornhauser, and Walter M. Williams.
- \* 5266 Expression of *c-myc* Protooncogene and Other Cell Cycle-related Genes in Normal and Neoplastic Human Colonic Mucosa. Giuseppe Torelli, Donatella Venturelli, Alessandro Coló, Corrado Zanni, Licia Selleri, Luigi Moretti, Bruno Calabretta, and Umberto Torelli.
- 5270 Changes in the Glutathione Content of Rat 9L Cells Induced by Treatment with the Ornithine Decarboxylase Inhibitor  $\alpha$ -Difluoromethylornithine. Karl J. Hunter, Dennis F. Deen, and Laurence J. Marton.
- \* 5274 Hypomethylation of DNA in Pathological Conditions of the Human Prostate. Mark T. Bedford and Paul D. van Helden.
- 5277 Biodistribution of Ricin Toxin A Chain-Monoclonal Antibody 791T/36 Immunotoxin and Influence of Hepatic Blocking Agents. Vera S. Byers, M. V. Pimm, Izabella Z. A. Pawluczyk, H. M. Lee, P. J. Scannon, and R. W. Baldwin.
- \* 5284 Immunogenicity of Human Melanoma-associated Antigens Defined by Murine Monoclonal Antibodies in Allogeneic and Xenogeneic Hosts. C. V. Hamby, S-K. Liao, T. Kanamaru, and S. Ferrone.
- \* 5290 Prognostic Significance of the Expression of a *ras* Protein with a Molecular Weight of 21,000 by Human Breast Cancer. Timothy Clair, William R. Miller, and Yoon Sang Cho-Chung.
- \* 5294 Evaluation of a Modeling System for S-Phase Estimation in Breast Cancer by Flow Cytometry. Lynn G. Dressler, Larry Seamer, Marilyn A. Owens, Gary M. Clark, and William L. McGuire.
- 5303 Enhancement of Toxicity from *N*-(2-Chloroethyl)-*N'*-cyclohexyl-*N*-nitrosourea in V79 Spheroids by a Nitrofurane. Ralph E. Durand and Peggy L. Olive.
- 5310 Enhancing Effect of a Bay Region Methyl Group on Tumorigenicity in Newborn Mice and Mouse Skin of Enantiomeric Bay Region Diol Epoxides Formed Stereoselectively from Methylchrysenes in Mouse Epidermis. Stephen S. Hecht, Shantu Amin, Keith Huie, Assieh A. Melikian, and Ronald G. Harvey.
- 5316 Importance of Extended Growth Potential and Growth Factor Independence on *in Vivo* Neoplastic Potential of Primary Rat Mammary Carcinoma Cells. S. P. Ethier and K. C. Cundiff.
- 5323 Effects of Pharmacological Concentrations of Estrogens on Proliferation and Cell Cycle Kinetics of Human Breast Cancer Cell Lines *in Vitro*. Roger R. Reddel and Robert L. Sutherland.
- 5330 Quantitation of Autocrine Regulation of Tumor Growth: A General Phenomenological Model. Željko Bajzer and Stanimir Vuk-Pavlović.
- 5334 Enhancement of Folate Analogue Transport Inward in L1210 Cells during Methotrexate Therapy of Leukemic Mice: Evidence of the Nature of the Effect, Possible Host Mediation, and Pharmacokinetic Significance. F. M. Sirotnak, R. E. Poser, and J. R. Barrucco.
- 5340 Dose-related Inhibition of Colon Carcinogenesis by Dietary Piroxicam, a Nonsteroidal Antiinflammatory Drug, during Different Stages of Rat Colon Tumor Development. Bandaru S. Reddy, Hiroshi Maruyama, and Gary Kelloff.
- \* 5347 Evaluation of the Antitumor Activity of Recombinant Human  $\gamma$ -Interferon Employing Human Melanoma Xenografts in Athymic Nude Mice. Paul P. Trotta and Steadman D. Harrison, Jr.
- 5354 Contrasting Disposition and Metabolism of Topically Applied Benzo(a)pyrene, *trans*-7,8-Dihydroxy-7,8-dihydrobenzo(a)pyrene, and 7 $\beta$ ,8 $\alpha$ -Dihydroxy-9 $\alpha$ ,10 $\alpha$ -epoxy-7,8,9,10-tetrahydrobenzo(a)pyrene in Mouse Epidermis *in Vivo*. Assieh A. Melikian, Kourosh Bagheri, and Stephen S. Hecht.
- \* 5361 Potentiation of Halogenated Pyrimidine Radiosensitizers in Human Carcinoma Cells by  $\beta$ -Lapachone (3,4-Dihydro-2,2-dimethyl-2H-naphtho[1,2-*b*]pyran-5,6-dione), a Novel DNA Repair Inhibitor. David A. Boothman, Sheldon Greer, and Arthur B. Pardee.
- \* 5367 Oxygen Dependence of Binding of Misonidazole to Rodent and Human Tumors *in Vitro*. Allan J. Franko, Cameron J. Koch, Bonnie M. Garrecht, Janet Sharplin, and David Hughes.
- \* 5377 Localization of G<sub>D2</sub>-specific Monoclonal Antibody 3F8 in Human Osteosarcoma. John P. Heiner, Floro Miraldi, Steven Kallick, John Makley, John Neely, William H. Smith-Mensah, and Nai-Kong V. Cheung.
- \* 5382 Modulation of the Growth of Transformed Cells by Human Tumor Necrosis Factor- $\alpha$  and Interferon- $\gamma$ . Gail D. Lewis, Bharat B. Aggarwal, Thomas E. Eessalu, Barry J. Sugarman, and H. Michael Shepard.
- 5386 Reversal of the Antitumor Effects of Tamoxifen by Progesterone in the 7,12-Dimethylbenzanthracene-induced Rat Mammary Carcinoma Model. Simon P. Robinson and V. Craig Jordan.
- 5391 Syngeneic Monoclonal Antibodies to B16 Melanoma Viral Antigens. Irving Rappaport, Andrea L. Alterman, Susan Braverman, and Christopher W. Stackpole.
- 5397 Increase in Intracellular Na<sup>+</sup>: Transmembrane Signal for Rejoining of DNA Strand Breaks in Proliferating Lymphocytes. Kanteti V. S. Prasad, Wenda L. Greer, Alberto Severini, and J. Gordin Kaplan.
- 5401 Pharmacokinetics of 4'-Deoxy-4'-iodo-doxorubicin in Plasma and Tissues of Tumor-bearing Mice Compared with Doxorubicin. Franca Formelli, Roberto Carsana, and Carmen Pollini.

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

- 5407** **Reduced Levels of Histones H1<sup>o</sup> and H1b, and Unaltered Content of Methylated DNA in Rainbow Trout Hepatocellular Carcinoma Chromatin.** James R. Davie, Genevieve P. Delcuve, Barbara E. Nickel, Richard Moirier, and George Bailey.
- 5411** **Adjunctive Use of Ethiofos (WR-2721) with Free Radical-generating Chemotherapeutic Agents in Mice: New Caveats for Therapy.** Nina F. Tabachnik Schor.
- 5415** **Tyrosine Aminotransferase Gene Expression in a Temperature-sensitive Adult Rat Liver Cell Line.** Janice Yang Chou and George C. T. Yeoh.
- 5421** **DNA Cross-Linking and Single-Strand Breaks Induced by Teratogenic Concentrations of 4-Hydroperoxycyclophosphamide and Phosphoramidate Mustard in Postimplantation Rat Embryos.** Sally A. Little and Philip E. Mirkes.
- \*5427** **Radiolocalization of Xenografted Human Lung Cancer with Monoclonal Antibody 8 in Nude Mice.** Katsuyuki Endo, Hiroshi Kamma, and Takesaburo Ogata.
- \*5433** **Morphological Differentiation of Human Neuroblastoma Cell Lines by a New Synthetic Polyprenic Acid (E5166).** Tohru Sugimoto, Tadashi Sawada, Takafumi Matsumura, Yoshihiro Horii, John T. Kemshead, Yoshikazu Suzuki, Masaaki Okada, Osamu Tagaya, and Tamaki Hino.
- 5439** **Inhibition of Lymphoma Invasion and Liver Metastasis Formation by Pertussis Toxin.** Ed Roos and Ilja V. Van de Pavert.
- 5445** **Partial Parallelism and Partial Blockade by Bryostatin 1 of Effects of Phorbol Ester Tumor Promoters on Primary Mouse Epidermal Cells.** Takashi Sako, Stuart H. Yuspa, Cherry L. Herald, George R. Pettit, and Peter M. Blumberg.
- 5451** **Quantitative Neutron Capture Radiography for Studying the Biodistribution of Tumor-seeking Boron-containing Compounds.** Detlef Gabel, Hartmut Holstein, Börje Larsson, Lillian Gille, Gunilla Ericson, Donald Sacker, Prantika Som, and Ralph G. Fairchild.
- \*5455** **Pharmacological, Molecular, and Cytogenetic Analysis of "Atypical" Multidrug-resistant Human Leukemic Cells.** William T. Beck, Margaret C. Cirtain, Mary K. Danks, Ronald L. Felsted, Ahmad R. Safa, Judith S. Wolverson, D. Parker Suttle, and Jeffrey M. Trent.
- 5461** **Intermediate Filament Proteins in Asbestos-induced Mesotheliomas of the Rat.** Alastair M. Mackay, Russell P. Tracy, and John E. Craighead.
- 5469** ***In Situ* Hybridization Studies on Expression of Albumin and  $\alpha$ -Fetoprotein during the Early Stage of Neoplastic Transformation in Rat Liver.** Ritva P. Evarts, Peter Nagy, Elizabeth Marsden, and Snorri S. Thorgeirsson.
- \*5476** **Development and Characterization of Breast Cancer Reactive Monoclonal Antibodies Directed to the Core Protein of the Human Milk Mucin.** Joy Burchell, Sandra Gendler, Joyce Taylor-Papadimitriou, Anne Girling, Angela Lewis, Rosemary Millis, and Derek Lamport.

## CLINICAL AND EPIDEMIOLOGICAL INVESTIGATIONS

- 5483** **Breast Fluid Cholesterol and Cholesterol Epoxides: Relationship to Breast Cancer Risk Factors and Other Characteristics.** Larry D. Gruenke, Margaret R. Wrensch, Nicholas L. Petrakis, Rei Miike, Virginia L. Ernster, and John C. Craig.
- 5488** **Genetic Predisposition to Bladder Cancer: Ability to Hydroxylate Debrisoquine and Mephenytoin as Risk Factors.** Amir Kaisary, Patrick Smith, Evelyne Jaczq, C. Brendon McAllister, Grant R. Wilkinson, Wayne A. Ray, and Robert A. Branch.
- 5494** **Retrospective Analysis of the Prognostic Significance of DNA Content and Proliferative Activity in Large Bowel Carcinoma.** Bert Schutte, Michèle M. J. Reynders, Theodore Wiggers, Jan Willem Arends, Lex Volovics, Fred T. Bosman, and Geert H. Blijham.
- 5497** **Antitumor Activity of Pleural Cavity Macrophages and Its Regulation by Pleural Cavity Lymphocytes in Patients with Lung Cancer.** Akira Nagashima, Kosei Yasumoto, Hisashi Nakahashi, Sadanori Takeo, Tokujiro Yano, and Kikuo Nomoto.
- 5501** **Relationship of Carbohydrate Antigen 19-9 and Lewis Antigens in Pancreatic Cancer.** Margaret A. Tempero, Eiji Uchida, Hideaki Takasaki, David A. Burnett, Zenon Steplewski, and Parviz M. Pour.
- 5504** **Lymphokine-activated Killer Cells: Culture Conditions for the Generation of Maximal *in Vitro* Cytotoxicity in Cells from Normal Donors.** Suzanne K. Beckner, Annette E. Maluish, and Dan L. Longo.

\* \* \*

### Meeting Report

- 5509** **American Cancer Society Workshop Conference on Tumor Promotion and Antipromotion.** N. H. Colburn, E. Farber, I. B. Weinstein, L. Diamond, and T. J. Slaga.
- 5514** **Announcements**
- 5514** **Erratum**  
A. Valette *et al.*, 47: 1615-1620, 1987.
- 5515** **Author Index**

**NOTE: Application for membership in the American Association for Cancer Research available in the back of this issue.**

# Cancer Research

VOLUME 47 • NUMBER 20

CONTENTS Arranged by Subject Category

## Perspectives in Cancer Research

- 5249 Heat Shock Proteins in Thermotolerance and Other Cellular Processes. Stephen W. Carper, John J. Duffy, and Eugene W. Gerner.

## BASIC SCIENCES

### Biochemistry and Biophysics

- 5270 Changes in the Glutathione Content of Rat 9L Cells Induced by Treatment with the Ornithine Decarboxylase Inhibitor  $\alpha$ -Difluoromethylornithine. Karl J. Hunter, Dennis F. Deen, and Laurence J. Marton.
- \* 5274 Hypomethylation of DNA in Pathological Conditions of the Human Prostate. Mark T. Bedford and Paul D. van Helden.
- \* 5367 Oxygen Dependence of Binding of Misonidazole to Rodent and Human Tumors *in Vitro*. Allan J. Franko, Cameron J. Koch, Bonnie M. Garrecht, Janet Sharplin, and David Hughes.

### Carcinogenesis

- 5310 Enhancing Effect of a Bay Region Methyl Group on Tumorigenicity in Newborn Mice and Mouse Skin of Enantiomeric Bay Region Diol Epoxides Formed Stereoselectively from Methylchrysenes in Mouse Epidermis. Stephen S. Hecht, Shantu Amin, Keith Huie, Assieh A. Melikian, and Ronald G. Harvey.
- 5340 Dose-related Inhibition of Colon Carcinogenesis by Dietary Piroxicam, a Nonsteroidal Antiinflammatory Drug, during Different Stages of Rat Colon Tumor Development. Bandaru S. Reddy, Hiroshi Maruyama, and Gary Kelloff.
- 5354 Contrasting Disposition and Metabolism of Topically Applied Benzo(a)pyrene, *trans*-7,8-Dihydroxy-7,8-dihydrobenzo(a)pyrene, and 7 $\beta$ ,8 $\alpha$ -Dihydroxy-9 $\alpha$ ,10 $\alpha$ -epoxy-7,8,9,10-tetrahydrobenzo(a)pyrene in Mouse Epidermis *in Vivo*. Assieh A. Melikian, Kourosh Bagheri, and Stephen S. Hecht.
- 5421 DNA Cross-Linking and Single-Strand Breaks Induced by Teratogenic Concentrations of 4-Hydroperoxycyclophosphamide and Phosphoramidate Mustard in Postimplantation Rat Embryos. Sally A. Little and Philip E. Mirkes.
- 5445 Partial Parallelism and Partial Blockade by Bryostatin 1 of Effects of Phorbol Ester Tumor Promoters on Primary Mouse Epidermal Cells. Takashi Sako, Stuart H. Yuspa, Cherry L. Herald, George R. Pettit, and Peter M. Blumberg.
- 5469 *In Situ* Hybridization Studies on Expression of Albumin and  $\alpha$ -Fetoprotein during the Early Stage of Neoplastic Transformation in Rat Liver. Ritva P. Everts, Peter Nagy, Elizabeth Marsden, and Snorri S. Thorgeirsson.

### Endocrinology

- \* 5294 Evaluation of a Modeling System for S-Phase Estimation in Breast Cancer by Flow Cytometry. Lynn G. Dressler, Larry Seamer, Marilyn A. Owens, Gary M. Clark, and William L. McGuire.
- 5386 Reversal of the Antitumor Effects of Tamoxifen by Progesterone in the 7,12-Dimethylbenzanthracene-induced Rat Mammary Carcinoma Model. Simon P. Robinson and V. Craig Jordan.

## Immunology

- \* 5284 Immunogenicity of Human Melanoma-associated Antigens Defined by Murine Monoclonal Antibodies in Allogeneic and Xenogeneic Hosts. C. V. Hamby, S-K. Liao, T. Kanamaru, and S. Ferrone.
- \* 5377 Localization of G<sub>DP</sub>-specific Monoclonal Antibody 3F8 in Human Osteosarcoma. John P. Heiner, Floro Miraldi, Steven Kallick, John Makley, John Neely, William H. Smith-Mensah, and Nai-Kong V. Cheung.
- 5391 Syngeneic Monoclonal Antibodies to B16 Melanoma Viral Antigens. Irving Rappaport, Andrea L. Alterman, Susan Braverman, and Christopher W. Stackpole.
- \* 5427 Radiolocalization of Xenografted Human Lung Cancer with Monoclonal Antibody 8 in Nude Mice. Katsuyuki Endo, Hiroshi Kamma, and Takesaburo Ogata.

## Molecular Biology and Genetics

- 5397 Increase in Intracellular Na<sup>+</sup>: Transmembrane Signal for Rejoining of DNA Strand Breaks in Proliferating Lymphocytes. Kanteti V. S. Prasad, Wenda L. Greer, Alberto Severini, and J. Gordin Kaplan.
- 5407 Reduced Levels of Histones H1<sup>\*</sup> and H1b and Unaltered Content of Methylated DNA in Rainbow Trout Hepatocellular Carcinoma Chromatin. James R. Davie, Genevieve P. Delcuve, Barbara E. Nickel, Richard Moirier, and George Bailey.
- 5415 Tyrosine Aminotransferase Gene Expression in a Temperature-sensitive Adult Rat Liver Cell Line. Janice Yang Chou and George C. T. Yeoh.

## Preclinical Pharmacology and Experimental Therapeutics

- 5256 Synergistic Growth Inhibition of Rat Hepatoma Cells Exposed *in Vitro* to N<sup>10</sup>-Propargyl-5,8-dideazafofate with Methotrexate or the Lipophilic Antifolates Trimetrexate or Metoprine. John Galivan, Zenia Nimec, and Myung Rhee.
- 5261 Dose and Flow Dependence of 5-Fluorouracil Elimination by the Isolated Perfused Rat Liver. Barbour S. Warren, Frank P. LaCreta, David M. Kornhauser, and Walter M. Williams.
- 5277 Biodistribution of Ricin Toxin A Chain-Monoclonal Antibody 791T/36 Immunotoxin and Influence of Hepatic Blocking Agents. Vera S. Byers, M. V. Pimm, Izabella Z. A. Pawluczyk, H. M. Lee, P. J. Scannon, and R. W. Baldwin.
- 5303 Enhancement of Toxicity from N-(2-Chloroethyl)-N'-cyclohexyl-N-nitrosourea in V79 Spheroids by a Nitrofurane. Ralph E. Durand and Peggy L. Olive.
- 5323 Effects of Pharmacological Concentrations of Estrogens on Proliferation and Cell Cycle Kinetics of Human Breast Cancer Cell Lines *in Vitro*. Roger R. Reddel and Robert L. Sutherland.
- 5334 Enhancement of Folate Analogue Transport Inward in L1210 Cells during Methotrexate Therapy of Leukemic Mice: Evidence of the Nature of the Effect, Possible Host Mediation, and Pharmacokinetic Significance. F. M. Sirotnak, R. E. Poser, and J. R. Barrueco.
- \* 5347 Evaluation of the Antitumor Activity of Recombinant Human  $\gamma$ -Interferon Employing Human Melanoma Xenografts in Athymic Nude Mice. Paul P. Trotta and Steadman D. Harrison, Jr.

\* Indicates studies using human-derived material.

- \*5361 Potentiation of Halogenated Pyrimidine Radiosensitizers in Human Carcinoma Cells by  $\beta$ -Lapachone (3,4-Dihydro-2,2-dimethyl-2H-naphtho[1,2-b]pyran-5,6-dione), a Novel DNA Repair Inhibitor. David A. Boothman, Sheldon Greer, and Arthur B. Pardee.
- 5401 Pharmacokinetics of 4'-Deoxy-4'-iodo-doxorubicin in Plasma and Tissues of Tumor-bearing Mice Compared with Doxorubicin. Franca Formelli, Roberto Carsana, and Carmen Pollini.
- 5411 Adjunctive Use of Ethiofos (WR-2721) with Free Radical-generating Chemotherapeutic Agents in Mice: New Caveats for Therapy. Nina F. Tabachnik Schor.
- 5451 Quantitative Neutron Capture Radiography for Studying the Biodistribution of Tumor-seeking Boron-containing Compounds. Detlef Gabel, Hartmut Holstein, Börje Larsson, Lillian Gille, Gunilla Ericson, Donald Sacker, Prantika Som, and Ralph G. Fairchild.
- \*5455 Pharmacological, Molecular, and Cytogenetic Analysis of "Atypical" Multidrug-resistant Human Leukemic Cells. William T. Beck, Margaret C. Cirtain, Mary K. Danks, Ronald L. Felsted, Ahmad R. Safa, Judith S. Wolverson, D. Parker Suttle, and Jeffrey M. Trent.

### Tumor Biology

- \*5266 Expression of *c-myc* Protooncogene and Other Cell Cycle-related Genes in Normal and Neoplastic Human Colonic Mucosa. Giuseppe Torelli, Donatella Venturelli, Alessandro Coló, Corrado Zanni, Licia Selleri, Luigi Moretti, Bruno Calabretta, and Umberto Torelli.
- \*5290 Prognostic Significance of the Expression of a *ras* Protein with a Molecular Weight of 21,000 by Human Breast Cancer. Timothy Clair, William R. Miller, and Yoon Sang Cho-Chung.
- 5316 Importance of Extended Growth Potential and Growth Factor Independence on *in Vivo* Neoplastic Potential of Primary Rat Mammary Carcinoma Cells. S. P. Ethier and K. C. Cundiff.
- 5330 Quantitation of Autocrine Regulation of Tumor Growth: A General Phenomenological Model. Željko Bajzer and Stanimir Vuk-Pavlović.
- \*5382 Modulation of the Growth of Transformed Cells by Human Tumor Necrosis Factor- $\alpha$  and Interferon- $\gamma$ . Gail D. Lewis, Bharat B. Aggarwal, Thomas E. Eessalu, Barry J. Sugarman, and H. Michael Shepard.
- \*5433 Morphological Differentiation of Human Neuroblastoma Cell Lines by a New Synthetic Polyprenoic Acid (E5166). Tohru Sugimoto, Tadashi Sawada, Takafumi Matsumura, Yoshihiro Horii, John T. Kemshead, Yoshikazu Suzuki, Masaaki Okada, Osamu Tagaya, and Tamaki Hino.
- 5439 Inhibition of Lymphoma Invasion and Liver Metastasis Formation by Pertussis Toxin. Ed Roos and Ilja V. Van de Pavert.

- 5461 Intermediate Filament Proteins in Asbestos-induced Mesotheliomas of the Rat. Alastair M. Mackay, Russell P. Tracy, and John E. Craighead.
- \*5476 Development and Characterization of Breast Cancer Reactive Monoclonal Antibodies Directed to the Core Protein of the Human Milk Mucin. Joy Burchell, Sandra Gendler, Joyce Taylor-Papadimitriou, Anne Girling, Angela Lewis, Rosemary Millis, and Derek Lampport.

## CLINICAL AND EPIDEMIOLOGICAL INVESTIGATIONS

### Clinical

- 5497 Antitumor Activity of Pleural Cavity Macrophages and Its Regulation by Pleural Cavity Lymphocytes in Patients with Lung Cancer. Akira Nagashima, Kosei Yasumoto, Hisashi Nakahashi, Sadanori Takeo, Tokujiro Yano, and Kikuo Nomoto.
- 5501 Relationship of Carbohydrate Antigen 19-9 and Lewis Antigens in Pancreatic Cancer. Margaret A. Tempero, Eiji Uchida, Hideaki Takasaki, David A. Burnett, Zenon Steplewski, and Parviz M. Pour.
- 5504 Lymphokine-activated Killer Cells: Culture Conditions for the Generation of Maximal *in Vitro* Cytotoxicity in Cells from Normal Donors. Suzanne K. Beckner, Annette E. Maluish, and Dan L. Longo.

### Epidemiological

- 5483 Breast Fluid Cholesterol and Cholesterol Epoxides: Relationship to Breast Cancer Risk Factors and Other Characteristics. Larry D. Gruenke, Margaret R. Wrensch, Nicholas L. Petrakis, Rei Miike, Virginia L. Ernster, and John C. Craig.
- 5488 Genetic Predisposition to Bladder Cancer: Ability to Hydroxylate Debrisoquine and Mephenytoin as Risk Factors. Amir Kaisary, Patrick Smith, Evelyne Jaczq, C. Brendon McAllister, Grant R. Wilkinson, Wayne A. Ray, and Robert A. Branch.
- 5494 Retrospective Analysis of the Prognostic Significance of DNA Content and Proliferative Activity in Large Bowel Carcinoma. Bert Schutte, Michèle M. J. Reynders, Theodore Wiggers, Jan Willem Arends, Lex Volovics, Fred T. Bosman, and Geert H. Blijham.

\* \* \*

### Meeting Report

- 5509 American Cancer Society Workshop Conference on Tumor Promotion and Antipromotion. N. H. Colburn, E. Farber, I. B. Weinstein, L. Diamond, and T. J. Slaga.
- 5514 Announcements
- 5514 Erratum  
A. Valette *et al.*, 47: 1615-1620, 1987.
- 5515 Author Index

NOTE: Application for membership in the American Association for Cancer Research available in the back of this issue.

# Cancer Research

The Journal of Cancer Research (1916–1930) | The American Journal of Cancer (1931–1940)

## 47 (20)

*Cancer Res* 1987;47:5249-5514.

**Updated version** Access the most recent version of this article at:  
<http://cancerres.aacrjournals.org/content/47/20.citation>

**E-mail alerts** [Sign up to receive free email-alerts](#) related to this article or journal.

**Reprints and Subscriptions** To order reprints of this article or to subscribe to the journal, contact the AACR Publications Department at [pubs@aacr.org](mailto:pubs@aacr.org).

**Permissions** To request permission to re-use all or part of this article, contact the AACR Publications Department at [permissions@aacr.org](mailto:permissions@aacr.org).