



## CONTENTS†

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

### Review

- 3911 **Role of Thymidine in Biochemical Modulation: A Review.** Peter J. O'Dwyer, Susan A. King, Daniel F. Hoth, and Brian Leyland-Jones.

### BASIC SCIENCES

- \*3920 **Sodium Dependency of Uptake of Norepinephrine and *m*-Iodobenzylguanidine into Cultured Human Pheochromocytoma Cells: Evidence for Uptake-One.** Sandford Jaques, Jr., Michael C. Tobes, and James C. Sisson.
- \*3929 **Uptake of Gallium-67 by Human Leukemic Cells: Demonstration of Transferrin Receptor-dependent and Transferrin-independent Mechanisms.** Christopher R. Chitambar and Zorica Zivkovic.
- 3935 **Multivesicular Liposomes Containing 1- $\beta$ -D-Arabinofuranosylcytosine for Slow-Release Intrathecal Therapy.** Sinil Kim, David J. Kim, Mark A. Geyer, and Stephen B. Howell.
- \*3938 **Use of DNA Image Cytometry in Addition to Flow Cytometry for the Study of Patients with Advanced Ovarian Cancer.** Cees J. Rodenburg, Joke J. Ploem-Zaaijer, Cees J. Cornelisse, Wilma E. Mesker, Jo Hermans, Peter A. M. Heintz, Johan S. Ploem, and Gert Jan Fleuren.
- \*3942 **DNA *in Situ* Sensitivity to Denaturation: A New Parameter for Flow Cytometry of Normal Human Colonic Epithelium and Colon Carcinoma.** Jolanta E. Kunicka, Zbigniew Darzynkiewicz, and Myron R. Melamed.
- \*3948 **Synergistic Effects of Combination Therapy with Human Recombinant Interleukin-2 and Tumor Necrosis Factor in Murine Tumor Models.** Jeffrey L. Winkelhake, Susan Stampfl, and Robert J. Zimmerman.
- \*3954 **Patterns of Ligand Binding to Normal, Regenerating, Preneoplastic, and Neoplastic Rat Hepatocytes.** Leonard Harris, Veronique Preat, and Emmanuel Farber.
- \*3959 **Activation of Human Monocyte Tumoricidal Activity by C-reactive Protein.** Barbara P. Barna, Karen James, and Sharad D. Deodhar.
- \*3964 **Cytotoxic Response of the Relatively Difluoromethylornithine-resistant Human Lung Tumor Cell Line NCI H157 to the Polyamine Analogue *N*<sup>1</sup>, *N*<sup>8</sup>-Bis(ethyl)spermidine.** Robert A. Casero, Jr., Brian Go, H. William Theiss, Jeffrey Smith, Stephen B. Baylin, and Gordon D. Luk.
- 3968 **Carcinogenesis by Nitrosodialkylamines and Azoxyalkanes Given by Gavage to Rats and Hamsters.** William Lijinsky, Robert M. Kovatch, and Charles W. Riggs.
- \*3973 **Proliferation-dependent Topoisomerase II Content as a Determinant of Antineoplastic Drug Action in Human, Mouse, and Chinese Hamster Ovary Cells.** Daniel M. Sullivan, Michael D. Latham, and Warren E. Ross.
- 3980 **Origin of the Increased Activity of  $\beta$ -Glucuronidase in the Soluble Fraction of Rat Mammary Tumors during Ovariectomy-induced Regression.** Edvard P. Beem, Michel J. X. Hillebrand, Catherine Benckhuijsen, and Bernard Overdijk.
- \*3988 **DNA Cross-Linking Responses of Human Malignant Glioma Cell Strains to Chloroethylnitrosoureas, Cisplatin, and Diaziquone.** Eric Sariban, Kurt W. Kohn, Chana Zlotogorski, Guy Laurent, Mauricio D'Incalci, Rufus Day III, Barry H. Smith, Paul L. Kornblith, and Leonard C. Erickson.
- \*3995 **Loss of Heterozygosity at Autosomal and X-linked Loci during Tumor Progression in a Patient with Melanoma.** Nicholas C. Dracopoli, Becky Alhadeff, Alan N. Houghton, and Lloyd J. Old.
- \*4001 **Chemical and Biological Characterization of 4'-Iodo-4'-deoxydoxorubicin.** Brunella Barbieri, Fernando C. Giuliani, Teresa Bordoni, Anna Maria Casazza, Cristina Geroni, Ornella Bellini, Antonio Suarato, Bruno Gioia, Sergio Penco, and Federico Arcamone.
- 4007 **Prostaglandin H Synthase-catalyzed Metabolism and DNA Binding of 2-Naphthylamine.** Jeff A. Boyd and Thomas E. Eling.
- 4015 **Biotransformation of the Antiestrogen Clomiphene to Chemically Reactive Metabolites in the Immature Female Rat.** Peter C. Ruenitz, Richard F. Arrendale, Garry D. George, Carolyn B. Thompson, Corwin M. Mokler, and Nitin T. Nanavati.
- 4020 **Antitumor Actions of Keoxifene and Tamoxifen in the *N*-Nitrosomethylurea-induced Rat Mammary Carcinoma Model.** Marco M. Gottardis and V. Craig Jordan.
- 4025 **Histamine and Growth: Interaction of Antiestrogen Binding Site Ligands with a Novel Histamine Site That May Be Associated with Calcium Channels.** Lorne J. Brandes, R. Patricia Bogdanovic, Max D. Cawker, and Frank S. LaBella.
- 4032 **Stereochemical Specificity in the Metabolic Activation of Benzo(c)phenanthrene to Metabolites That Covalently Bind to DNA in Rodent Embryo Cell Cultures.** Donna Pruess-Schwartz, William M. Baird, Haruhiko Yagi, Donald M. Jerina, Margaret A. Pigott, and Anthony Dipple.
- 4038 **Temperature Dependence Studies of Adriamycin Uptake and Cytotoxicity.** Polly Lane, Paul Vichi, David L. Bain, and Thomas R. Tritton.
- \*4043 **Increase of Urokinase-type Plasminogen Activator Gene Expression in Human Lung and Breast Carcinomas.** André-Pascal Sappino, Nathalie Busso, Dominique Belin, and Jean-Dominique Vassalli.
- 4047 **Distinct Effects of Adenine and Guanine Starvation on DNA Synthesis Associated with Different Pool Sizes of Nucleotide Precursors.** Dah-Shuhn Duan and Wolfgang Sadée.
- 4052 **Metabolism of Mutagens and Carcinogens in Woodchuck Liver and Its Relationship with Hepatitis Virus Infection.** Silvio De Flora, Anna Camoirano, Marco Romano, Marina Astengo, Carmelo F. Cesarone, and Irving Millman.

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

- 4059 Production of Granulocyte-stimulating and Bone Cell-modulating Activities from a Neutrophilia Hypercalcemia-inducing Murine Mammary Cancer Cell Line. Minako Y. Lee, Chung C. Liu, Joan L. Lottsfeldt, Susan A. Judkins, and Guy A. Howard.
- \*4066 Reduction in Protein Tyrosine Phosphorylation during Differentiation of Human Leukemia Cell Line K-562. Jeanne M. Richardson, Alex O. Morla, and Jean Y. J. Wang.
- \*4071 Radiosensitizer Conjugation to the Carcinoma 19-9 Monoclonal Antibody. K. P. Borlinghaus, D. A. Fitzpatrick, N. D. Heindel, J. A. Mattis, B. A. Mease, K. J. Schray, D. J. Shealy, H. L. Walton, Jr., and D. V. Woo.
- \*4076 Cellular Pharmacology of 3'-(3-Cyano-4-morpholinyl)-3'-deamino-adriamycin and Structural Analogues in Human Colon Carcinoma HT-29 Cells *in Vitro*. James B. Johnston, Linda Pugh, and Asher Begleiter.
- \*4081 Effect of Recombinant Monokines, Lymphokines, and Other Agents on Clonal Proliferation of Human Lung Cancer Cell Lines. Mirsini Munker, Reinhold Munker, Romaine E. Saxton, and H. Phillip Koefler.
- 4086 Mitogenic and Antimitogenic Transforming Growth Factors Secreted by Adenovirus 2- and Simian Virus 40-transformed Hamster Cells: Possible Roles in Promoting Tumorigenesis. Kimihiro Akagi, Koichiro Murai, Hedi Haddada, Arthur S. Levine, and Cephas T. Patch.
- 4093 Characterization of a Slow-growing, Transplantable Rat Mammary Tumor (MCR-83): A Model for Endocrine-related Cell Kinetic Studies. Jan Hein van Dierendonck, Cornelis J. Cornelisse, Peter Willem G. van der Linden, Luke M. van Putten, and Cornelis J. H. van de Velde.
- 4099 Effects of Difluoromethylornithine and Dicyclohexylammonium Sulfate on the Transformed State of AKR-MCA Cells. Douglas Boyd, Stan Bialoski, and Michael G. Brattain.
- \*4105 Preparation of Drug-Low Density Lipoprotein Complexes for Delivery of Antitumoral Drugs via the Low Density Lipoprotein Pathway. Bo Lundberg.
- 4109 Modulation of Growth and of Morphological Characteristics in Glioma Cells by Nerve Growth Factor and Glia Maturation Factor. Yasuko Marushige, Narayan R. Raju, Keiji Marushige, and Adalbert Koestner.
- 4116 Growth in Culture and Tumorigenicity after Transfection with the *ras* Oncogene of Liver Epithelial Cells from Carcinogen-treated Rats. Lundy Braun, Michele Goyette, Paul Yaswen, Nancy L. Thompson, and Nelson Fausto.
- \*4125 Oncogene-mediated Multistep Transformation of C3H10T $\frac{1}{2}$  Cells. Elizabeth J. Taparowsky, Mark L. Heaney, and J. Thomas Parsons.
- \*4130 Thrombospondin, a Potentiator of Tumor Cell Metastasis. George P. Tuszyński, Tatiana B. Gasic, Vicki L. Rothman, Karen A. Knudsen, and Gabriel J. Gasic.
- \*4134 Sex Hormone Response of a Newly Established Squamous Cell Line Derived from Clinical Esophageal Carcinoma. Hideo Matsuoka, Keizo Sugimachi, Hiroaki Ueo, Hiroyuki Kuwano, Shuji Nakano, and Masaaki Nakayama.
- 4141 Macrophage Content of Spontaneous Metastases at Different Stages of Growth. Peter J. Bugelski, S. P. Corwin, S. M. North, R. L. Kirsh, G. L. Nicolson, and G. Poste.
- \*4146 Cloning of Human Neuroblastoma Cells in Methylcellulose Culture. Tadaatsu Ito, Yorikazu Ishikawa, Shuko Okano, Takuya Hattori, Ryochi Fujii, Takashi Shinozawa, and Atushi Shibuya.
- 4150 Uptake and Specific Binding of 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin in the Olfactory Mucosa of Mice and Rats. Mikael Gillner, Eva B. Brittebo, Ingvar Brandt, Peter Söderkvist, Lars-Erik Appelgren, and Jan-Åke Gustafsson.
- \*4160 Expression of the Gene Encoding a Prolactin-inducible Protein by Human Breast Cancers *in Vivo*: Correlation with Steroid Receptor Status. Leigh C. Murphy, Matthew Lee-Wing, Gerald J. Goldenberg, and Robert P. C. Shiu.
- 4165 Long-Term Alterations in Histology and Steroid Receptor Levels of the Genital Tract and Mammary Gland following Neonatal Exposure of Female BALB/cCrgl Mice to Various Doses of Diethylstilbestrol. Howard A. Bern, Marc Edery, Karen T. Mills, Arthur F. Kohrman, Takao Mori, and Lisa Larson.
- \*4173 High Correlation between Molecular Alterations of the *c-myc* Oncogene and Carcinoma of the Uterine Cervix. Rodolfo Ocadiz, Rene Saucedo, Miguel Cruz, Ana M. Graef, and Patricio Gariglio.
- 4178 Expression of Major Histocompatibility Complex Class I Antigens in Normal and Transformed Rat Thyroid Epithelial Cell Lines. Silvia Fontana, Luigi Del Vecchio, Luigi Racioppi, Ennio Carbone, Antonio Pinto, Giulia Colletta, and Serafino Zappacosta.
- \*4184 Protective Influence of Lactoferrin on Mice Infected with the Polycythemia-inducing Strain of Friend Virus Complex. Li Lu, Giao Hangoc, Allen Oliff, Li T. Chen, Rong-Nian Shen, and Hal E. Broxmeyer.
- \*4189 Complete or Partial Homozygosity of Chromosome 13 in Primary Retinoblastoma. William F. Benedict, Eri S. Srivatsan, Corey Mark, Ashutosh Banerjee, Robert S. Sparkes, and A. Linn Murphree.
- \*4192 Amplification and Enhanced Expression of the *c-Ki-ras2* Protooncogene in Human Embryonal Carcinomas. Lai-che Wang, William Vass, Changlie Gao, and Kenneth S. S. Chang.

## CLINICAL AND EPIDEMIOLOGICAL INVESTIGATIONS

- 4199 Fetal Hemoglobin Gene Activation in a Phase II Study of 5,6-Dihydro-5-azacytidine for Bronchogenic Carcinoma. Brian I. Carr, Samuel Rahbar, James H. Doroshow, Douglas Blayney, David Goldberg, Lucille Leong, and Yayesh Asmeron.
- 4202 Recombinant Interleukin 2 Toxicity, Pharmacokinetics, and Immunomodulatory Effects in a Phase I Trial. John A. Thompson, Douglas J. Lee, W. Welby Cox, Catherine G. Lindgren, Carolyn Collins, Kathryn A. Neraas, Robert A. Dennin, and Alexander Fefer.
- 4208 Severe Hypovitaminosis C Occurring as the Result of Adoptive Immunotherapy with High-Dose Interleukin 2 and Lymphokine-activated Killer Cells. Stuart L. Marcus, Janice P. Dutcher, Elisabeth Paietta, Niculae Ciobanu, Janice Strauman, Peter H. Wiernik, Seymour H. Hutner, Oscar Frank, and Herman Baker.
- 4213 Phase I Trial of Spiromustine (NSC 172112) and Evaluation of Toxicity and Schedule in a Murine Model. Richard Pazdur, Bruce G. Redman, Thomas Corbett, Mary Phillips, and Laurence H. Baker.
- 4218 Complementation of Intracavitary and Intravenous Administration of a Monoclonal Antibody (B72.3) in Patients with Carcinoma. David Colcher, Jose Esteban, Jorge A. Carrasquillo, Paul Sugarbaker, James C. Reynolds, Gail Bryant, Steven M. Larson, and Jeffrey Schlom.
- 4225 Pediatric Oncology Group Study of *in Vitro* Clonal Growth Patterns of Leukemic Cells in Childhood Acute Nonlymphocytic Leukemia as a Predictor of Induction Response. Harry W. Findley, Jr., C. P. Steuber, J. P. Krischer, and A. H. Ragab.
- 4229 Normal Cytotoxic Response of Skin Fibroblasts from Patients with Li-Fraumeni Familial Cancer Syndrome to DNA-damaging Agents *in Vitro*. J. B. Little, J. Nove, W. K. Dahlberg, P. Troilo, W. W. Nichols, and L. C. Strong.
- 4235 Announcements
- 4236 Author Index

# Cancer Research

VOLUME 47 • NUMBER 15

## CONTENTS Arranged by Subject Category

### Review

- 3911 **Role of Thymidine in Biochemical Modulation: A Review.** Peter J. O'Dwyer, Susan A. King, Daniel F. Hoth, and Brian Leyland-Jones.

### BASIC SCIENCES

#### *Biochemistry and Biophysics*

- \*3920 **Sodium Dependency of Uptake of Norepinephrine and *m*-Iodobenzylguanidine into Cultured Human Pheochromocytoma Cells: Evidence for Uptake-One.** Sandford Jaques, Jr., Michael C. Tobes, and James C. Sisson.
- 4015 **Biotransformation of the Antiestrogen Clomiphene to Chemically Reactive Metabolites in the Immature Female Rat.** Peter C. Ruenitz, Richard F. Arrendale, Garry D. George, Carolyn B. Thompson, Corwin M. Mokler, and Nitin T. Nanavati.
- 4047 **Distinct Effects of Adenine and Guanine Starvation on DNA Synthesis Associated with Different Pool Sizes of Nucleotide Precursors.** Dah-Shuhn Duan and Wolfgang Sadée.

#### *Carcinogenesis*

- \*3954 **Patterns of Ligand Binding to Normal, Regenerating, Preneoplastic, and Neoplastic Rat Hepatocytes.** Leonard Harris, Veronique Preat, and Emmanuel Farber.
- 3968 **Carcinogenesis by Nitrosodialkylamines and Azoxyalkanes Given by Gavage to Rats and Hamsters.** William Lijinsky, Robert M. Kovatch, and Charles W. Riggs.
- 4007 **Prostaglandin H Synthase-catalyzed Metabolism and DNA Binding of 2-Naphthylamine.** Jeff A. Boyd and Thomas E. Eling.
- 4032 **Stereochemical Specificity in the Metabolic Activation of Benzo(c)phenanthrene to Metabolites That Covalently Bind to DNA in Rodent Embryo Cell Cultures.** Donna Pruess-Schwartz, William M. Baird, Haruhiko Yagi, Donald M. Jerina, Margaret A. Pigott, and Anthony Dipple.
- 4052 **Metabolism of Mutagens and Carcinogens in Woodchuck Liver and Its Relationship with Hepatitis Virus Infection.** Silvio De Flora, Anna Camoirano, Marco Romano, Marina Astengo, Carmelo F. Cesarone, and Irving Millman.
- 4109 **Modulation of Growth and of Morphological Characteristics in Glioma Cells by Nerve Growth Factor and Glia Maturation Factor.** Yasuko Marushige, Narayan R. Raju, Keiji Marushige, and Adalbert Koestner.
- 4116 **Growth in Culture and Tumorigenicity after Transfection with the *ras* Oncogene of Liver Epithelial Cells from Carcinogen-treated Rats.** Lundy Braun, Michele Goyette, Paul Yaswen, Nancy L. Thompson, and Nelson Fausto.
- 4150 **Uptake and Specific Binding of 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin in the Olfactory Mucosa of Mice and Rats.** Mikael Gillner, Eva B. Brittebo, Ingvar Brandt, Peter Söderkvist, Lars-Erik Appelgren, and Jan-Åke Gustafsson.

#### *Endocrinology*

- 4020 **Antitumor Actions of Keoxifene and Tamoxifen in the *N*-Nitrosomethylurea-induced Rat Mammary Carcinoma Model.** Marco M. Gottardis and V. Craig Jordan.

- \*4134 **Sex Hormone Response of a Newly Established Squamous Cell Line Derived from Clinical Esophageal Carcinoma.** Hideo Matsuoka, Keizo Sugimachi, Hiroaki Ueo, Hiroyuki Kuwano, Shuji Nakano, and Masaaki Nakayama.

- \*4160 **Expression of the Gene Encoding a Prolactin-inducible Protein by Human Breast Cancers *in Vivo*: Correlation with Steroid Receptor Status.** Leigh C. Murphy, Matthew Lee-Wing, Gerald J. Goldenberg, and Robert P. C. Shiu.

- 4165 **Long-Term Alterations in Histology and Steroid Receptor Levels of the Genital Tract and Mammary Gland following Neonatal Exposure of Female BALB/cCrgl Mice to Various Doses of Diethylstilbestrol.** Howard A. Bern, Marc Edery, Karen T. Mills, Arthur F. Kohrman, Takao Mori, and Lisa Larson.

#### *Immunology*

- \*3959 **Activation of Human Monocyte Tumoricidal Activity by C-reactive Protein.** Barbara P. Barna, Karen James, and Sharad D. Deodhar.

- \*4071 **Radiosensitizer Conjugation to the Carcinoma 19-9 Monoclonal Antibody.** K. P. Borlinghaus, D. A. Fitzpatrick, N. D. Heindel, J. A. Mattis, B. A. Mease, K. J. Schray, D. J. Shealy, H. L. Walton, Jr., and D. V. Woo.

- 4141 **Macrophage Content of Spontaneous Metastases at Different Stages of Growth.** Peter J. Bugelski, S. P. Corwin, S. M. North, R. L. Kirsh, G. L. Nicolson, and G. Poste.

- 4178 **Expression of Major Histocompatibility Complex Class I Antigens in Normal and Transformed Rat Thyroid Epithelial Cell Lines.** Silvia Fontana, Luigi Del Vecchio, Luigi Racioppi, Ennio Carbone, Antonio Pinto, Giulia Colletta, and Serafino Zappacosta.

#### *Molecular Biology and Genetics*

- \*3938 **Use of DNA Image Cytometry in Addition to Flow Cytometry for the Study of Patients with Advanced Ovarian Cancer.** Cees J. Rodenburg, Joke J. Ploem-Zaaijer, Cees J. Cornelisse, Wilma E. Mesker, Jo Hermans, Peter A. M. Heintz, Johan S. Ploem, and Gert Jan Fleuren.

- \*3995 **Loss of Heterozygosity at Autosomal and X-linked Loci during Tumor Progression in a Patient with Melanoma.** Nicholas C. Dracopoli, Becky Alhadef, Alan N. Houghton, and Lloyd J. Old.

- \*4066 **Reduction in Protein Tyrosine Phosphorylation during Differentiation of Human Leukemia Cell Line K-562.** Jeanne M. Richardson, Alex O. Morla, and Jean Y. J. Wang.

- \*4125 **Oncogene-mediated Multistep Transformation of C3H10T $\frac{1}{2}$  Cells.** Elizabeth J. Taparowsky, Mark L. Heaney, and J. Thomas Parsons.

- \*4173 **High Correlation between Molecular Alterations of the *c-myc* Oncogene and Carcinoma of the Uterine Cervix.** Rodolfo Ocadiz, Rene Saucedo, Miguel Cruz, Ana M. Graef, and Patricio Gariglio.

- \*4189 **Complete or Partial Homozygosity of Chromosome 13 in Primary Retinoblastoma.** William F. Benedict, Eri S. Srivatsan, Corey Mark, Ashutosh Banerjee, Robert S. Sparkes, and A. Linn Murphree.

\* Indicates studies using human-derived material.



- \*4192 **Amplification and Enhanced Expression of the c-Ki-ras2 Protooncogene in Human Embryonal Carcinomas.** Lai-che Wang, William Vass, Changlie Gao, and Kenneth S. S. Chang.

### *Preclinical Pharmacology and Experimental Therapeutics*

- 3935 **Multivesicular Liposomes Containing 1- $\beta$ -D-Arabinofuranosylcytosine for Slow-Release Intrathecal Therapy.** Sinil Kim, David J. Kim, Mark A. Geyer, and Stephen B. Howell.
- \*3948 **Synergistic Effects of Combination Therapy with Human Recombinant Interleukin-2 and Tumor Necrosis Factor in Murine Tumor Models.** Jeffrey L. Winkelhake, Susan Stampfl, and Robert J. Zimmerman.
- 3964 **Cytotoxic Response of the Relatively Difluoromethylornithine-resistant Human Lung Tumor Cell Line NCI H157 to the Polyamine Analogue  $N^1, N^8$ -Bis(ethyl)spermidine.** Robert A. Casero, Jr., Brian Go, H. William Theiss, Jeffrey Smith, Stephen B. Baylin, and Gordon D. Luk.
- \*3973 **Proliferation-dependent Topoisomerase II Content as a Determinant of Antineoplastic Drug Action in Human, Mouse, and Chinese Hamster Ovary Cells.** Daniel M. Sullivan, Michael D. Latham, and Warren E. Ross.
- \*3988 **DNA Cross-Linking Responses of Human Malignant Glioma Cell Strains to Chloroethylnitrosoureas, Cisplatin, and Diaziquone.** Eric Sariban, Kurt W. Kohn, Chana Zlotogorski, Guy Laurent, Mauricio D'Incalci, Rufus Day III, Barry H. Smith, Paul L. Kornblith, and Leonard C. Erickson.
- \*4001 **Chemical and Biological Characterization of 4'-Iodo-4'-deoxydoxorubicin.** Brunella Barbieri, Fernando C. Giuliani, Teresa Bordoni, Anna Maria Casazza, Cristina Geroni, Ornella Bellini, Antonio Suarato, Bruno Gioia, Sergio Penco, and Federico Arcamone.
- 4025 **Histamine and Growth: Interaction of Antiestrogen Binding Site Ligands with a Novel Histamine Site That May Be Associated with Calcium Channels.** Lorne J. Brandes, R. Patricia Bogdanovic, Max D. Cawker, and Frank S. LaBella.
- 4038 **Temperature Dependence Studies of Adriamycin Uptake and Cytotoxicity.** Polly Lane, Paul Vichi, David L. Bain, and Thomas R. Tritton.
- \*4076 **Cellular Pharmacology of 3'-(3-Cyano-4-morpholinyl)-3'-deaminoadriamycin and Structural Analogues in Human Colon Carcinoma HT-29 Cells *in Vitro*.** James B. Johnston, Linda Pugh, and Asher Begleiter.
- 4093 **Characterization of a Slow-growing, Transplantable Rat Mammary Tumor (MCR-83): A Model for Endocrine-related Cell Kinetic Studies.** Jan Hein van Dierendonck, Cornelis J. Cornelisse, Peter Willem G. van der Linden, Luke M. van Putten, and Cornelis J. H. van de Velde.
- \*4105 **Preparation of Drug-Low Density Lipoprotein Complexes for Delivery of Antitumoral Drugs via the Low Density Lipoprotein Pathway.** Bo Lundberg.

### *Tumor Biology*

- \*3929 **Uptake of Gallium-67 by Human Leukemic Cells: Demonstration of Transferrin Receptor-dependent and Transferrin-independent Mechanisms.** Christopher R. Chitambar and Zorica Zivkovic.
- \*3942 **DNA *in Situ* Sensitivity to Denaturation: A New Parameter for Flow Cytometry of Normal Human Colonic Epithelium and Colon Carcinoma.** Jolanta E. Kunicka, Zbigniew Darzynkiewicz, and Myron R. Melamed.

- 3980 **Origin of the Increased Activity of  $\beta$ -Glucuronidase in the Soluble Fraction of Rat Mammary Tumors during Ovariectomy-induced Regression.** Edvard P. Beem, Michel J. X. Hillebrand, Catherine Benckhuijsen, and Bernard Overdijk.

- \*4043 **Increase of Urokinase-type Plasminogen Activator Gene Expression in Human Lung and Breast Carcinomas.** André-Pascal Sappino, Nathalie Busso, Dominique Belin, and Jean-Dominique Vassalli.
- 4059 **Production of Granulocyte-stimulating and Bone Cell-modulating Activities from a Neutrophilia Hypercalcemia-inducing Murine Mammary Cancer Cell Line.** Minako Y. Lee, Chung C. Liu, Joan L. Lottsfeldt, Susan A. Judkins, and Guy A. Howard.
- \*4081 **Effect of Recombinant Monokines, Lymphokines, and Other Agents on Clonal Proliferation of Human Lung Cancer Cell Lines.** Mirsini Munker, Reinhold Munker, Romaine E. Saxton, and H. Phillip Koefler.
- 4086 **Mitogenic and Antimitogenic Transforming Growth Factors Secreted by Adenovirus 2- and Simian Virus 40-transformed Hamster Cells: Possible Roles in Promoting Tumorigenesis.** Kimihiro Akagi, Koichiro Murai, Hedi Haddada, Arthur S. Levine, and Cephas T. Patch.
- 4099 **Effects of Difluoromethylornithine and Dicyclohexylammonium Sulfate on the Transformed State of AKR-MCA Cells.** Douglas Boyd, Stan Bialoski, and Michael G. Brattain.
- \*4130 **Thrombospondin, a Potentiator of Tumor Cell Metastasis.** George P. Tuszyński, Tatiana B. Gasic, Vicki L. Rothman, Karen A. Knudsen, and Gabriel J. Gasic.
- \*4146 **Cloning of Human Neuroblastoma Cells in Methylcellulose Culture.** Tadaatsu Ito, Yorikazu Ishikawa, Shuko Okano, Takuya Hattori, Ryochi Fujii, Takashi Shinozawa, and Atushi Shibuya.
- \*4184 **Protective Influence of Lactoferrin on Mice Infected with the Polycythemia-inducing Strain of Friend Virus Complex.** Li Lu, Giao Hangoc, Allen Oliff, Li T. Chen, Rong-Nian Shen, and Hal E. Broxmeyer.

### **CLINICAL AND EPIDEMIOLOGICAL INVESTIGATIONS**

- 4199 **Fetal Hemoglobin Gene Activation in a Phase II Study of 5,6-Dihydro-5-azacytidine for Bronchogenic Carcinoma.** Brian I. Carr, Samuel Rahbar, James H. Doroshow, Douglas Blayney, David Goldberg, Lucille Leong, and Yayesh Asmeron.
- 4202 **Recombinant Interleukin 2 Toxicity, Pharmacokinetics, and Immunomodulatory Effects in a Phase I Trial.** John A. Thompson, Douglas J. Lee, W. Welby Cox, Catherine G. Lindgren, Carolyn Collins, Kathryn A. Neraas, Robert A. Dennin, and Alexander Fefer.
- 4208 **Severe Hypovitaminosis C Occurring as the Result of Adoptive Immunotherapy with High-Dose Interleukin 2 and Lymphokine-activated Killer Cells.** Stuart L. Marcus, Janice P. Dutcher, Elisabeth Paietta, Niculae Ciobanu, Janice Strauman, Peter H. Wiernik, Seymour H. Hutner, Oscar Frank, and Herman Baker.
- 4213 **Phase I Trial of Spiromustine (NSC 172112) and Evaluation of Toxicity and Schedule in a Murine Model.** Richard Pazdur, Bruce G. Redman, Thomas Corbett, Mary Phillips, and Laurence H. Baker.

*Continued*

- 4218** **Complementation of Intracavitary and Intravenous Administration of a Monoclonal Antibody (B72.3) in Patients with Carcinoma.** David Colcher, Jose Esteban, Jorge A. Carrasquillo, Paul Sugarbaker, James C. Reynolds, Gail Bryant, Steven M. Larson, and Jeffrey Schlom
- 4225** **Pediatric Oncology Group Study of *in Vitro* Clonal Growth Patterns of Leukemic Cells in Childhood Acute Nonlymphocytic Leukemia as a Predictor of Induction Response.** Harry W. Findley, Jr., C. P. Steuber, J. P. Krischer, and A. H. Ragab.
- 4229** **Normal Cytotoxic Response of Skin Fibroblasts from Patients with Li-Fraumeni Familial Cancer Syndrome to DNA-damaging Agents *in Vitro*.** J. B. Little, J. Nove, W. K. Dahlberg, P. Troilo, W. W. Nichols, and L. C. Strong.
- 4235** **Announcements**
- 4236** **Author Index**

# Cancer Research

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

## 47 (15)

*Cancer Res* 1987;47:3911-4235.

**Updated version** Access the most recent version of this article at:  
<http://cancerres.aacrjournals.org/content/47/15.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, use this link <http://cancerres.aacrjournals.org/content/47/15.citation>. Click on "Request Permissions" which will take you to the Copyright Clearance Center's (CCC) Rightslink site.