



CONTENTS§

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

- *5781 Phase I and Pharmacokinetic Study of Hepsulfam (NSC 329680). Carolyn B. Hendricks, Louise B. Grochow, Eric K. Rowinsky, Arlene A. Forastiere, William P. McGuire, David S. Ettinger, Susan Sartorius, Barbara Lubejko, and Ross C. Donehower.
- *5786 Development and Field-Test Validation of an Assay for DNA Repair in Circulating Human Lymphocytes. William F. Athas, Mohammad A. Hedayati, Genevieve M. Matanoski, Evan R. Farmer, and Lawrence Grossman.
- *5794 Accumulation of Genetic Alterations and Progression of Primary Breast Cancer. Takaaki Sato, Futoshi Akiyama, Goi Sakamoto, Fujio Kasumi, and Yusuke Nakamura.
- *5800 p53 Gene Mutations in Gastric Cancer Metastases and in Gastric Cancer Cell Lines Derived from Metastases. Yukishige Yamada, Teruhiko Yoshida, Kenshi Hayashi, Takao Sekiya, Jun Yokota, Setsuo Hirohashi, Katsunori Nakatani, Hiroshige Nakano, Takashi Sugimura, and Masaaki Terada.
- 5806 *In Vivo* Measurements of Intratumoral Metabolism, Modulation, and Pharmacokinetics of 5-Fluorouracil, Using ¹⁹F Nuclear Magnetic Resonance Spectroscopy. Ahmed El-Tahtawy and Walter Wolf.
- 5813 Synergistic Cell Killing by Ionizing Radiation and Topoisomerase I Inhibitor Topotecan (SK&F 104864). Michael R. Mattern, Glenn A. Hofmann, Francis L. McCabe, and Randall K. Johnson.
- *5817 Common Regions of Deletion on Chromosomes 5q, 6q, and 10q in Renal Cell Carcinoma. Ryoji Morita, Susumu Saito, Jiro Ishikawa, Osamu Ogawa, Osamu Yoshida, Kazuhiro Yamakawa, and Yusuke Nakamura.
- *5821 Inhibition of Cell Proliferation, Protein Kinase C, and Phorbol Ester-induced *fos* Expression by the Dihydropyridine Derivative B859-35. Florian Überall, Karl Maly, Alexander Egle, Wolfgang Doppler, Johann Hofmann, and Hans H. Grunicke.
- *5826 The Breast Tumor-associated Epitope Defined by Monoclonal Antibody 3E1.2 Is an O-linked Mucin Carbohydrate Containing N-Glycolylneuraminic Acid. Peter L. Devine, Bronwyn A. Clark, Geoffrey W. Birrell, Guy T. Layton, Bruce G. Ward, Paul F. Alewood, and Ian F. C. McKenzie.
- *5837 Nickel(II)- and Cobalt(II)-dependent Damage by Hydrogen Peroxide to the DNA Bases in Isolated Human Chromatin. Zeena Nackerdien, Kazimierz S. Kasprzak, Govind Rao, Barry Halliwell, and Miral Dizdaroglu.
- 5843 Nitrosamine-induced Cancer: Selective Repair and Conformational Differences between O⁶-Methylguanine Residues in Different Positions in and around Codon 12 of Rat H-*ras*. Panagiotis Georgiadis, Clive A. Smith, and Peter F. Swann.
- 5851 Pyrrolidino-4-iodotamoxifen and 4-iodotamoxifen, New Analogues of the Antiestrogen Tamoxifen for the Treatment of Breast Cancer. S. K. Chander, R. McCague, Y. Luqmani, C. Newton, M. Dowsett, M. Jarman, and R. C. Coombes.
- *5859 Insulin-like Growth Factor I Rapidly Induces Tyrosine Phosphorylation of a M_r 150,000 and a M_r 160,000 Protein in Highly Metastatic Mouse Colon Carcinoma 26 NL-17 Cells. Takao Yamori, Yumiko Iizuka, Yasuko Takayama, Shigeki Nishiya, Shintaro Iwashita, Akiko Yamazaki, Toshiro Takatori, and Takashi Tsuruo.
- *5866 Regulation of Kinesin Expression and Type IV Collagenase Secretion in Invasive Human Prostate PC-3 Tumor Sublines. Mark E. Stearns and Min Wang.
- *5876 Antitumor Activity of Fab' and IgG-anti-CD22 Immunotoxins in Disseminated Human B Lymphoma Grown in Mice with Severe Combined Immunodeficiency Disease: Effect on Tumor Cells in Extranodal Sites. Maria-Ana Ghetie, James Richardson, Thomas Tucker, Diane Jones, Jonathan W. Uhr, and Ellen S. Vitetta.
- *5881 α -Interferon Down-Regulates Epidermal Growth Factor Receptors on Renal Carcinoma Cells: Relation to Cellular Responsiveness to the Antiproliferative Action of α -Interferon. Barbara L. Eisenkraft, David M. Nanus, Anthony P. Albino, and Lawrence M. Pfeffer.
- *5888 Glycosylation at the Fab Portion of Myeloma Immunoglobulin G and Increased Fucosylated Biantennary Sugar Chains: Structural Analysis by High-Performance Liquid Chromatography and Antibody-Lectin Enzyme Immunoassay Using *Lens culinaris* Agglutinin. Noriaki Kinoshita, Masao Ohno, Tetsuo Nishiura, Shigeru Fujii, Atsushi Nishikawa, Yukari Kawakami, Naofumi Uozumi, and Naoyuki Taniguchi.
- 5893 Effect of Psoralen plus Ultraviolet A Radiation on *in Vivo* Growth of Melanoma Cells. François Aubin, Cherrie K. Donawho, and Margaret L. Kripke.
- 5898 Effects of Transforming Growth Factor β on the Anchorage-independent Growth of Murine Epithelial JB6 Cells. Phillip J. Wilder and Angie Rizzino.
- *5903 Expression of the c-Ha-*ras* Oncogene in Mouse NIH 3T3 Cells Induces Resistance to Cisplatin. Seiji Isonishi, Doreen K. Hom, Franz B. Thiebaut, Stephen C. Mann, Paul A. Andrews, Alakananda Basu, John S. Lazo, Alan Eastman, and Stephen B. Howell.
- 5910 Combination Therapy: Lonidamine, Hyperthermia, and Chemotherapy against the RIF-1 Tumor *in Vivo*. Shoucheng Ning and George M. Hahn.
- 5915 P-Glycoprotein Expression and DNA Topoisomerase I and II Activity in Benign Tumors of the Ovary and in Malignant Tumors of the Ovary, before and after Platinum/Cyclophosphamide Chemotherapy. Ate G. J. van der Zee, Harry Hollema, Steven de Jong, Henk Boonstra, Annette Gouw, Pax H. B. Willemsse, Jan G. Zijlstra, and Elisabeth G. E. de Vries.
- 5921 Biodistribution and Dosimetry following Infusion of Antibodies Labeled with Large Amounts of ¹³¹I. Christopher C. Badger, Jeffrey Davis, Cynthia Nourigat, Zhao Mai Wu, T. Edmond Hui, Darrell R. Fisher, Howard Shulman, Frederick R. Appelbaum, Janet F. Eary, Kenneth A. Krohn, Dana C. Matthews, and Irwin D. Bernstein.

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

- 5929** Development of Resistance to the Growth Inhibitory Effects of Transforming Growth Factor β_1 during the Spontaneous Transformation of Rat Liver Epithelial Cells. Anthony C. Huggett, Patricia A. Ellis, Caroline P. Ford, Lori L. Hampton, Donata Rimoldi, and Snorri S. Thorgeirsson.
- *5937** Correlation of Chromosome Abnormalities with Histological and Clinical Features in Wilms' and Other Childhood Renal Tumors. Yasuhiko Kaneko, Chieko Homma, Nobuo Maseki, Masaharu Sakurai, and Jun-ichi Hata.
- 5943** Coexpression of Cytokeratins Characteristic for Myoepithelial and Luminal Cell Lineages in Rat 13762NF Mammary Adenocarcinoma Tumors and Their Spontaneous Metastases. R. B. Lichtner, J. A. Julian, S. M. North, S. R. Glasser, and G. L. Nicolson.
- *5951** Involvement of Transforming Growth Factor α /Epidermal Growth Factor Receptor Autocrine Growth Mechanism in an Ovarian Cancer Cell Line *in Vitro*. Ken-ichiro Morishige, Hirohisa Kurachi, Kyoka Amemiya, Hiroshi Adachi, Masaki Inoue, Akira Miyake, Osamu Tanizawa, and Yasuhiko Sakoyama.
- *5956** Importance of Transforming Growth Factor α /Epidermal Growth Factor Receptor Autocrine Growth Mechanism in an Ovarian Cancer Cell Line *in Vivo*. Hirohisa Kurachi, Ken-ichiro Morishige, Kyoka Amemiya, Hiroshi Adachi, Kenji Hirota, Akira Miyake, and Osamu Tanizawa.
- *5960** Three-Step Monoclonal Antibody Tumor Targeting in Carcinoembryonic Antigen-positive Patients. G. Paganelli, P. Magnani, F. Zito, E. Villa, F. Sudati, L. Lopalco, C. Rossetti, M. Malcovati, F. Chiolerio, E. Seccamani, A. G. Siccardi, and F. Fazio.
- *5967** Malignant Human Papillomavirus Type 16-transformed Human Keratinocytes Exhibit Altered Expression of Extracellular Matrix Glycoproteins. Nader Sheibani, John S. Rhim, and B. Lynn Allen-Hoffmann.
- 5976** Expression of Mutant p53 in Melanoma. Jonathan R. Stretch, Kevin C. Gatter, Elisabeth Ralfkiaer, David P. Lane, and Adrian L. Harris.
- 5980** Inhibitory Effect of Bombesin/Gastrin-releasing Peptide Antagonist RC-3095 and High Dose of Somatostatin Analogue RC-160 on Nitrosamine-induced Pancreatic Cancers in Hamsters. Karoly Szepeshazi, Andrew V. Schally, Ren-Zhi Cai, Sinisa Radulovic, Slobodan Milovanovic, and Balazs Szoke.
- *5987** Norethindrone Scatters Silver-stained Nucleolar Organizer Regions of Ishikawa Cells. Yasuhiro Yokoyama, Kenji Niwa, and Teruhiko Tamaya.
- 5993** Photodynamic Therapy Induces Rapid Cell Death by Apoptosis in L5178Y Mouse Lymphoma Cells. Munna L. Agarwal, Marian E. Clay, Ella J. Harvey, Helen H. Evans, Antonio R. Antunez, and Nancy L. Oleinick.
- *5997** The Protooncogene *c-myc* Increases the Expression of Insulin-like Growth Factor 1 and Insulin-like Growth Factor 1 Receptor Messenger RNAs by a Transcriptional Mechanism. Krzysztof Reiss, Andres Ferber, Salvatore Travali, Pierluigi Porcu, Paul D. Phillips, and Renato Baserga.
- *6001** V(D)J Recombinase-like Activity Mediates *hprt* Gene Deletion in Human Fetal T-Lymphocytes. James C. Fuscoe, Lisa J. Zimmerman, Malcolm J. Lippert, Janice A. Nicklas, J. Patrick O'Neill, and Richard J. Albertini.
- *6006** Inhibition of Growth of HT-29 Human Colon Cancer Xenografts in Nude Mice by Treatment with Bombesin/Gastrin Releasing Peptide Antagonist (RC-3095). Sinisa Radulovic, Glenn Miller, and Andrew V. Schally.
- *6010** Down-Regulation of *cdc2* in Senescent Human and Hamster Cells. K. Hartmut Richter, Cynthia A. Afshari, Lois A. Annab, Barbara A. Burkhardt, Russell D. Owen, Jeff Boyd, and J. Carl Barrett.
-
- 6014** Announcements
 Eighty-Third Annual Meeting of the AACR
 AACR Special Conferences in Cancer Research
 Future Annual Meetings of the AACR
 National Cancer Institute Announces Availability of Study Sets of Histological Slides of Rodent Tumors
 Recent Death
 Calendar of Events
- 6017** Author Index

NOTE: AACR forms available in the back of this issue—
 • Application for Active and Corresponding Membership
 • Application for Associate Membership

Also available in the back of this issue—
 GUIDELINES FOR SUBMITTING DISKS TO
 AACR PUBLICATIONS

Advances in Brief

- 5993 **Photodynamic Therapy Induces Rapid Cell Death by Apoptosis in L5178Y Mouse Lymphoma Cells.** Munna L. Agarwal, Marian E. Clay, Ella J. Harvey, Helen H. Evans, Antonio R. Antunez, and Nancy L. Oleinick.
- *5997 **The Protooncogene *c-myb* Increases the Expression of Insulin-like Growth Factor 1 and Insulin-like Growth Factor 1 Receptor Messenger RNAs by a Transcriptional Mechanism.** Krzysztof Reiss, Andres Ferber, Salvatore Travali, Pierluigi Porcu, Paul D. Phillips, and Renato Baserga.
- *6001 **V(D)J Recombinase-like Activity Mediates *hprt* Gene Deletion in Human Fetal T-Lymphocytes.** James C. Fuscoe, Lisa J. Zimmerman, Malcolm J. Lippert, Janice A. Nicklas, J. Patrick O'Neill, and Richard J. Albertini.
- *6006 **Inhibition of Growth of HT-29 Human Colon Cancer Xenografts in Nude Mice by Treatment with Bombesin/Gastrin Releasing Peptide Antagonist (RC-3095).** Sinisa Radulovic, Glenn Miller, and Andrew V. Schally.
- *6010 **Down-Regulation of *cdc2* in Senescent Human and Hamster Cells.** K. Hartmut Richter, Cynthia A. Afshari, Lois A. Annab, Barbara A. Burkhart, Russell D. Owen, Jeff Boyd, and J. Carl Barrett.

BASIC SCIENCES

Biochemistry and Biophysics

- *5826 **The Breast Tumor-associated Epitope Defined by Monoclonal Antibody 3E1.2 Is an O-linked Mucin Carbohydrate Containing N-Glycolylneuraminic Acid.** Peter L. Devine, Bronwyn A. Clark, Geoffrey W. Birrell, Guy T. Layton, Bruce G. Ward, Paul F. Alewood, and Ian F. C. McKenzie.

Carcinogenesis

- *5837 **Nickel(II)- and Cobalt(II)-dependent Damage by Hydrogen Peroxide to the DNA Bases in Isolated Human Chromatin.** Zeena Nackerdien, Kazimierz S. Kasprzak, Govind Rao, Barry Halliwell, and Miral Dizdaroglu.
- 5843 **Nitrosamine-induced Cancer: Selective Repair and Conformational Differences between O⁶-Methylguanine Residues in Different Positions in and around Codon 12 of Rat *H-ras*.** Panagiotis Georgiadis, Clive A. Smith, and Peter F. Swann.
- 5898 **Effects of Transforming Growth Factor β on the Anchorage-independent Growth of Murine Epithelial JB6 Cells.** Phillip J. Wilder and Angie Rizzino.
- 5929 **Development of Resistance to the Growth Inhibitory Effects of Transforming Growth Factor β_1 during the Spontaneous Transformation of Rat Liver Epithelial Cells.** Anthony C. Huggett, Patricia A. Ellis, Caroline P. Ford, Lori L. Hampton, Donata Rimoldi, and Snorri S. Thorgeirsson.

- *5967 **Malignant Human Papillomavirus Type 16-transformed Human Keratinocytes Exhibit Altered Expression of Extracellular Matrix Glycoproteins.** Nader Sheibani, John S. Rhim, and B. Lynn Allen-Hoffmann.

Endocrinology

- 5851 **Pyrrolidino-4-iodotamoxifen and 4-Iodotamoxifen, New Analogues of the Antiestrogen Tamoxifen for the Treatment of Breast Cancer.** S. K. Chander, R. McCague, Y. Luqmani, C. Newton, M. Dowsett, M. Jarman, and R. C. Coombes.

Immunology

- 5893 **Effect of Psoralen plus Ultraviolet A Radiation on *in Vivo* Growth of Melanoma Cells.** François Aubin, Cherrie K. Donawho, and Margaret L. Kripke.

Molecular Biology and Genetics

- *5786 **Development and Field-Test Validation of an Assay for DNA Repair in Circulating Human Lymphocytes.** William F. Athas, Mohammad A. Hedayati, Genevieve M. Matanoski, Evan R. Farmer, and Lawrence Grossman.
- *5794 **Accumulation of Genetic Alterations and Progression of Primary Breast Cancer.** Takaaki Sato, Futoshi Akiyama, Goi Sakamoto, Fujio Kasumi, and Yusuke Nakamura.
- *5800 **p53 Gene Mutations in Gastric Cancer Metastases and in Gastric Cancer Cell Lines Derived from Metastases.** Yukishige Yamada, Teruhiko Yoshida, Kenshi Hayashi, Takao Sekiya, Jun Yokota, Setsuo Hirohashi, Katsunori Nakatani, Hiroshige Nakano, Takashi Sugimura, and Masaaki Terada.
- *5817 **Common Regions of Deletion on Chromosomes 5q, 6q, and 10q in Renal Cell Carcinoma.** Ryoji Morita, Susumu Saito, Jiro Ishikawa, Osamu Ogawa, Osamu Yoshida, Kazuhiro Yamakawa, and Yusuke Nakamura.

Preclinical Pharmacology and Experimental Therapeutics

- *5781 **Phase I and Pharmacokinetic Study of Hepsulfam (NSC 329680).** Carolyn B. Hendricks, Louise B. Grochow, Eric K. Rowinsky, Arlene A. Forastiere, William P. McGuire, David S. Ettinger, Susan Sartorius, Barbara Lubejko, and Ross C. Donehower.
- 5806 ***In Vivo* Measurements of Intratumoral Metabolism, Modulation, and Pharmacokinetics of 5-Fluorouracil, Using ¹⁹F Nuclear Magnetic Resonance Spectroscopy.** Ahmed El-Tahtawy and Walter Wolf.
- 5813 **Synergistic Cell Killing by Ionizing Radiation and Topoisomerase I Inhibitor Topotecan (SK&F 104864).** Michael R. Mattern, Glenn A. Hofmann, Francis L. McCabe, and Randall K. Johnson.
- *5821 **Inhibition of Cell Proliferation, Protein Kinase C, and Phorbol Ester-induced *fos* Expression by the Dihydropyridine Derivative B859-35.** Florian Überall, Karl Maly, Alexander Egle, Wolfgang Doppler, Johann Hofmann, and Hans H. Grunicke.
- *5903 **Expression of the *c-Ha-ras* Oncogene in Mouse NIH 3T3 Cells Induces Resistance to Cisplatin.** Seiji Isonishi, Doreen K. Hom, Franz B. Thiebaut, Stephen C. Mann, Paul A. Andrews, Alakananda Basu, John S. Lazo, Alan Eastman, and Stephen B. Howell.

* Indicates studies using human-derived material.

- 5910 **Combination Therapy: Lonidamine, Hyperthermia, and Chemotherapy against the RIF-1 Tumor *in Vivo*.** Shoucheng Ning and George M. Hahn.
- *5915 **P-Glycoprotein Expression and DNA Topoisomerase I and II Activity in Benign Tumors of the Ovary and in Malignant Tumors of the Ovary, before and after Platinum/Cyclophosphamide Chemotherapy.** Ate G. J. van der Zee, Harry Hollema, Steven de Jong, Henk Boonstra, Annette Gouw, Pax H. B. Willemse, Jan G. Zijlstra, and Elisabeth G. E. de Vries.
- 5921 **Biodistribution and Dosimetry following Infusion of Antibodies Labeled with Large Amounts of ¹³¹I.** Christopher C. Badger, Jeffrey Davis, Cynthia Nourigat, Zhao Mai Wu, T. Edmond Hui, Darrell R. Fisher, Howard Shulman, Frederick R. Appelbaum, Janet F. Eary, Kenneth A. Krohn, Dana C. Matthews, and Irwin D. Bernstein.
- 5980 **Inhibitory Effect of Bombesin/Gastrin-releasing Peptide Antagonist RC-3095 and High Dose of Somatostatin Analogue RC-160 on Nitrosamine-induced Pancreatic Cancers in Hamsters.** Karoly Szepeshazi, Andrew V. Schally, Ren-Zhi Cai, Sinisa Radulovic, Slobodan Milovanovic, and Balazs Szoke.
- *5987 **Norethindrone Scatters Silver-stained Nucleolar Organizer Regions of Ishikawa Cells.** Yasuhiro Yokoyama, Kenji Niwa, and Teruhiko Tamaya.

Tumor Biology

- *5859 **Insulin-like Growth Factor I Rapidly Induces Tyrosine Phosphorylation of a *M*, 150,000 and a *M*, 160,000 Protein in Highly Metastatic Mouse Colon Carcinoma 26 NL-17 Cells.** Takao Yamori, Yumiko Iizuka, Yasuko Takayama, Shigeki Nishiya, Shintaro Iwashita, Akiko Yamazaki, Toshiro Takatori, and Takashi Tsuruo.
- *5866 **Regulation of Kinesin Expression and Type IV Collagenase Secretion in Invasive Human Prostate PC-3 Tumor Sublines.** Mark E. Stearns and Min Wang.
- *5881 **α -Interferon Down-Regulates Epidermal Growth Factor Receptors on Renal Carcinoma Cells: Relation to Cellular Responsiveness to the Antiproliferative Action of α -Interferon.** Barbara L. Eisenkraft, David M. Nanus, Anthony P. Albino, and Lawrence M. Pfeffer.
- *5937 **Correlation of Chromosome Abnormalities with Histological and Clinical Features in Wilms' and Other Childhood Renal Tumors.** Yasuhiko Kaneko, Chieko Homma, Nobuo Maseki, Masaharu Sakurai, and Jun-ichi Hata.
- 5943 **Coexpression of Cytokeratins Characteristic for Myoepithelial and Luminal Cell Lineages in Rat 13762NF Mammary Adenocarcinoma Tumors and Their Spontaneous Metastases.** R. B. Lichtner, J. A. Julian, S. M. North, S. R. Glasser, and G. L. Nicolson.
- *5951 **Involvement of Transforming Growth Factor α /Epidermal Growth Factor Receptor Autocrine Growth Mechanism in an Ovarian Cancer Cell Line *in Vitro*.** Ken-ichiro Morishige, Hirohisa Kurachi, Kyoka Amemiya, Hiroshi Adachi, Masaki Inoue, Akira Miyake, Osamu Tanizawa, and Yasuhiko Sakoyama.

- *5956 **Importance of Transforming Growth Factor α /Epidermal Growth Factor Receptor Autocrine Growth Mechanism in an Ovarian Cancer Cell Line *in Vitro*.** Hirohisa Kurachi, Ken-ichiro Morishige, Kyoka Amemiya, Hiroshi Adachi, Kenji Hirota, Akira Miyake, and Osamu Tanizawa.
- *5976 **Expression of Mutant p53 in Melanoma.** Jonathan R. Stretch, Kevin C. Gatter, Elisabeth Ralfkiaer, David P. Lane, and Adrian L. Harris.

Virology

- *5876 **Antitumor Activity of Fab' and IgG-anti-CD22 Immunotoxins in Disseminated Human B Lymphoma Grown in Mice with Severe Combined Immunodeficiency Disease: Effect on Tumor Cells in Extranodal Sites.** Maria-Ana Ghetie, James Richardson, Thomas Tucker, Diane Jones, Jonathan W. Uhr, and Ellen S. Vitetta.

CLINICAL AND EPIDEMIOLOGICAL INVESTIGATIONS

Clinical

- 5888 **Glycosylation at the Fab Portion of Myeloma Immunoglobulin G and Increased Fucosylated Biantennary Sugar Chains: Structural Analysis by High-Performance Liquid Chromatography and Antibody-Lectin Enzyme Immunoassay Using *Lens culinaris* Agglutinin.** Noriaki Kinoshita, Masao Ohno, Tetsuo Nishiura, Shigeru Fujii, Atsushi Nishikawa, Yukari Kawakami, Naofumi Uozumi, and Naoyuki Taniguchi.
- 5960 **Three-Step Monoclonal Antibody Tumor Targeting in Carcinoembryonic Antigen-positive Patients.** G. Paganelli, P. Magnani, F. Zito, E. Villa, F. Sudati, L. Lopalco, C. Rossetti, M. Malcovati, F. Chiolerio, E. Seccamani, A. G. Siccardi, and F. Fazio.

-
- 6014 **Announcements**
 Eighty-Third Annual Meeting of the AACR
 AACR Special Conferences in Cancer Research
 Future Annual Meetings of the AACR
 National Cancer Institute Announces Availability of Study Sets of Histological Slides of Rodent Tumors
 Recent Death
 Calendar of Events
- 6017 **Author Index**

NOTE: AACR forms available in the back of this issue—
 • Application for Active and Corresponding Membership
 • Application for Associate Membership

Also available in the back of this issue—
 GUIDELINES FOR SUBMITTING DISKS TO
 AACR PUBLICATIONS

Cancer Research

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

51 (21)

Cancer Res 1991;51:5781-6016.

Updated version Access the most recent version of this article at:
<http://cancerres.aacrjournals.org/content/51/21.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.

Permissions To request permission to re-use all or part of this article, use this link <http://cancerres.aacrjournals.org/content/51/21.citation>. Click on "Request Permissions" which will take you to the Copyright Clearance Center's (CCC) Rightslink site.