

The Biology Behind

HER2 Inhibition: From Discovery to Clinical Practice.

□□ Commentary on Buzdar et al., p. 228

Jenny C. Chang.....1

Molecular Pathways

Targeting Fanconi Anemia/BRCA2 Pathway Defects in Cancer: The Significance of Preclinical Pharmacogenomic Models.

Eike Gallmeier and Scott E. Kern4

Review

Reversing Hepatocellular Carcinoma Progression by Using Networked Biological Therapies.

Richard J. Epstein and Thomas W. Leung11

Human Cancer Biology

The Histone Deacetylase Inhibitor Suberoylanilide Hydroxamic Acid Induces Growth Inhibition and Enhances Gemcitabine-Induced Cell Death in Pancreatic Cancer.

Nichole Boyer Arnold, Nohea Arkus, Jason Gunn, and Murray Korc18

Ubiquitin COOH-Terminal Hydrolase 1: A Biomarker of Renal Cell Carcinoma Associated with Enhanced Tumor Cell Proliferation and Migration.

Barbara Seliger, Alla Fedorushchenko, Walburgis Brenner, Angelika Ackermann, Derek Atkins, Samir Hanash, and Rudolf Lichtenfels27

Requirement of Aryl Hydrocarbon Receptor Overexpression for CYP1B1 Up-Regulation and Cell Growth in Human Lung Adenocarcinomas.

Jinghua Tsai Chang, Han Chang, Po-Hung Chen, Shong-Ling Lin, and Pinpin Lin38

Radiation Effects on Development of HER2-Positive Breast Carcinomas.

Fabio Castiglioni, Monica Terenziani, Maria Luisa Carcangiu, Raffaella Miliano, Piera Aiello, Lorenzo Bertola, Tiziana Triulzi, Patrizia Gasparini, Tiziana Camerini, Gabriella Sozzi, Franca Fossati-Bellani, Sylvie Ménard, and Elda Tagliabue46

Clonality and Prognostic Implications of p53 and Epidermal Growth Factor Receptor Somatic Aberrations in Multiple Primary Lung Cancers.

Yih-Leong Chang, Chen-Tu Wu, Shu-Chen Lin, Chin-Fu Hsiao, Yuh-Shan Jou, and Yung-Chie Lee52

Parthenolide, a Natural Inhibitor of Nuclear Factor- κ B, Inhibits Lung Colonization of Murine Osteosarcoma Cells.

Yuki Kishida, Hideki Yoshikawa, and Akira Myoui59

Expression of the Hypoxia Marker Carbonic Anhydrase 9 Is Associated with Anaplastic Phenotypes in Meningiomas.

Heon Yoo, Gilson S. Baia, Justin S. Smith, Michael W. McDermott, Andrew W. Bollen, Scott R. Vanden Berg, Kathleen R. Lamborn, and Anita Lal68

Determination of Microvessel Density by Quantitative Real-time PCR in Esophageal Cancer: Correlation with Histologic Methods, Angiogenic Growth Factor Expression, and Lymph Node Metastasis.

Sonja Loges, Henning Clausen, Uta Reichelt, Michael Bubenheim, Andreas Erbersdobler, Paulus Schurr, Emre Yekebas, Gunter Schuch, Jakob Izbicki, Klaus Pantel, Carsten Bokemeyer, and Walter Fiedler76

4E-Binding Protein 1, A Cell Signaling Hallmark in Breast Cancer that Correlates with Pathologic Grade and Prognosis.

Federico Rojo, Laura Najera, José Lirola, José Jiménez, Marta Guzmán, M. Dolores Sabadell, Jose Baselga, and Santiago Ramon y Cajal81

Caveolin 1 Is Overexpressed and Amplified in a Subset of Basal-like and Metaplastic Breast Carcinomas: A Morphologic, Ultrastructural, Immunohistochemical, and *In situ* Hybridization Analysis.

Kay Savage, Maryou B.K. Lambros, David Robertson, Robin L. Jones, Chris Jones, Alan Mackay, Michelle James, Jason L. Hornick, Emilio M. Pereira, Fernanda Milanezi, Christopher D.M. Fletcher, Fernando C. Schmitt, Alan Ashworth, and Jorge S. Reis-Filho90

Inactivation of SMAD4 Tumor Suppressor Gene During Gastric Carcinoma Progression. Li-Hui Wang, Seok-Hyung Kim, Jung Hyun Lee, Yoon-La Choi, Young Chul Kim, Tae Sung Park, Yun-Chul Hong, Chun-Fu Wu, and Young Kee Shin.....	102
Clonal and Parallel Evolution of Primary Lung Cancers and Their Metastases Revealed by Molecular Dissection of Cancer Cells. Kenji Takahashi, Takashi Kohno, Shingo Matsumoto, Yukihiro Nakanishi, Yasuhito Arai, Seiichiro Yamamoto, Toshiyoshi Fujiwara, Noriaki Tanaka, and Jun Yokota.....	111
Reciprocal Modifications of CLIC4 in Tumor Epithelium and Stroma Mark Malignant Progression of Multiple Human Cancers. Kwang S. Suh, John M. Crutchley, Arash Koochek, Andrew Ryscavage, Kiran Bhat, Takemi Tanaka, Akira Oshima, Peter Fitzgerald, and Stuart H. Yuspa.....	121

Imaging, Diagnosis, Prognosis

High Human Papillomavirus Oncogene mRNA Expression and Not Viral DNA Load Is Associated with Poor Prognosis in Cervical Cancer Patients. Marjon A. de Boer, Ekaterina S. Jordanova, Gemma G. Kenter, Alexander A. Peters, Willem E. Corver, J. Baptist Trimpos, and Gert Jan Fleuren.....	132
Quantification of the Heterogeneity in Breast Cancer Cell Lines Using Whole-Cell Impedance Spectroscopy. Arum Han, Lily Yang, and A. Bruno Frazier.....	139
Clinical Relevance of E2F Family Members in Ovarian Cancer—An Evaluation in a Training Set of 77 Patients. Daniel Reimer, Susann Sadr, Annemarie Wiedemair, Sylvia Stadlmann, Nicole Concin, Gerda Hofstetter, Elisabeth Müller-Holzner, Christian Marth, and Alain G. Zeimet.....	144
Expression of Adipose Differentiation-Related Protein: A Predictor of Cancer-Specific Survival in Clear Cell Renal Carcinoma. Masahiro Yao, Ying Huang, Koichi Shioi, Keiko Hattori, Takayuki Murakami, Noboru Nakaigawa, Takeshi Kishida, Yoji Nagashima, and Yoshinobu Kubota.....	152
Two Distinct Types of Blood Vessels in Clear Cell Renal Cell Carcinoma Have Contrasting Prognostic Implications. Xin Yao, Chao-Nan Qian, Zhong-Fa Zhang, Min-Han Tan, Eric J. Kort, Ximing J. Yang, James H. Resau, and Bin Tean Teh.....	161
Pathologic and Molecular Heterogeneity in Imatinib-Stable or Imatinib-Responsive Gastrointestinal Stromal Tumors. Narasimhan P. Agaram, Peter Besmer, Grace C. Wong, Tianhua Guo, Nicholas D. Socci, Robert G. Maki, Diann DeSantis, Murray F. Brennan, Samuel Singer, Ronald P. DeMatteo, and Cristina R. Antonescu.....	170
Risk of Second Cancer in Nongastric Marginal Zone B-Cell Lymphomas of Mucosa-Associated Lymphoid Tissue: A Population-Based Study from Northern Italy. Luca Arcaini, Sara Burcheri, Andrea Rossi, Cristiana Pascutto, Francesco Passamonti, Ercole Brusamolino, Marco Paulli, Ester Orlandi, Maurizio Buelli, Piera Viero, Marco Lucioni, Francesca Montanari, Michele Merli, Sergio Cortelazzo, and Mario Lazzarino.....	182
Prognostic Value of Tumor Architecture, Tumor-Associated Vascular Characteristics, and Expression of Angiogenic Molecules in Pancreatic Endocrine Tumors. Yu Takahashi, Yuri Akishima-Fukasawa, Noritoshi Kobayashi, Tsuyoshi Sano, Tomoo Kosuge, Yuji Nimura, Yae Kanai, and Nobuyoshi Hiraoka.....	187
Nonsynonymous Coding Single-Nucleotide Polymorphisms Spanning the Genome in Relation to Glioblastoma Survival and Age at Diagnosis. Margaret Wrensch, Alex McMillan, John Wiencke, Joe Wiemels, Karl Kelsey, Joe Patoka, Hywel Jones, Victoria Carlton, Rei Miike, Jennette Sison, Michelle Moghadassi, and Michael Prados.....	197

Cancer Therapy: Clinical

Expression of Cellular FLICE Inhibitory Protein, Caspase-8, and Protease Inhibitor-9 in Ewing Sarcoma and Implications for Susceptibility to Cytotoxic Pathways. Alfons S.K. de Hooge, Dagmar Berghuis, Susy Justo Santos, Esther Mooiman, Salvatore Romeo, J. Alain Kummer, R. Maarten Egeler, Maarten J.D. van Tol, Cornelis J.M. Melief, Pancras C.W. Hogendoorn, and Arjan C. Lankester.....	206
---	-----

Alum with Interleukin-12 Augments Immunity to a Melanoma Peptide Vaccine: Correlation with Time to Relapse in Patients with Resected High-Risk Disease. Omid Hamid, Jolie C. Solomon, Ronald Scotland, Marile Garcia, Shirley Sian, Wei Ye, Susan L. Groshen, and Jeff S. Weber.....	215
Increased Dose Density Is Feasible: A Pilot Study of Adjuvant Epirubicin and Cyclophosphamide followed by Paclitaxel, at 10- or 11-Day Intervals with Filgrastim Support in Women with Breast Cancer. Monica N. Fornier, Andrew D. Seidman, Diana Lake, Gabriella D'Andrea, Jacqueline Bromberg, Mark Robson, Catherine Van Poznak, Katherine S. Panageas, Marietta Atienza, Larry Norton, and Clifford Hudis.....	223
Neoadjuvant Therapy with Paclitaxel followed by 5-Fluorouracil, Epirubicin, and Cyclophosphamide Chemotherapy and Concurrent Trastuzumab in Human Epidermal Growth Factor Receptor 2–Positive Operable Breast Cancer: An Update of the Initial Randomized Study Population and Data of Additional Patients Treated with the Same Regimen. Aman U. Buzdar, Vicente Valero, Nuhad K. Ibrahim, Deborah Francis, Kristine R. Broglio, Richard L. Theriault, Lajos Pusztai, Marjorie C. Green, Sonja E. Singletary, Kelly K. Hunt, Aysegul A. Sahin, Francisco Esteva, William F. Symmans, Michael S. Ewer, Thomas A. Buchholz, and Gabriel N. Hortobagyi.....	228
Clinical and <i>In vitro</i> Studies of Imatinib in Advanced Carcinoid Tumors. James C. Yao, Jun X. Zhang, Asif Rashid, Sai-Ching J. Yeung, Janio Szklaruk, Kenneth Hess, Keping Xie, Lee Ellis, James L. Abbruzzese, and Jaffer A. Ajani	234
Obesity and Sex Steroids during Gonadotropin-Releasing Hormone Agonist Treatment for Prostate Cancer. Matthew R. Smith.....	241
Pilot Study of Rosiglitazone Therapy in Women with Breast Cancer: Effects of Short-term Therapy on Tumor Tissue and Serum Markers. Lisa D. Yee, Nita Williams, Ping Wen, Donn C. Young, Joanne Lester, Maria V. Johnson, William B. Farrar, Michael J. Walker, Stephen P. Povoski, Saul Suster, and Charis Eng.....	246

Cancer Therapy: Preclinical

Antitumor Activity of Novel Indirubin Derivatives in Rat Tumor Model. Soo-A Kim, Yong-Chul Kim, Si-Wouk Kim, Sang-Ho Lee, Jung-Joon Min, Sang-Gun Ahn, and Jung-Hoon Yoon.....	253
Manipulation of Base Excision Repair to Sensitize Ovarian Cancer Cells to Alkylating Agent Temozolomide. Melissa L. Fishel, Ying He, Martin L. Smith, and Mark R. Kelley.....	260
Inhibition of Breast Cancer Cell Growth <i>In vitro</i> and <i>In vivo</i>: Effect of Restoration of Wwox Expression. Dimitrios Iliopoulos, Muller Fabbri, Teresa Druck, Haiyan R. Qin, Shuang-Yin Han, and Kay Huebner.....	268
The Effects of Histone Deacetylase Inhibitors on the Induction of Differentiation in Chondrosarcoma Cells. Riku Sakimura, Kazuhiro Tanaka, Syunsaku Yamamoto, Tomoya Matsunobu, Xu Li, Masuo Hanada, Takamitsu Okada, Tomoyuki Nakamura, Yang Li, and Yukihide Iwamoto	275
Modifying Dendritic Cells via Protein Transfer for Antitumor Therapeutics. Shanrong Liu, Barbara A. Foster, Tie Chen, Guoxing Zheng, and Aoshuang Chen	283
Parathyroid Hormone-Related Protein Induces Cachectic Syndromes without Directly Modulating the Expression of Hypothalamic Feeding-Regulating Peptides. Hirofumi Hashimoto, Yumiko Azuma, Makoto Kawasaki, Hiroaki Fujihara, Etsuro Onuma, Hisafumi Yamada-Okabe, Yoh Takuwa, Etsuro Ogata, and Yoichi Ueta.....	292
Emerging Role of Platelet-Derived Growth Factor Receptor-β Inhibition in Radioimmunotherapy of Experimental Pancreatic Cancer. Janina Baranowska-Kortylewicz, Michio Abe, Jessica Nearman, and Charles A. Enke	299
Leukemia-Specific T-Cell Reactivity Induced by Leukemic Dendritic Cells Is Augmented by 4-1BB Targeting. Ilse Houtenbos, Theresia M. Westers, Annemiek Dijkhuis, Tanja D. de Gruijl, Gert J. Ossenkoppele, and Arjan A. van de Loosdrecht.....	307

Virotherapy with a Type 2 Herpes Simplex Virus–Derived Oncolytic Virus Induces Potent Antitumor Immunity against Neuroblastoma. Hongtao Li, Aurelie Dutoir, Lihua Tao, Xinping Fu, and Xiaoliu Zhang.....	316
Monitoring Response to Anticancer Therapy by Targeting Microbubbles to Tumor Vasculature. Grzegorz Korpanty, Juliet G. Carbon, Paul A. Grayburn, Jason B. Fleming, and Rolf A. Brekken	323
The Combi-Targeting Concept: <i>In vitro</i> and <i>In vivo</i> Fragmentation of a Stable Combi-Nitrosourea Engineered to Interact with the Epidermal Growth Factor Receptor while Remaining DNA Reactive. Qiyu Qiu, Juozas Domarkas, Ranjita Banerjee, Nuria Merayo, Fouad Brahimi, James P. McNamee, Bernard F. Gibbs, and Bertrand J. Jean-Claude	331
Therapeutic Synergy of Human Papillomavirus E7 Subunit Vaccines plus Cisplatin in an Animal Tumor Model: Causal Involvement of Increased Sensitivity of Cisplatin-Treated Tumors to CTL-Mediated Killing in Therapeutic Synergy. Sung Hwa Bae, Young-Ja Park, Jae-Bok Park, Youn Seok Choi, Mi Suk Kim, and Jeong-Im Sin	341

Cancer Susceptibility and Prevention

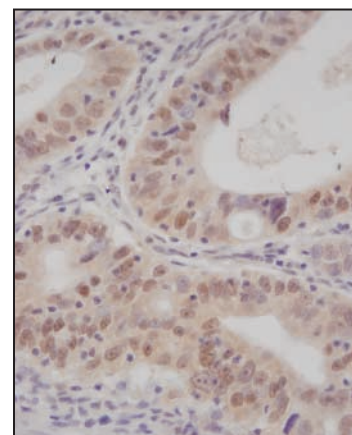
Pterostilbene, an Active Constituent of Blueberries, Suppresses Aberrant Crypt Foci Formation in the Azoxymethane-Induced Colon Carcinogenesis Model in Rats. Nanjoo Suh, Shiby Paul, Xingpei Hao, Barbara Simi, Hang Xiao, Agnes M. Rimando, and Bandaru S. Reddy	350
Explaining the Familial Colorectal Cancer Risk Associated with Mismatch Repair (MMR)-Deficient and MMR-Stable Tumors. Lauri Aaltonen, Louise Johns, Heikki Järvinen, Jukka-Pekka Mecklin, and Richard Houlston	356

Acknowledgment to Reviewers

Acknowledgment to Reviewers.....	362
---	-----

About the Cover

SMAD4 is a tumor suppressor gene whose inactivation by the various mechanisms frequently occurs in association with malignant progression. Cytoplasmic and nuclear expression levels of SMAD4 are increased in both low-grade and high-grade dysplasia but are gradually reduced as dysplasia progresses to gastric adenocarcinoma. This figure shows strong cytoplasmic and nuclear staining of SMAD4 in stage I of gastric carcinoma, but SMAD4 is gradually reduced as the carcinoma develops to subsequent stages, possibly owing to a modified two-hit model of tumor suppressor genes as proposed in the article. For more details, please see Wang *et al.* on page 102 of this issue.



Clinical Cancer Research will no longer print author and subject indexes for each yearly volume. The majority of our readers report that they now use online search capabilities to find articles (<http://clincancerres.aacrjournals.org/>).

Clinical Cancer Research

13 (1)

Clin Cancer Res 2007;13:1-361.

Updated version Access the most recent version of this article at:
<http://clincancerres.aacrjournals.org/content/13/1>

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://clincancerres.aacrjournals.org/content/13/1>. Click on "Request Permissions" which will take you to the Copyright Clearance Center's (CCC) Rightslink site.