

SPECIAL FEATURES

Highlights of This Issue 4057

CCR Translations

4059 Immunotherapy for Glioblastoma: Playing Chess, Not Checkers

Christopher M. Jackson and Michael Lim
See related articles, p. 4175 and p. 4187

4062 PARP Inhibitors in Ovarian Cancer: A Trailblazing and Transformative Journey

Panagiotis A. Konstantinopoulos and
Ursula A. Matulonis
See related article, p. 4066

CCR Drug Updates

4066 FDA Approval Summary: Niraparib for the Maintenance Treatment of Patients with Recurrent Ovarian Cancer in Response to Platinum-Based Chemotherapy

Gwynn Ison, Lynn J. Howie, Laleh Amiri-Kordestani, Lijun Zhang, Shenghui Tang, Rajeshwari Sridhara, Vadryn Pierre, Rosane Charlab, Anuradha Ramamoorthy, Pengfei Song, Fang Li, Jingyu Yu, Wimolnut Manheng, Todd R. Palmby, Soma Ghosh, Hisani N. Horne, Eunice Y. Lee, Reena Philip, Kaushalkumar Dave, Xiao Hong Chen, Sharon L. Kelly, Kumar G. Janoria, Anamitro Banerjee, Okponanabofa Eradiiri, Jeannette Dinin, Kirsten B. Goldberg, William F. Pierce, Amna Ibrahim, Paul G. Kluetz, Gideon M. Blumenthal, Julia A. Beaver, and Richard Pazdur
See related commentary, p. 4062

CLINICAL TRIALS: TARGETED THERAPY

4072 Phase I Study of CC-486 Alone and in Combination with Carboplatin or nab-Paclitaxel in Patients with Relapsed or Refractory Solid Tumors

Daniel D. Von Hoff, Drew W. Rasco, Elisabeth I. Heath, Pamela N. Munster, Jan H.M. Schellens, Nicolas Isambert, Christophe Le Tourneau, Bert O'Neil, Ron H.J. Mathijssen, Jose A. Lopez-Martin, W. Jeff Edenfield, Miguel Martin, Patricia M. LoRusso, Gordon L. Bray, Jorge DiMartino, Aaron Nguyen, Kejian Liu, Eric Laille, and Johanna C. Bendell

4081 Radium-223 Dichloride in Combination with Vascular Endothelial Growth Factor–Targeting Therapy in Advanced Renal Cell Carcinoma with Bone Metastases

Rana R. McKay, Dominick Bossé, Kathryn P. Gray, M. Dror Michaelson, Katherine Krajewski, Heather A. Jacene, Meghara Walsh, Joaquim Bellmunt, Mark Pomerantz, Lauren C. Harshman, and Toni K. Choueiri

4089 Vitamin D Supplementation and Survival of Patients with Non–small Cell Lung Cancer: A Randomized, Double-Blind, Placebo-Controlled Trial

Tadashi Akiba, Toshiaki Morikawa, Makoto Odaka, Takeo Nakada, Noriki Kamiya, Makoto Yamashita, Mitsuo Yabe, Takuya Inagaki, Hisatoshi Asano, Shohei Mori, Yo Tsukamoto, and Mitsuyoshi Urashima

CLINICAL TRIALS: IMMUNOTHERAPY

4098 Infusion of Alloantigenized Donor Lymphocytes after CD34-selected Haploidentical Myeloablative Hematopoietic Stem Cell Transplantation

Jeff K. Davies, Lisa L. Brennan, John R. Wingard, Christopher R. Cogle, Neena Kapoor, Ami J. Shah, Bimalangshu R. Dey, Thomas R. Spitzer, Marcos de Lima, Laurence J. Cooper, Peter F. Thall, Richard E. Champlin, Lee M. Nadler, and Eva C. Guinan

PRECISION MEDICINE AND IMAGING

4110 Magnetic Resonance Imaging of Tumor-Associated Macrophages: Clinical Translation

Maryam Aghighi, Ashok J. Theruvath, Anuj Pareek, Laura L. Pisani, Raphael Alford, Anne M. Muehe, Tarsheen K. Sethi, Samantha J. Holdsworth, Florette K. Hazard, Dita Gratzinger, Sandra Luna-Fineman, Ranjana Advani, Sheri L. Spunt, and Heike E. Daldrup-Link

4119 Role of Elevated *PHIP* Copy Number as a Prognostic and Progression Marker for Cutaneous Melanoma

Vladimir Bezrookove, Mehdi Nosrati, James R. Miller III, David De Semir, Altaf A. Dar, Elham Vosoughi, Edith Vaquero, Antje Sucker, Alexander J. Lazar, Jeffrey E. Gershenwald, Michael A. Davies, Dirk Schadendorf, and Mohammed Kashani-Sabet



Table of Contents

- 4126** The Epigenomic Landscape of Pituitary Adenomas Reveals Specific Alterations and Differentiates Among Acromegaly, Cushing's Disease and Endocrine-Inactive Subtypes
Matthew P. Salomon, Xiaowen Wang, Diego M. Marzese, Sandy C. Hsu, Nellie Nelson, Xin Zhang, Chikako Matsuba, Yuki Takasumi, Carmen Ballesteros-Merino, Bernard A. Fox, Garni Barkhoudarian, Daniel F. Kelly, and Dave S.B. Hoon
- 4137** Genomic Heterogeneity and the Small Renal Mass
Daiki Ueno, Zuoquan Xie, Marta Boeke, Jamil Syed, Kevin A. Nguyen, Patrick McGillivray, Adebowale Adeniran, Peter Humphrey, Garrett M. Dancik, Yuval Kluger, Zongzhi Liu, Harriet Kluger, and Brian Shuch
- 4145** STAG2 Is a Biomarker for Prediction of Recurrence and Progression in Papillary Non-Muscle-Invasive Bladder Cancer
Alana Lelo, Frederik Prip, Brent T. Harris, David Solomon, Deborah L. Berry, Krysta Chaldeckas, Anagha Kumar, Jeffrey Simko, Jørgen Bjerggaard Jensen, Pritish Bhattacharyya, Ciaran Mannion, Jung-Sik Kim, George Philips, Lars Dyrskjøt, and Todd Waldman
- 4154** Comprehensive Molecular Profiling of Intrahepatic and Extrahepatic Cholangiocarcinomas: Potential Targets for Intervention
Maeve A. Lowery, Ryan Ptashkin, Emmet Jordan, Michael F. Berger, Ahmet Zehir, Marinela Capanu, Nancy E. Kemeny, Eileen M. O'Reilly, Imane El-Dika, William R. Jarnagin, James J. Harding, Michael I. D'Angelica, Andrea Cercek, Jaclyn F. Hechtman, David B. Solit, Nikolaus Schultz, David M. Hyman, David S. Klimstra, Leonard B. Saltz, and Ghassan K. Abou-Alfa
- 4175** T-Cell Exhaustion Signatures Vary with Tumor Type and Are Severe in Glioblastoma
Karolina Woroniecka, Pakawat Chongsathidkiet, Kristen Rhodin, Hanna Kemeny, Cosette Dechant, S. Harrison Farber, Aladine A. Elsamadicy, Xiuyu Cui, Shohei Koyama, Christina Jackson, Landon J. Hansen, Tanner M. Johanns, Luis Sanchez-Perez, Vidyalakshmi Chandramohan, Yen-Rei Andrea Yu, Darell D. Bigner, Amber Giles, Patrick Healy, Glenn Dranoff, Kent J. Weinhold, Gavin P. Dunn, and Peter E. Fecci
See related commentary, p. 4059
- 4187** Immunophenotyping of Newly Diagnosed and Recurrent Glioblastoma Defines Distinct Immune Exhaustion Profiles in Peripheral and Tumor-infiltrating Lymphocytes
Malte Mohme, Simon Schliffke, Cecile L. Maire, Alessandra Rünger, Laura Glau, Klaus C. Mende, Jakob Matschke, Christina Gehbauer, Nuray Akyüz, Svenja Zapf, Mareike Holz, Miriam Schaper, Tobias Martens, Nils O. Schmidt, Sven Peine, Manfred Westphal, Mascha Binder, Eva Tolosa, and Katrin Lamszus
See related commentary, p. 4059
- 4201** MAPK Reliance via Acquired CDK4/6 Inhibitor Resistance in Cancer
Renée de Leeuw, Christopher McNair, Matthew J. Schiewer, Neermala Poudel Neupane, Lucas J. Brand, Michael A. Augello, Zhen Li, Larry C. Cheng, Akihiro Yoshida, Sean M. Courtney, E. Starr Hazard, Gary Hardiman, Maha H. Hussain, J. Alan Diehl, Justin M. Drake, Wm. Kevin Kelly, and Karen E. Knudsen
- 4215** Ad5_{NULL}-A20: A Tropism-Modified, $\alpha v\beta 6$ Integrin-Selective Oncolytic Adenovirus for Epithelial Ovarian Cancer Therapies
Hanni Uusi-Kerttula, James A. Davies, Jill M. Thompson, Phonphimon Wongthida, Laura Evgin, Kevin G. Shim, Angela Bradshaw, Alexander T. Baker, Pierre J. Rizkallah, Rachel Jones, Louise Hanna, Emma Hudson, Richard G. Vile, John D. Chester, and Alan L. Parker
- 4225** Dual Suppressive Effect of miR-34a on the FOXM1/eEF2-Kinase Axis Regulates Triple-Negative Breast Cancer Growth and Invasion
Recep Bayraktar, Cristina Ivan, Emine Bayraktar, Pinar Kanlikilicer, Nashwa N. Kabil, Nermin Kahraman, Hamada A. Mokhlis, Didem Karakas, Cristian Rodriguez-Aguayo, Ahmet Arslan, Jianting Sheng, Stephen Wong, Gabriel Lopez-Berestein, George A. Calin, and Bulent Ozpolat

TRANSLATIONAL CANCER MECHANISMS AND THERAPY

- 4162** Integrin $\beta 3$ Inhibition Enhances the Antitumor Activity of ALK Inhibitor in ALK-Rearranged NSCLC
Ka-Won Noh, Insuk Sohn, Ji-Young Song, Hyun-Tae Shin, Yu-Jin Kim, Kyungsoo Jung, Minjung Sung, Mingi Kim, Sungbin An, Joungho Han, Se-Hoon Lee, Mi-Sook Lee, and Yoon-La Choi

Table of Contents

- 4242** Mitigating SOX2-potentiated Immune Escape of Head and Neck Squamous Cell Carcinoma with a STING-inducing Nanosatellite Vaccine with a STING-inducing Nanosatellite Vaccine
Yee Sun Tan, Kanokwan Sansanaphongpricha, Yuying Xie, Christopher R. Donnelly, Xiaobo Luo, Blake R. Heath, Xinyi Zhao, Emily Bellile, Hongxiang Hu, Hongwei Chen, Peter J. Polverini, Qianming Chen, Simon Young, Thomas E. Carey, Jacques E. Nör, Robert L. Ferris, Gregory T. Wolf, Duxin Sun, and Yu L. Lei
- 4256** Target-Based Screening against eIF4A1 Reveals the Marine Natural Product Elatol as a Novel Inhibitor of Translation Initiation with *In Vivo* Antitumor Activity
 Tara L. Peters, Joseph Tillotson, Alison M. Yeomans, Sarah Wilmore, Elizabeth Lemm, Carlos Jiménez-Romero, Luis A. Amador, Lingxiao Li, Amit D. Amin, Praechompoo Pongtornpipat, Christopher J. Zerio, Andrew J. Ambrose, Gillian Paine-Murrieta, Patricia Greninger, Francisco Vega, Cyril H. Benes, Graham Packham, Abimael D. Rodríguez, Eli Chapman, and Jonathan H. Schatz
- 4271** Copper Chelation as Targeted Therapy in a Mouse Model of Oncogenic BRAF-Driven Papillary Thyroid Cancer
MengMeng Xu, Michael Casio, Danielle E. Range, Julie A. Sosa, and Christopher M. Counter
- 4282** The IGF2/IR/IGF1R Pathway in Tumor Cells and Myofibroblasts Mediates Resistance to EGFR Inhibition in Cholangiocarcinoma
Javier Vaquero, Cindy Lobe, Sylvana Tahraoui, Audrey Clapéron, Martine Mergey, Fatiha Merabtene, Dominique Wendum, Cédric Coulouarn, Chantal Housset, Christèle Desbois-Mouthon, Françoise Praz, and Laura Fouassier
- 4297** Preclinical Antitumor Activity of a Novel Anti-c-KIT Antibody-Drug Conjugate against Mutant and Wild-type c-KIT-Positive Solid Tumors
 Tinya Abrams, Anu Connor, Christie Fanton, Steven B. Cohen, Thomas Huber, Kathy Miller, E. Erica Hong, Xiaohong Niu, Janine Kline, Marjorie Ison-Dugenny, Sarah Harris, Dana Walker, Klaus Krauser, Francesco Galimi, Zhen Wang, Majid Ghodduzi, Keith Mansfield, Si Tuen Lee-Hoeflich, Jocelyn Holash, Nancy Pryer, William Kluwe, Seth A. Ettenberg, William R. Sellers, Emma Lees, Paul Kwon, Judith A. Abraham, and Siew C. Schleyer
- 4309** High-Fat Diet-Induced Inflammation Accelerates Prostate Cancer Growth via IL6 Signaling
Takuji Hayashi, Kazutoshi Fujita, Satoshi Nojima, Yujiro Hayashi, Kosuke Nakano, Yu Ishizuya, Cong Wang, Yoshiyuki Yamamoto, Toshiro Kinouchi, Kyosuke Matsuzaki, Kentaro Jingushi, Taigo Kato, Atsunari Kawashima, Akira Nagahara, Takeshi Ujike, Motohide Uemura, Maria Del Carmen Rodriguez Pena, Jennifer B. Gordetsky, Eiichi Morii, Kazutake Tsujikawa, George J. Netto, and Norio Nonomura
- 4319** Targeting Galectin-1 Impairs Castration-Resistant Prostate Cancer Progression and Invasion
Tsung-Chieh Shih, Ruiwu Liu, Chun-Te Wu, Xiaocen Li, Wenwu Xiao, Xiaojun Deng, Sophie Kiss, Ting Wang, Xiao-Jia Chen, Randy Carney, Hsing-Jien Kung, Yong Duan, Paramita M. Ghosh, and Kit S. Lam
- 4332** A PDX/Organoid Biobank of Advanced Prostate Cancers Captures Genomic and Phenotypic Heterogeneity for Disease Modeling and Therapeutic Screening
Michael L. Beshiri, Caitlin M. Tice, Crystal Tran, Holly M. Nguyen, Adam G. Sowalsky, Supreet Agarwal, Keith H. Jansson, Qi Yang, Kerry M. McGowen, JuanJuan Yin, Aian Neil Alilin, Fatima H. Karzai, William L. Dahut, Eva Corey, and Kathleen Kelly

EDITOR'S NOTES

- 4346** Editor's Note: Capsaicin Is a Novel Blocker of Constitutive and Interleukin-6-Inducible STAT3 Activation
- 4347** Editor's Note: Guggulsterone Inhibits Osteoclastogenesis Induced by Receptor Activator of Nuclear Factor- κ B Ligand and by Tumor Cells by Suppressing Nuclear Factor- κ B Activation

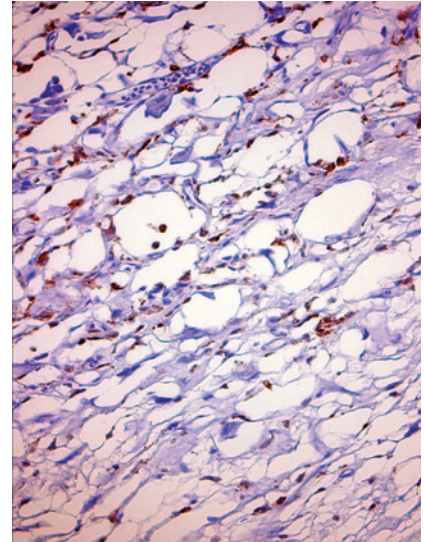
 AC icon indicates AuthorChoice
For more information please visit www.aacrjournals.org



Table of Contents

ABOUT THE COVER

The cover shows a section of a tumor biopsy from a child with teleangiectatic osteosarcoma. Immunohistochemical CD68 macrophage stain (brown) shows tumor-associated macrophages along septae in the tumor. For details, see article by Aghighi, Theruvath, and colleagues on page 4110.



Clinical Cancer Research

24 (17)

Clin Cancer Res 2018;24:4057-4347.

Updated version Access the most recent version of this article at:
<http://clincancerres.aacrjournals.org/content/24/17>

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/24/17>.
Click on "Request Permissions" which will take you to the Copyright Clearance Center's (CCC) Rightslink site.