

CLINICAL CANCER RESEARCH

TABLE OF CONTENTS

HIGHLIGHTS

- 521 Selected Articles from This Issue

SPECIAL FEATURES

CCR Translations

- 523 **Metformin in Gynecologic Cancers: Opening a New Window for Prevention and Treatment?**
Ainhoa Madariaga, Pamela J. Goodwin, and Amit M. Oza
See related articles, p. 581 and p. 632
- 526 **Metastatic Breast Cancer: TIL it is Too Late**
Peter Savas and Sherene Loi
See related article, p. 657
- 529 **Building on the Promise of Cancer Vaccines for Solid Tumors**
Craig L. Slingluff Jr
See related article, p. 588

CCR Drug Updates

- 532 **FDA Approval Summary: Tagraxofusp-erzs For Treatment of Blastic Plasmacytoid Dendritic Cell Neoplasm**
Emily Y. Jen, Xin Gao, Liang Li, Luning Zhuang, Natalie E. Simpson, Baikuntha Aryal, Rong Wang, Donna Przepiorka, Yuan Li Shen, Ruby Leong, Chao Liu, Christopher M. Sheth, Steven Bowen, Kirsten B. Goldberg, Ann T. Farrell, Gideon M. Blumenthal, and Richard Pazdur

Review

- 537 **Mutated RAS: Targeting the "Untargetable" with T Cells**
Praveen D. Chatani and James C. Yang

Perspectives

- 545 **Pan-Tumor Pathologic Scoring of Response to PD-(L)1 Blockade**
Julie E. Stein, Evan J. Lipson, Tricia R. Cottrell, Patrick M. Forde, Robert A. Anders, Ashley Cimino-Mathews, Elizabeth D. Thompson, Mohamad E. Allaf, Mark Yarchoan, Josephine Feliciano, Hao Wang, Elizabeth M. Jaffee, Drew M. Pardoll, Suzanne L. Topalian, and Janis M. Taube

CLINICAL TRIALS: TARGETED THERAPY


- 552 **Everolimus and Octreotide for Patients with Recurrent Meningioma: Results from the Phase II CEVOREM Trial**
Thomas Graillon, Marc Sanson, Chantal Campello, Ahmed Idbaih, Matthieu Peyre, Hadrien Peyrière, Noémie Basset, Didier Aufran, Catherine Roche, Michel Kalamarides, Pierre-Hugues Roche, Stéphane Fuentes, Emeline Tabouret, Maryline Barrie, Anita Cohen, Stéphane Honoré, Mohamed Boucekine, Karine Baumstarck, Dominique Figarella-Branger, Anne Barlier, Henry Dufour, and Olivier Louis Chinot
- 558 **Pilot Trial AMC-063: Safety and Efficacy of Bortezomib in AIDS-associated Kaposi Sarcoma**
Erin G. Reid, Adrienne Suazo, Shelly Y. Lensing, Dirk P. Dittmer, Richard F. Ambinder, Frank Maldarelli, Robert J. Gorelick, David Aboulafla, Ronald Mitsuyasu, Mark A. Dickson, and William Wachsmann; on behalf of the AIDS Malignancy Consortium (AMC)
- 566 **Potent Cell-Cycle Inhibition and Upregulation of Immune Response with Abemaciclib and Anastrozole in neoMONARCH, Phase II Neoadjuvant Study in HR⁺/HER2⁻ Breast Cancer**
 Sara A. Hurvitz, Miguel Martin, Michael F. Press, David Chan, Maria Fernandez-Abad, Edgar Petru, Regan Rostorfer, Valentina Guarneri, Chiun-Sheng Huang, Susana Barriga, Sameera Wijayawardana, Manisha Brahmachary, Philip J. Ebert, Anwar Hossain, Jiangang Liu, Adam Abel, Amit Aggarwal, Valerie M. Jansen, and Dennis J. Slamon

TABLE OF CONTENTS

581 Everolimus, Letrozole, and Metformin in Women with Advanced or Recurrent Endometrioid Endometrial Cancer: A Multi-Center, Single Arm, Phase II Study

Pamela T. Soliman, Shannon N. Westin, David A. Iglesias, Bryan M. Fellman, Ying Yuan, Qian Zhang, Melinda S. Yates, Russell R. Broaddus, Brian M. Slomovitz, Karen H. Lu, and Robert L. Coleman

See related commentary, p. 523

CLINICAL TRIALS: IMMUNOTHERAPY

588 A First-in-Human Phase I Study of INVAC-1, an Optimized Human Telomerase DNA Vaccine in Patients with Advanced Solid Tumors

Luis Teixeira, Jacques Medioni, Julie Garibal, Olivier Adotevi, Ludovic Doucet, Marie-Agnès Dragon Durey, Zineb Ghrieb, Jean-Jacques Kiladjian, Mara Brizard, Caroline Laheurte, Maria Wehbe, Elodie Pliquet, Marie Escande, Rémy Defrance, Stéphane Culine, Stéphane Oudard, Simon Wain-Hobson, Valérie Doppler, Thierry Huet, and Pierre Langlade-Demoyen

See related commentary, p. 529

598 Intratumoral Delivery of Plasmid IL12 Via Electroporation Leads to Regression of Injected and Noninjected Tumors in Merkel Cell Carcinoma

A C Shailender Bhatia, Natalie V. Longino, Natalie J. Miller, Rima Kulikauskas, Jayasri G. Iyer, Dafina Ibrani, Astrid Blom, David R. Byrd, Upendra Parvathaneni, Christopher G. Twitty, Jean S. Campbell, Mai H. Le, Sharron Gargosky, Robert H. Pierce, Richard Heller, Adil I. Daud, and Paul Nghiem

PRECISION MEDICINE AND IMAGING

608 Inactivating *NF1* Mutations Are Enriched in Advanced Breast Cancer and Contribute to Endocrine Therapy Resistance

A C Alex Pearson, Paula Proszek, Javier Pascual, Charlotte Fribbens, Monee K. Shamsher, Belinda Kingston, Ben O'Leary, Maria T. Herrera-Abreu, Rosalind J. Cutts, Isaac Garcia-Murillas, Hannah Bye, Brian A. Walker, David Gonzalez De Castro, Lina Yuan, Sabri Jamal, Mike Hubank, Elena Lopez-Knowles, Eugene F. Schuster, Mitch Dowsett, Peter Osin, Ashutosh Nerurkar, Marina Parton, Alicia F.C. Okines, Stephen R.D. Johnston, Alistair Ring, and Nicholas C. Turner

623 Validation of the OncoMasTR Risk Score in Estrogen Receptor-Positive/HER2-Negative Patients: A TransATAC study

A C Richard Buus, Ivana Sestak, Stephen Barron, Tony Loughman, Bozena Fender, Cesar Lopez Ruiz, Peter Dynoodt, Chan-Ju Angel Wang, Des O'Leary, William M. Gallagher, Mitch Dowsett, and Jack Cuzick

TRANSLATIONAL CANCER MECHANISMS AND THERAPY

632 Metformin Abrogates Age-Associated Ovarian Fibrosis

Curtis W. McCloskey, David P. Cook, Brendan S. Kelly, Feryel Azzi, Christian H. Allen, Amanda Forsyth, Jeremy Upham, Katey J. Rayner, Douglas A. Gray, Robert W. Boyd, Sangeeta Murugkar, Bryan Lo, Dominique Trudel, Mary K. Senterman, and Barbara C. Vanderhyden

See related commentary, p. 523

643 The Outcome of TGF β Antagonism in Metastatic Breast Cancer Models *In Vivo* Reflects a Complex Balance between Tumor-Suppressive and Proprogression Activities of TGF β

Yuan Yang, Howard H. Yang, Binwu Tang, Alex Man Lai Wu, Kathleen C. Flanders, Nellie Moshkovich, Douglas S. Weinberg, Michael A. Welsh, Jia Weng, Humberto J. Ochoa, Tiffany Y. Hu, Michelle A. Herrmann, Jinqiu Chen, Elijah F. Edmondson, R. Mark Simpson, Fang Liu, Huaitian Liu, Maxwell P. Lee, and Lalage M. Wakefield

657 Comprehensive Profiling of Poor-Risk Paired Primary and Recurrent Triple-Negative Breast Cancers Reveals Immune Phenotype Shifts

Katherine E. Hutchinson, Susan E. Yost, Ching-Wei Chang, Radia Marie Johnson, Adrian R. Carr, Paul R. McAdam, Daniel L. Halligan, Chun-Chieh Chang, Daniel Schmolze, Jackson Liang, and Yuan Yuan

See related commentary, p. 526

669 EGFL7 Antagonizes NOTCH Signaling and Represents a Novel Therapeutic Target in Acute Myeloid Leukemia

Marius Bill, Aparna Pathmanathan, Malith Karunasiri, Changxian Shen, Matthew H. Burke, Parvathi Ranganathan, Dimitrios Papaioannou, Nina C. Zitzer, Katiri Snyder, Allison LaRocco, Allison E. Walker, Zachary J. Brannan, Ansel P. Nalin, Aharon G. Freud, Mikhail M. Dikov, Xiaoli Zhang, Clara D. Bloomfield, Ramiro Garzon, and Adrienne M. Dorrance

679 Neoadjuvant PD-1 Immune Checkpoint Blockade Reverses Functional Immunodominance among Tumor Antigen-Specific T Cells

Jay Friedman, Ellen C. Moore, Paul Zolkind, Yvette Robbins, Paul E. Clavijo, Lilian Sun, Sarah Greene, Megan V. Morisada, Wojciech K. Mydlarz, Nicole Schmitt, James W. Hodge, Hans Schreiber, Carter Van Waes, Ravindra Uppaluri, and Clint Allen

TABLE OF CONTENTS

- 690** **Colony-Stimulating Factor 1 Receptor (CSF1R) Activates AKT/mTOR Signaling and Promotes T-Cell Lymphoma Viability**
Carlos Murga-Zamalloa, Delphine C.M. Rolland, Avery Polk, Ashley Wolfe, Hiran Dewar, Pinki Chowdhury, Ozlem Onder, Rajan Dewar, Noah A. Brown, Nathanael G. Bailey, Kedar Inamdar, Megan S. Lim, Kojo S.J. Elenitoba-Johnson, and Ryan A. Wilcox
- 704** **Cooperative Immune-Mediated Mechanisms of the HDAC Inhibitor Entinostat, an IL15 Superagonist, and a Cancer Vaccine Effectively Synergize as a Novel Cancer Therapy**
Kristin C. Hicks, Karin M. Knudson, Karin L. Lee, Duane H. Hamilton, James W. Hodge, William D. Figg, Peter Ordentlich, Frank R. Jones, Shahrooz Rabizadeh, Patrick Soon-Shiong, Jeffrey Schlom, and Sofia R. Gameiro
- 717** **Impact of Prior Bevacizumab Treatment on VEGF-A and PlGF Levels and Outcome Following Second-Line Aflibercept Treatment: Biomarker *Post Hoc* Analysis of the VELOUR Trial**
AC Eric Van Cutsem, Caroline Paccard, Marielle Chiron, and Josep Tabernero
- 726** **Comprehensive Transcriptome Profiling of Cryptic *CBFA2T3-GLIS2* Fusion-Positive AML Defines Novel Therapeutic Options: A COG and TARGET Pediatric AML Study**
Jenny L. Smith, Rhonda E. Ries, Tiffany Hylkema, Todd A. Alonzo, Robert B. Gerbing, Marianne T. Santaguida, Lisa Eidenschink Brodersen, Laura Pardo, Carrie L. Cummings, Keith R. Loeb, Quy Le, Suzan Imren, Amanda R. Leonti, Alan S. Gamis, Richard Aplenc, E. Anders Kolb, Jason E. Farrar, Timothy J. Triche Jr, Cu Nguyen, Daoud Meerzaman, Michael R. Loken, Vivian G. Oehler, Hamid Bolouri, and Soheil Meshinchi
- 738** **Evaluation of the Predictive Role of Tumor Immune Infiltrate in Patients with HER2-Positive Breast Cancer Treated with Neoadjuvant Anti-HER2 Therapy without Chemotherapy**
Carmine De Angelis, Chandandeep Nagi, Cliff C. Hoyt, Linying Liu, Kristin Roman, Chichung Wang, Yi Zheng, Jamunarani Veeraraghavan, Vidyalakshmi Sethunath, Paolo Nuciforo, Tao Wang, Anna Tsimelzon, Sufeng Mao, Susan G. Hilsenbeck, Meghana V. Trivedi, Maria Letizia Cataldo, Anne Pavlick, Antonio C. Wolff, Britta Weigelt, Jorge S. Reis-Filho, Aleix Prat, Carolina Gutierrez, Charles Kent Osborne, Mothaffar F. Rimawi, and Rachel Schiff
- 746** **MAP9 Loss Triggers Chromosomal Instability, Initiates Colorectal Tumorigenesis, and Is Associated with Poor Survival of Patients with Colorectal Cancer**
Shiyan Wang, Junzhe Huang, Chuangen Li, Liuyang Zhao, Chi Chun Wong, Jianning Zhai, Yunfei Zhou, Wen Deng, Yong Zeng, Shanshan Gao, Yanqian Zhang, Guoping Wang, Xin Yuan Guan, Hong Wei, Sunny H. Wong, Housheng H. He, Jerry W. Shay, and Jun Yu

CORRECTION

- 758** **Correction: Arming an Oncolytic Herpes Simplex Virus Type 1 with a Single-chain Fragment Variable Antibody against PD-1 for Experimental Glioblastoma Therapy**
Carmela Passaro, Quazim Alayo, Isabel DeLaura, John McNulty, Korneel Grauwet, Hirotaka Ito, Vivek Bhaskaran, Marco Mineo, Sean E. Lawler, Khalid Shah, Maria C. Speranza, William Goins, Eric McLaughlin, Soledad Fernandez, David A. Reardon, Gordon J. Freeman, E. Antonio Chiocca, and Hiroshi Nakashima

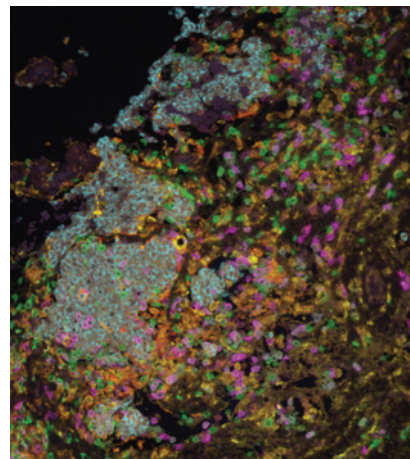
AC AC icon indicates AuthorChoice

For more information please visit www.aacrjournals.org

TABLE OF CONTENTS

ABOUT THE COVER

The cover shows increased intratumoral CD8 T-cell infiltration, accompanied by PD-1 and PD-L1 expression and loss of tumor cells, in a previously "cold" Merkel cell carcinoma (MCC) metastasis after intratumoral injection of interleukin-12 plasmid (tavo) followed by *in vivo* electroporation (EP). Resultant local inflammation from i.t.-tavo-EP led to systemic immune responses, with regression of noninjected MCC lesions in several patients. For details, see article by Bhatia et al on page 598 of this issue.



Clinical Cancer Research

26 (3)

Clin Cancer Res 2020;26:521-758.

Updated version Access the most recent version of this article at:
<http://clincancerres.aacrjournals.org/content/26/3>

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/26/3>.
Click on "Request Permissions" which will take you to the Copyright Clearance Center's (CCC) Rightslink site.