



## Highlights of This Issue 329

MCT FOCUS: DEVELOPMENTAL  
THERAPEUTICS IN RADIATION ONCOLOGY

- 332** Refining Radiation for the Next Century  
John S. Lazo
- 336** Lack of Constitutively Active DNA Repair Sensitizes Glioblastomas to Akt Inhibition and Induces Synthetic Lethality with Radiation Treatment in a p53-Dependent Manner  
Kamalakkannan Palanichamy, Disha Patel, John R. Jacob, Kevin T. Litzenberg, Nicolaus Gordon, Kirstin Acus, Shin-ei Noda, and Arnab Chakravarti
- 347** Identification of MEK162 as a Radiosensitizer for the Treatment of Glioblastoma  
Ravi S. Narayan, Ana Gasol, Paul L.G. Slangen, Fleur M.G. Cornelissen, Tonny Lagerweij, Hou Y.Y.E. Veldman, Rogier Dik, Jaap van den Berg, Ben J. Slotman, Tom Würdinger, Daphne A. Haas-Kogan, Lukas J.A. Stalpers, Brigitta G. Baumert, Bart A. Westerman, Jan Theys, and Peter Sminia
- 355** Exploiting Radiation-Induced Signaling to Increase the Susceptibility of Resistant Cancer Cells to Targeted Drugs: AKT and mTOR Inhibitors as an Example  
Iris Eke, Adeola Y. Makinde, Molykutty J. Aryankalayil, Veit Sandfort, Sanjeevani T. Palayoor, Barbara H. Rath, Lance Liotta, Mariaelena Pierobon, Emanuel F. Petricoin, Matthew F. Brown, Jayne M. Stommel, Mansoor M. Ahmed, and C. Norman Coleman
- 368** The Neddylation Inhibitor Pevonedistat (MLN4924) Suppresses and Radiosensitizes Head and Neck Squamous Carcinoma Cells and Tumors  
 Vanessa Vanderdys, Amir Allak, Fadila Guessous, Mouadh Benamar, Paul W. Read, Mark J. Jameson, and Tarek Abbas
- 381** Radiosensitization *In Vivo* by Histone Deacetylase Inhibition with No Increase in Early Normal Tissue Radiation Toxicity  
Blaz Groselj, Jia-Ling Ruan, Helen Scott, Jessica Gorrill, Judith Nicholson, Jacqueline Kelly, Selvakumar Anbalagan, James Thompson, Michael R.L. Stratford, Sarah J. Jevons, Ester M. Hammond, Cheryl L. Scudamore, Martin Kerr, and Anne E. Kiltie

- 393** Arginine Deprivation Therapy: Putative Strategy to Eradicate Glioblastoma Cells by Radiosensitization  
C. Noreen Hinrichs, Mirjam Ingargiola, Theresa Käubler, Steffen Löck, Achim Temme, Alvaro Köhn-Luque, Andreas Deutsch, Olena Vovk, Oleh Stasyk, and Leoni A. Kunz-Schughart
- 407** HMG-CoA Reductase Inhibition Delays DNA Repair and Promotes Senescence After Tumor Irradiation  
Elena V. Efimova, Natalia Ricco, Edwardine Labay, Helena J. Mauceri, Amy C. Flor, Aishwarya Ramamurthy, Harold G. Sutton, Ralph R. Weichselbaum, and Stephen J. Kron
- 419** A CRISPR/Cas9-Based Screening for Non-Homologous End Joining Inhibitors Reveals Ouabain and Penfluridol as Radiosensitizers  
Jie Du, Jun Shang, Fei Chen, Yushuo Zhang, Narui Yin, Ting Xie, Haowen Zhang, Jiahua Yu, and Fenju Liu
- 432** A Chemical Modulator of p53 Transactivation that Acts as a Radioprotective Agonist  
Akinori Morita, Ipppei Takahashi, Megumi Sasatani, Shin Aoki, Bing Wang, Shinya Ariyasu, Kaoru Tanaka, Tetsuji Yamaguchi, Akiko Sawa, Yurie Nishi, Tatsuhiro Teraoka, Shohei Ujita, Yosuke Kawate, Chihiro Yanagawa, Keiji Tanimoto, Atsushi Enomoto, Mitsuru Neno, Kenji Kamiya, Yasushi Nagata, Yoshio Hosoi, and Toshiya Inaba

## SMALL MOLECULE THERAPEUTICS

- 443** A Novel YAP1 Inhibitor Targets CSC-Enriched Radiation-Resistant Cells and Exerts Strong Antitumor Activity in Esophageal Adenocarcinoma  
 Shumei Song, Min Xie, Ailing W. Scott, Jiankang Jin, Lang Ma, Xiaochuan Dong, Heath D. Skinner, Randy L. Johnson, Sheng Ding, and Jaffer A. Ajani
- 455** Antitumor Activity of Entrectinib, a Pan-TRK, ROS1, and ALK Inhibitor, in *ETV6-NTRK3*-Positive Acute Myeloid Leukemia  
Kristen M. Smith, Patrick C. Fagan, Elena Pomari, Giuseppe Germano, Chiara Frasson, Colin Walsh, Ian Silverman, Paolo Bonvini, and Gang Li

# Table of Contents

- 464** **Inhibiting Nuclear Phospho-Progesterone Receptor Enhances Antitumor Activity of Onapristone in Uterine Cancer**  
Yan Huang, Wei Hu, Jie Huang, Fangrong Shen, Yunjie Sun, Cristina Ivan, Sunila Pradeep, Robert Dood, Monika Haemmerle, Dahai Jiang, Lingegowda S. Mangala, Kyunghee Noh, Jean M. Hansen, Heather J. Dalton, Rebecca A. Previs, Archana S. Nagaraja, Michael McGuire, Nicholas B. Jennings, Russell Broaddus, Robert L. Coleman, and Anil K. Sood

- 474** **COX-2/sEH Dual Inhibitor PTUPB Potentiates the Antitumor Efficacy of Cisplatin**  
Fuli Wang, Hongyong Zhang, Ai-Hong Ma, Weimin Yu, Maike Zimmermann, Jun Yang, Sung Hee Hwang, Daniel Zhu, Tzu-yin Lin, Michael Malfatti, Kenneth W. Turteltaub, Paul T. Henderson, Susan Airhart, Bruce D. Hammock, Jianlin Yuan, Ralph W. de Vere White, and Chong-Xian Pan

- 484** **Inhibition of O-GlcNAcase Sensitizes Apoptosis and Reverses Bortezomib Resistance in Mantle Cell Lymphoma through Modification of Truncated Bid**  
Sudjit Luanpitpong, Nawin Chanthra, Montira Janan, Jirarat Poohadsuan, Parinya Samart, Yaowalak U-Pratya, Yon Rojanasakul, and Surapol Issaragrisil

- 497** **Inhibition of MDM2 by a Rhein-Derived Compound AQ-101 Suppresses Cancer Development in SCID Mice**  
Lubing Gu, Hailong Zhang, Tao Liu, Alexander Draganov, Sha Yi, Binghe Wang, and Muxiang Zhou


- 508** **Mechanism-informed Repurposing of Minocycline Overcomes Resistance to Topoisomerase Inhibition for Peritoneal Carcinomatosis**  
Huang-Chiao Huang, Joyce Liu, Yang Baglo, Imran Rizvi, Sriram Anbil, Michael Pigula, and Tayyaba Hasan


## CANCER BIOLOGY AND TRANSLATIONAL STUDIES

- 521** **Molecular Basis for Necitumumab Inhibition of EGFR Variants Associated with Acquired Cetuximab Resistance**  
Atrish Bagchi, Jaafar N. Haidar, Scott W. Eastman, Michal Vieth, Michael Topper, Michelle D. Iacolina, Jason M. Walker, Amelie Forest, Yang Shen, Ruslan D. Novosiadly, and Kathryn M. Ferguson

- 532** **A Role for CXCR4 in Peritoneal and Hematogenous Ovarian Cancer Dissemination**  
Agnès Figueras, Elisenda Alsina-Sanchís, Álvaro Lahiguera, Manuel Abreu, Laura Muínelo-Romay, Gema Moreno-Bueno, Oriol Casanovas, Mariona Graupera, Xavier Matias-Guiu, August Vidal, Alberto Villanueva, and Francesc Viñals


## LARGE MOLECULE THERAPEUTICS


- 544**  **$\beta$ -Catenin mRNA Silencing and MEK Inhibition Display Synergistic Efficacy in Preclinical Tumor Models**  
 Shanthi Ganesh, Xue Shui, Kevin P. Craig, Martin L. Koser, Girish R. Chopda, Wendy A. Cyr, Chengjung Lai, Henryk Dudek, Weimin Wang, Bob D. Brown, and Marc T. Abrams

- 554** **Characterization of SGN-CD123A, A Potent CD123-Directed Antibody-Drug Conjugate for Acute Myeloid Leukemia**  
 Fu Li, May Kung Sutherland, Changpu Yu, Roland B. Walter, Lori Westendorf, John Valliere-Douglass, Lucy Pan, Ashley Cronkite, Django Sussman, Kerry Klussman, Michelle Ulrich, Martha E. Anderson, Ivan J. Stone, Weiping Zeng, Mechthild Jonas, Timothy S. Lewis, Maitrayee Goswami, Sa A. Wang, Peter D. Senter, Che-Leung Law, Eric J. Feldman, and Dennis R. Benjamin

- 565** **An Infrared Dye-Conjugated Virus-like Particle for the Treatment of Primary Uveal Melanoma**  
Rhonda C. Kines, Isabella Varsavsky, Sanghamitra Choudhary, Debaditya Bhattacharya, Sean Spring, Roger McLaughlin, Shin J. Kang, Hans E. Grossniklaus, Demetrios Vavvas, Stephen Monks, John R. MacDougall, Elisabet de los Pinos, and John T. Schiller

## MODELS AND TECHNOLOGIES

- 575** **The Novel Oncolytic Adenoviral Mutant Ad5-3 $\Delta$ -A20T Retargeted to  $\alpha$ v $\beta$ 6 Integrins Efficiently Eliminates Pancreatic Cancer Cells**  
 Y. K. Stella Man, James A. Davies, Lynda Coughlan, Constantia Pantelidou, Alfonso Blázquez-Moreno, John F. Marshall, Alan L. Parker, and Gunnel Halldén

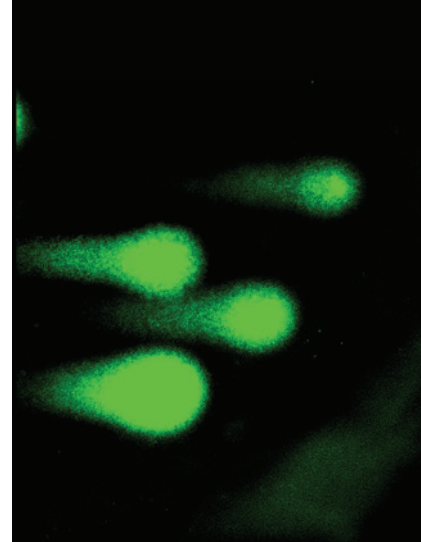
 **AC icon indicates AuthorChoice**  
For more information please visit [www.aacrjournals.org](http://www.aacrjournals.org)



# Table of Contents

## ABOUT THE COVER

By combined utilization of the CRISPR/Cas9 system and the high-resolution melting analysis, a screening strategy for non-homologous end joining (NHEJ) inhibitors has been established. One of the hits from a drug library containing 1540 compounds is ouabain, a cardiotonic and antipsychotic agent that has the capacity to restrain NHEJ activity. The frontpage shows the neutral comet assay of HeLa cells treated with X-ray in the presence of ouabain. For more details, see the article by Du and colleagues on page 419.



# Molecular Cancer Therapeutics

**17 (2)**

*Mol Cancer Ther* 2018;17:329-587.

**Updated version** Access the most recent version of this article at:  
<http://mct.aacrjournals.org/content/17/2>

**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://mct.aacrjournals.org/content/17/2>.  
Click on "Request Permissions" which will take you to the Copyright Clearance Center's (CCC) Rightslink site.