CANCER RESEARCH HIGHLIGHTS

6074  Targeting Mitochondrial Fission to Trigger Cancer Cell Death
V. Ashutosh Rao
See related article, p. 6215

6076  RadioGx: A New Preclinical Tool to Model Intrinsic Radiosensitivity
Daniel E. Spratt and Corey Speers
See related article, p. 6227

CONTROVERSY AND CONSENSUS

6079  E-Cigarettes: Unstandardized, Under-Regulated, Understudied, and Unknown Health and Cancer Risks
Ernest T. Hawk and Karen Colbert Maresso

GENOME AND EPIGENOME

6084  Epigenomic Profiling Discovers Trans-lineage SOX2 Partnerships Driving Tumor Heterogeneity in Lung Squamous Cell Carcinoma
Takashi Sato, Seungsueul Yoo, Ranrakong, Abhilasha Sinha, Prashanth Chandramani-Shivalingappa, Ayushi Patel, Maya Fridrikh, Osamu Nagano, Takashi Masuko, Mary Beth Beasley, Charles A. Powell, Jun Zhu, and Hideo Watanabe


6101  Histone-Related Genes Are Hypermethylated in Lung Cancer and Hypermethylated HIST1H4F Could Serve as a Pan-Cancer Biomarker
Shihua Dong, Wei Li, Lin Wang, Jie Hu, Yuanlin Song, Ruoong Zhang, Xiaoguang Ren, Shimeng Ji, Jin Li, Peng Xu, Ying Liang, Gang Chen, Jia-Tao Lou, and Wenzhang Yu

Significance: These findings identify a new biomarker for cancer detection and show that hypermethylated of histone-related genes seems to persist across cancers.

MOLECULAR CELL BIOLOGY

6113  Follistatin-like Protein 1 Inhibits Lung Cancer Metastasis by Preventing Proteolytic Activation of Osteopontin
Jean Chiotu, Yu-Chan Chang, Hsien-Fang Tsai, Yuan-Feng Lin, Ming-Shyan Huang, Chih-Jen Yang, and Michael Hsiao

Significance: These findings describe the novel interaction between FSTL1 and SPP1 and its role in the metastatic progression of lung adenocarcinoma.

6126  Mcl-1 Interacts with Akt to Promote Lung Cancer Progression
Guo Chen, Donglyoo Park, Andrew T. Magis, Madhusmita Behera, Suresh S. Ramalingam, Taofeek K. Osonikoko, Gabriel L. Sica, Kejiang Ye, Chao Zhang, Zhengjia Chen, Walter J. Curran, and Xingming Deng

Significance: These findings indicate that targeting Mcl-1/Akt interaction by employing small molecules such as PH-687 represents a potentially new and effective strategy for cancer treatment.

6139  MK5 Regulates YAP Stability and Is a Molecular Target in YAP-Driven Cancers
Jimmying Seo, Min Hwan Kim, Hyunwoo Hong, Hyunsoo Cho, Seongyeol Park, Sang Kyum Kim, and Joon Kim

Significance: These findings reveal MK5 is a novel kinase that regulates YAP in a LATS-independent manner and can be targeted for cancer therapy.
TUMOR BIOLOGY AND IMMUNOLOGY

6153 PGC1α Suppresses Prostate Cancer Cell Invasion through ERRα Transcriptional Control

Significance: These findings describe how downregulation of the prostate tumor suppressor PGC1 drives invasiveness and migration of prostate cancer cells.

TRANSLATIONAL SCIENCE

6166 A Novel MYCN-Specific Antigene Oligonucleotide Deregulates Mitochondria and Inhibits Tumor Growth in MYCN-Amplified Neuroblastoma
Luca Montemurro, Salvatore Raieli, Silvia Angelucci, Damiano Bartolucci, Camilla Amadesi, Silvia Lampis, Anna Lisa Scardovi, Leonardo Venturelli, Giammario Nieddu, Lucia Cerisoli, Matthias Fischer, Gabriella Teti, Mirella Falconi, Andrea Pession, Patrizia Hrelia, and Roberto Tonelli

Significance: A second generation antigene peptide oligonucleotide targeting MYCN induces mitochondrial damage and inhibits growth of MYCN-amplified neuroblastoma cells.

6178 A Microbial Siderophore-Inspired Self-Gelling Hydrogel for Noninvasive Anticancer Phototherapy
Seungheon Ko, Joo Yeon Park, and Yu-Kyoung Oh

Significance: These findings provide new insights into noninvasive anticancer phototherapy using self-gelling hydrogels. Application of these hydrogels in preclinical models reduces the sizes of solid tumors and skin cancers without surgery, radiation, or chemotherapy.

6190 Parallel Signaling through IRE1α and PERK Regulates Pancreatic Neuroendocrine Tumor Growth and Survival

Significance: The UPR is upregulated in pancreatic neuroendocrine tumors and its inhibition significantly reduces tumor growth in preclinical models, providing strong rationale for targeting the UPR in these cancers.

6204 YAP1 Mediates Resistance to MEK1/2 Inhibition in Neuroblastomas with Hyperactivated RAS Signaling
Grace E. Coggins, Alvin Farrel, Komal S. Rathi, Colin M. Hayes, Laura Scolaro, Jo Lynne Rokita, and John M. Maris

Significance: High-risk neuroblastomas with hyperactivated RAS signaling escape the selective pressure of MEK inhibition via YAP1-mediated transcriptional reprogramming and may be sensitive to combination therapies targeting both YAP1 and MEK.

6215 MFF Regulation of Mitochondrial Cell Death Is a Therapeutic Target in Cancer
Jae Ho Seo, Young Chan Chae, Andrew V. Kossenkov, Yu Geon Lee, Hsin-Yao Tang, Ekt Agarwal, Dmitry I. Gabrilovich, Lucia R. Languino, David W. Speicher, Prashanth K. Shastrula, Alessandra Maria Storaci, Stefano Ferrero, Gabriella Gaudioso, Manuela Caroli, Davide Tosi, Massimo Giroda, Valentina Vaira, Vito W. Rebecca, Meenhard Herlyn, Min Xiao, Dylan Fingerman, Alessandra Martorella, Emmanuel Skordalakes, and Dario C. Altieri

Significance: These findings describe mitochondrial fission regulation using a peptidomimetic agent that disturbs the MFF-VDAC complex and displays anticancer activity in multiple tumor models.

See related commentary, p. 6074

RESOURCE REPORTS

6227 Modeling Cellular Response in Large-Scale Radiogenomic Databases to Advance Precision Radiotherapy
Venkata SK. Manem, Meghan Lambie, Ian Smith, Petr Smirnov, Victor Kofia, Mark Freeman, Marianne Koritzinsky, Mohamed E. Abazeed, Benjamin Haibe-Kains, and Scott V. Bratman

Significance: The RadioGx computational platform enables integrative analyses of cellular response to radiation with drug responses and genome-wide molecular data.

See related commentary, p. 6076

6238 Comprehensive Benchmarking and Integration of Tumor Microenvironment Cell Estimation Methods
Alejandro Jiménez-Sánchez, Oliver Cast, and Martin L. Müller

Significance: This work shows an independent and comprehensive benchmarking of recently developed and widely used tumor microenvironment cell estimation methods based on bulk expression data and integrates the tools into a consensus approach.
ABOUT THE COVER

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