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5101 | Myeloid-Derived Suppressor Cell Inhibition of the IFN Response in Tumor-Bearing Mice

**Précis:** Findings reveal a key molecular determinant of resistance to platinum-based chemotherapy and poor clinical outcome in patients with epithelial ovarian cancers.

**Précis:** Findings illustrate the great importance of the interplay between clinical and laboratory-based research in responding rapidly to the inevitable problem of acquired resistance arising in the development of any new targeted treatment for cancer.

**Précis:** This study illustrates the great importance of the interplay between clinical and laboratory-based research in responding rapidly to the inevitable problem of acquired resistance arising in the development of any new targeted treatment for cancer.

**Précis:** Dynamic interactions between tumor cells and their host microenvironment are reflected by changes in the plasma proteome, offering new opportunities for cancer diagnosis.

**Précis:** Findings provide the first demonstration of the power law relation between the stiffness and the invasiveness of cancer cells and show that mechanical phenotypes, which are directly impacted by the state and architecture of the cytoskeleton, can be used to grade the metastatic potential of cell populations.

**Précis:** Myeloid derived suppressor cells blunt immune cell responsiveness to interferons by producing reactive nitrogen species, which attenuates interferon signaling in immune cells of tumor-bearing animals.
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Interleukin-1α Mediates the Antiproliferative Effects of 1,25-Dihydroxyvitamin D3 in Prostate Progenitor/Stem Cells
Sophia L. Maund, Wendy W. Barclay, Laura D. Hover, Linara S. Axanova, Guangchao Sui, Jason D. Hipp, James C. Fleet, Andrew Thorburn, and Scott D. Cramer

 précis: Supporting applications of vitamin D as a chemopreventative agent for prostate cancer, this study shows that the metabolically active form of vitamin D can induce differentiation and senescence of prostate progenitor/stem cells and that its antiproliferative effects rely upon interleukin-1 alpha.

PTEN Positively Regulates UVB-Induced DNA Damage Repair
Mei Ming, Li Feng, Christopher R. Shea, Keyoumars Soltani, Baozhong Zhao, Weinfong Han, Robert C. Smart, Carol S. Trempus, and Yu-Ying He

 précis: Findings explain how failure to repair DNA damage caused by UVB sunlight radiation can cause skin carcinogenesis, due to inactivation of the tumor suppressor PTEN that destroys its key gatekeeper function in supporting DNA repair in the skin.

IL-8 Signaling Plays a Critical Role in the Epithelial–Mesenchymal Transition of Human Carcinoma Cells
Romaine J. Fernando, Marianne D. Castillo, Mary Litzinger, Duane H. Hamilton, and Claudia Palena

 précis: Findings elucidate the role of epithelial-to-mesenchymal transition in the modulation of the tumor microenvironment, suggesting that IL-8 signaling blockades might be very effective at targeting invasive tumor cells.

ABCB5 Identifies a Therapy-Refractory Tumor Cell Population in Colorectal Cancer Patients
Brian J. Wilson, Tobias Schatton, Qian Zhan, Martin Gasser, Jie Ma, Karim R. Saab, Robin Schanche, Ana-Maria Waaga-Gasser, Jason S. Gold, Qin Huang, George F. Murphy, Markus H. Frank, and Natasha Y. Frank

 précis: Findings point to the need to eradicate a particular tumor cell population to improve outcomes in colorectal cancer therapy.

Cancer Stem Cells in Squamous Cell Carcinoma Switch between Two Distinct Phenotypes That Are Preferentially Migratory or Proliferative
Adrian Biddle, Xiao Liang, Luke Gammon, Bilal Fazil, Lisa J. Harper, Helena Emich, Daniela Elena Costea, and Ian C. Mackenzie

 précis: Findings suggest that cancer stem cells can switch their phenotype between two states that can either drive tumor cell proliferation or metastatic dissemination, implying a need for therapeutic approaches that are able to eradicate cancer stem cells in both states.

ADP-Ribosylarginine Hydrolase Regulates Cell Proliferation and Tumorigenesis
Jiro Kato, Jianfeng Zhu, Chengyu Liu, Mario Stylianou, Victoria Hoffmann, Martin J. Lizak, Connie G. Glasgow, and Joel Moss

 précis: Findings point to an important role for posttranslational protein modification by ADP-ribosylation in supporting cell proliferation and tumorigenesis.

Sequential Activation of Snail1 and N-Myc Modulates Sonic Hedgehog–Induced Transformation of Neural Cells
Leah E. Colvin Wanshura, Katherine E. Galvin, Hong Ye, Martin E. Fernandez-Zapico, and Cynthia Wetmore

 précis: N-Myc activation by a key target of the Sonic Hedgehog signaling pathway may be an essential step information of an aggressive class of pediatric brain tumors, with implications for therapeutic targeting strategies.

Microvesicles Released from Human Renal Cancer Stem Cells Stimulate Angiogenesis and Formation of Lung Premetastatic Niche
Cristina Grange, Marta Tapparo, Federica Collino, Loriane Vitillo, Christian Damasco, Maria Chiara Deregibus, Ciro Tetta, Benedetta Bussolati, and Giovanni Camussi

 précis: Cancer stem cells may promote metastatic progression by secreting a class of microvesicles known as exosomes that can transfer proangiogenic RNAs to endothelial cells and directly stimulate angiogenesis.
LETTERS TO THE EDITOR

5357  MicroRNA Expression and Outcome in Resected NSCLC—Letter
Shun-ichiro Kageyama, Yusuke Takagi, Takeshi Sawada, Natsuko Kageyama-Yahara, and Masahiko Shibuya

5358  MicroRNA Expression and Outcome in Resected NSCLC—Response
Johannes Voortman, Aaron J. Schetter, Curtis C. Harris, and Giuseppe Giaccone

CORRECTIONS

5360  Correction: Effects of Carbon Ion Beam on Putative Colon Cancer Stem Cells and Its Comparison with X-rays

5361  Correction: A Requirement of STAT3 DNA Binding Precludes Th-1 Immunostimulatory Gene Expression by NF-κB in Tumors

ABOUT THE COVER

The search for biomarkers of cancer has focused on the tumor cells themselves. Pitteri and colleagues, using an unbiased and in depth proteomic analysis of plasma from a model of Her2/neu driven breast cancer, have identified the signaling between the tumor cells and microenvironment as a primary source of biomarkers. Shown are tumor cells embedded within extensive extracellular collagen matrix stained with trichrome blue. For details, see the article by Pitteri and colleagues on page 5090 of this issue.
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