

PERSPECTIVES

- 775 | **Altered Histology Provides a Positive Clinical Signal in the Bronchial Epithelium**
Eva Szabo
See article by Keith et al., p. 793
- 779 | **Cotargeting Cyclin D1 Starts a New Chapter in Lung Cancer Prevention and Therapy**
Edward S. Kim, J. Jack Lee, and Ignacio I. Wistuba
See article by Dragnev et al., p. 818
- 783 | **Biomarkers in Exploring the Frontiers of Diagnosis, Prognosis, and Therapy of Barrett's Esophagus**
Patrick Yachinski and Richard M. Peek Jr.
See article by Sinicrope et al., p. 829

COMMENTARY

- 787 | **Cancer Interception**
Elizabeth H. Blackburn

RESEARCH ARTICLES

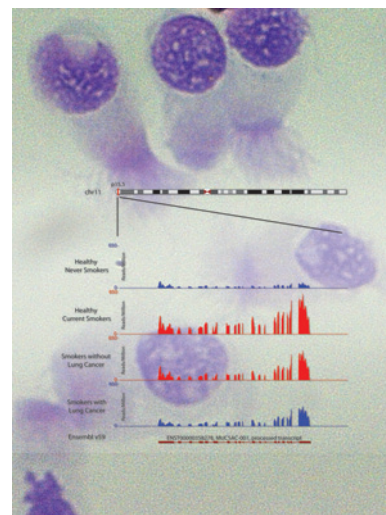
- 793 | **Oral Iloprost Improves Endobronchial Dysplasia in Former Smokers**
Robert L. Keith, Patrick J. Blatchford, John Kittelson, John D. Minna, Karen Kelly, Pierre P. Massion, Wilbur A. Franklin, Jenny Mao, David O. Wilson, Daniel T. Merrick, Fred R. Hirsch, Timothy C. Kennedy, Paul A. Bunn Jr., Mark W. Geraci, and York E. Miller
See perspective p. 775
- 803 | **Characterizing the Impact of Smoking and Lung Cancer on the Airway Transcriptome Using RNA-Seq**
Jennifer Beane, Jessica Vick, Frank Schembri, Christina Anderlind, Adam Gower, Joshua Campbell, Lingqi Luo, Xiao Hui Zhang, Ji Xiao, Yuriy O. Alekseyev, Shenglong Wang, Shawn Levy, Pierre P. Massion, Marc Lenburg, and Avrum Spira

- 818 | **Bexarotene Plus Erlotinib Suppress Lung Carcinogenesis Independent of KRAS Mutations in Two Clinical Trials and Transgenic Models**
Konstantin H. Dragnev, Tian Ma, Jobin Cyrus, Fabrizio Galimberti, Vincent Memoli, Alexander M. Busch, Gregory J. Tsongalis, Marc Seltzer, David Johnstone, Cherie P. Erkmen, William Nugent, James R. Rigas, Xi Liu, Sarah J. Freemantle, Jonathan M. Kurie, Samuel Waxman, and Ethan Dmitrovsky
See perspective p. 779
- 829 | **Evaluation of Difluoromethylornithine for the Chemoprevention of Barrett's Esophagus and Mucosal Dysplasia**
Frank A. Sinicrope, Russell Broaddus, Nina Joshi, Eugene Gerner, Elizabeth Half, Ilan Kirsch, Jan Lewin, Bruce Morlan, and Waun Ki Hong
See perspective p. 783
- 840 | **Hormonal Factors and Risks of Esophageal Squamous Cell Carcinoma and Adenocarcinoma in Postmenopausal Women**
Clara Bodelon, Garnet L. Anderson, Mary Anne Rossing, Rowan T. Chlebowski, Heather M. Ochs-Balcom, and Thomas L. Vaughan
- 851 | **CYLD Inhibits Tumorigenesis and Metastasis by Blocking JNK/AP1 Signaling at Multiple Levels**
Paula Miliani de Marval, Shazia Lutfeali, Jane Y. Jin, Benjamin Leshin, M. Angelica Selim, and Jennifer Y. Zhang
- 860 | **Zerumbone Induces Heme Oxygenase-1 Expression in Mouse Skin and Cultured Murine Epidermal Cells through Activation of Nrf2**
Jun-Wan Shin, Kohta Ohnishi, Akira Murakami, Jeong-Sang Lee, Joydeb Kumar Kundu, Hye-Kyung Na, Hajime Ohgashi, and Young-Joon Surh
- 871 | **Helicobacter pylori Prevalence and Circulating Micronutrient Levels in a Low-Income United States Population**
Meira Epplein, Lisa B. Signorello, Wei Zheng, Qiuyin Cai, Margaret K. Hargreaves, Angelika Michel, Michael Pawlita, Jay H. Fowke, Pelayo Correa, and William J. Blot

- 879 **Targeting p53-Null Neuroblastomas through RLIP76**
Jyotsana Singhal, Sushma Yadav, Lokesh Dalasanur Nagaprashantha, Rit Vatsyayan, Sharad S. Singhal, and Sanjay Awasthi
- 890 **Results from a Dose-Response Study Using 3,3'-Diindolylmethane in the K14-HPV16 Transgenic Mouse Model: Cervical Histology**
Daniel W. Sepkovic, Johann Stein, Antoine D. Carlisle, H. Barbara Ksieski, Karen Auburn, Laura Raucci, Themba Nyirenda, and H. Leon Bradlow
- 897 **Garlic Constituent Diallyl Trisulfide Suppresses X-linked Inhibitor of Apoptosis Protein in Prostate Cancer Cells in Culture and *In Vivo***
Su-Hyeong Kim, Ajay Bommareddy, and Shivendra V. Singh
- 907 **Chemoprevention of Intestinal Polyps in *Apc*^{Min/+} Mice Fed with Western or Balanced Diets by Drinking Annurca Apple Polyphenol Extract**
Lucia Fini, Giulia Piazzi, Yahya Daoud, Michael Selgrad, Shinji Maegawa, Melissa Garcia, Vincenzo Fogliano, Marco Romano, Giulia Graziani, Paola Vitaglione, Susanne W. Carmack, Antonio Gasbarrini, Robert M. Genta, Jean-Pierre Issa, C. Richard Boland, and Luigi Ricciardiello
- 916 **Clonal Structure of Carcinogen-Induced Intestinal Tumors in Mice**
Andrew T. Thliveris, Linda Clipson, Alanna White, Jesse Waggoner, Lauren Plesh, Bridget L. Skinner, Christopher D. Zahm, Ruth Sullivan, William F. Dove, Michael A. Newton, and Richard B. Halberg
- 924 **Chemoprevention of Azoxy methane/Dextran Sodium Sulfate-Induced Mouse Colon Carcinogenesis by Freeze-Dried Yam *Sanyaku* and its Constituent Diosgenin**
Noriyuki Miyoshi, Tomoki Nagasawa, Ryota Mabuchi, Yumiko Yasui, Keiji Wakabayashi, Takuji Tanaka, and Hiroshi Ohshima
- 935 **Melanoma Prevention Using Topical PBISE**
Chin-Ying Chung, SubbaRao V. Madhunapantula, Dhimant Desai, Shantu Amin, and Gavin P. Robertson

ABOUT THE COVER

The cover features an image of RNA sequencing (RNA-Seq) results for a processed transcript of the mucin 5AC gene (*MUC5AC*, foreground), a potentially important smoking- and lung cancer-related gene. The output is superimposed on an image of human ciliated columnar bronchial epithelial cells obtained by endoscopic brushings of the mainstem bronchi (100X, modified Wright-Giemsa stain). The *MUC5AC* read coverage plot displays reads aligning to the transcript normalized by the total number of reads on the y-axis versus the genomic coordinates on the x-axis. The *MUC5AC* processed transcript shows marked upregulation in healthy current smokers compared with never smokers and downregulation in smokers with lung cancer compared with smokers having benign lung disease. The detection of *MUC5AC* expression highlights the advantage of RNA-Seq because the transcript is not annotated in RefSeq and there are no probes on the Affymetrix Exon 1.0 ST microarray to interrogate it. RNA-Seq is one of several cutting-edge next-generation sequencing platforms producing tremendous advances in the biology of cancer and premalignancy that promise to lead to new, effective approaches for cancer therapy and prevention. See articles by Beane et al. (beginning on page 803) and Blackburn (beginning on page 787) for more information.



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4 (6)

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