

Table of Contents

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COMMENTARY

- 735** **AACR White Paper: Shaping the Future of Cancer Prevention – A Roadmap for Advancing Science and Public Health**
Scott M. Lippman, Cory Abate-Shen, Karen L. Colbert Maresso, Graham A. Colditz, Andrew J. Dannenberg, Nancy E. Davidson, Mary L. Disis, Raymond N. DuBois, Eva Szabo, Anna R. Giuliano, William N. Hait, J. Jack Lee, Thomas W. Kensler, Barnett S. Kramer, Paul Limburg, Anirban Maitra, Maria Elena Martinez, Timothy R. Rebbeck, Kathryn H. Schmitz, Eduardo Vilar, and Ernest T. Hawk

RESEARCH ARTICLES

- 779** **Longer-term Lipid-lowering Drug Use and Risk of Incident and Fatal Prostate Cancer in Black and White Men in the ARIC Study**
Alison M. Mondul, Corinne E. Joshi, John R. Barber, Anna E. Prizment, Nrupen A. Bhavsar, Elizabeth Selvin, Aaron R. Folsom, and Elizabeth A. Platz
- 789** **Circulating Receptor Activator of Nuclear Factor- κ B (RANK), RANK ligand (RANKL), and Mammographic Density in Premenopausal Women**
Adetunji T. Toriola, Catherine M. Appleton, Xiaoyu Zong, Jingqin Luo, Katherine Weilbaecher, Rulla M. Tamimi, and Graham A. Colditz
- 797** **Dietary Tomato Powder Inhibits High-Fat Diet–Promoted Hepatocellular Carcinoma with Alteration of Gut Microbiota in Mice Lacking Carotenoid Cleavage Enzymes**
Hui Xia, Chun Liu, Cheng-Chung Li, Maobin Fu, Shingo Takahashi, Kang-Quan Hu, Koichi Aizawa, Suganuma Hiroyuki, Guojun Wu, Liping Zhao, and Xiang-Dong Wang

- 811** **Quality of Life in a Randomized Breast Cancer Prevention Trial of Low-Dose Tamoxifen and Fenretinide in Premenopausal Women**
Davide Serrano, Sara Gandini, Aliana Guerrieri-Gonzaga, Irene Feroce, Harriet Johansson, Debora Macis, Valentina Aristarco, Bernardo Bonanni, and Andrea DeCensi
- 819** **Evidence for Chemopreventive and Resilience Activity of Licorice: *Glycyrrhiza Glabra* and *G. Inflata* Extracts Modulate Estrogen Metabolism in ACI Rats**
 Shuai Wang, Tareisha L. Dunlap, Lingyi Huang, Yang Liu, Charlotte Simmler, Daniel D. Lantvit, Jenna Crosby, Caitlin E. Howell, Huali Dong, Shao-Nong Chen, Guido F. Pauli, Richard B. van Breemen, Birgit M. Dietz, and Judy L. Bolton
- 831** **Comparison of Effects of Diet on Mammary Cancer: Efficacy of Various Preventive Agents and Metabolomic Changes of Different Diets and Agents**
Ronald A. Lubet, Richard D. Beger, Mark Steven Miller, John Luster, Harold E. Seifried, and Clinton J. Grubbs
- 841** **Comparison of Performance Between a Short Categorized Lifestyle Exposure-based Colon Cancer Risk Prediction Tool and a Model Using Continuous Measures**
Ying Liu, Graham A. Colditz, Bernard A. Rosner, Hank Dart, Esther Wei, and Erika A. Waters



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Table of Contents

ABOUT THE COVER

Primary liver cancer (hepatocellular carcinoma, HCC) is on the rise in the United States, where it continues to increase in both incidence and death rate. Since there is no effective treatment for HCC, it is important to understand how whole foods rich in phytochemicals and natural chemicals found in plants, can protect against the development of HCC. In the current study, the chemopreventive effects of dietary tomato powder rich in lycopene was investigated in a diethylnitrosamine initiated and high fat diet-promoted HCC mouse model. The cover shows the histological section of a HCC from the liver of a male mice (H&E staining) in the absence of lycopene cleavage enzymes. The tomato powder feeding significantly decreased HCC incidence, multiplicity, and tumor volume independent of lycopene cleavage enzymes. The protection provided by tomato powder feeding was associated with the inhibition of inflammatory cytokines, inductions of hepatic sirtuin 1 deacetylase and circadian clock genes and improved gut microbial richness and diversity. The present study provides new insights into the mechanisms underlying the beneficial effect of tomato and tomato products against cancer development.

