

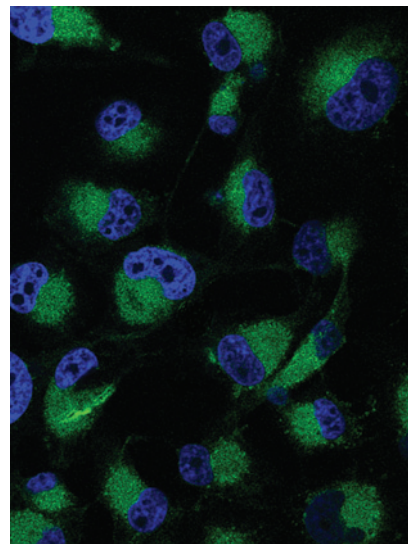
RESEARCH ARTICLES

- 201** **Thermally Abused Frying Oil Potentiates Metastasis to Lung in a Murine Model of Late-Stage Breast Cancer**
Anthony Cam, Ashley B. Oyirifi, Yunxian Liu, Wanda M. Haschek, Urszula T. Iwaniec, Russell T. Turner, Nicki J. Engeseth, and William G. Helderich
- 211** **Testing Novel Pyrimidinyl Rexinoids: A New Paradigm for Evaluating Rexinoids for Cancer Prevention**
Di Zhang, Ana S. Leal, Sarah Carapellucci, Pritika H. Shahani, Jaskaran S. Bhogal, Samir Ibrahim, San Raban, Peter W. Jurutka, Pamela A. Marshall, Michael B. Sporn, Carl E. Wagner, and Karen T. Liby
- 225** **Chitosan Encapsulation Enhances the Bioavailability and Tissue Retention of Curcumin and Improves its Efficacy in Preventing B[a]P-induced Lung Carcinogenesis**
Vinod Vijayakurup, Arunkumar T. Thulasidasan, Mohan Shankar G, Archana P. Retnakumari, C. Devika Nandan, Jannet Somaraj, Jayesh Antony, Vijai V. Alex, Balachandran S. Vinod, Vijayasteltar Belsamma Liju, Sankar Sundaram, G. S. Vinod Kumar, and Ruby John Anto
- 237** **A Prospective Targeted Serum Metabolomics Study of Pancreatic Cancer in Postmenopausal Women**
Li Jiao, Suman Maity, Cristian Coarfa, Kimal Rajapakshe, Liang Chen, Feng Jin, Vasanta Putluri, Lesley F. Tinker, Qianxing Mo, Fengju Chen, Subrata Sen, Haleh Sangi-Hyghpeykar, Hashem B. El-Serag, and Nagireddy Putluri
- 247** **Alcohol-metabolizing Enzymes' Gene Polymorphisms and Susceptibility to Multiple Head and Neck Cancers**
Huei-Tzu Chien, Chi-Kuang Young, Tzu-Ping Chen, Chun-Ta Liao, Hung-Ming Wang, Sou-De Cheng, and Shiang-Fu Huang
- 255** **JAK3 Variant, Immune Signatures, DNA Methylation, and Social Determinants Linked to Survival Racial Disparities in Head and Neck Cancer Patients**
Rafael Guerrero-Preston, Fahcina Lawson, Sebastian Rodriguez-Torres, Maartje G. Noordhuis, Francesca Pirini, Laura Manuel, Blanca L. Valle, Tal Hadar, Bianca Rivera, Oluwasina Folawiyo, Adriana Baez, Luigi Marchionni, Wayne M. Koch, William H. Westra, Young J. Kim, James R. Eshleman, and David Sidransky
- 271** **Acceptability of Localized Cancer Risk Reduction Interventions Among Individuals at Average or High Risk for Cancer**
Goli Samimi, Brandy M. Heckman-Stoddard, Shelley S. Kay, Bonny Bloodgood, Kisha I. Coa, Jennifer L. Robinson, Bethany Tennant, Leslie G. Ford, Eva Szabo, and Lori Minasian

Table of Contents

ABOUT THE COVER

Recent reports indicate a high correlation between fast food intake and lung cancer incidence. Benzo[a]pyrene (B[a]P) is a potent carcinogen abundantly present in grilled and deep-fried food and in tobacco smoke. Efficacy of curcumin, a known dietary chemopreventive agent, in B[a]P-induced lung carcinogenesis is well established. However, the poor pharmacokinetic profile of the compound hampers its potential for clinical use. A study by Anto and colleagues (beginning on page 225) demonstrates that encapsulation of curcumin in chitosan nanoparticles improves cell uptake and prolongs tissue retention of curcumin, thereby increasing the compound's chemopreventive activity. Bioavailability studies using healthy Swiss albino mice showed drastic enhancement in lung localization of chitosan nanocurcumin compared to free curcumin. Toxicologic evaluation confirmed the pharmacologic safety of the formulation, which, even at a dose equivalent to one-fourth that of free curcumin, exhibited higher efficacy in reducing tumor incidence and multiplicity than free curcumin. These results underscore the supremacy of chitosan–curcumin formulation over free curcumin and establish its potential as an oral supplement to prevent B[a]P- and other environmental carcinogen-induced cancers. The cover image depicts intracellular uptake of chitosan nanocurcumin (equivalent to 25 μ M curcumin) in H1299 lung cancer cells.



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