Cancer Prevention Research

Table of Contents

March 2015 • Volume 8 • Number 3

REVIEW

181 Garlic and Onions: Their Cancer Prevention Properties
Holly L. Nicastro, Sharon A. Ross, and John A. Milner

RESEARCH ARTICLES

190 Long-term Persistence of Oral Human Papillomavirus Type 16: The HPV Infection in Men (HIM) Study

197 Prevention of Tumor Growth Driven by PIK3CA and HPV Oncogenes by Targeting mTOR Signaling with Metformin in Oral Squamous Carcinomas Expressing OCT3

208 Involvement of Epigenetics and EMT-Related miRNA in Arsenic-Induced Neoplastic Transformation and Their Potential Clinical Use
Christina Michailidis, Masamichi Hayashi, Sayantant Datta, Tanusree Sen, Kaitlyn Zerger, Thomas E. Carey, Jonathan B. McHugh, Evgeny Izumchenko, Alexander Baras, Christopher Vandenberg, Maria Argos, Trinity J. Bivalacqua, Habibul Ahsan, Noah M. Hahn, George J. Netto, David Sidransky, and Mohammad Obaidul Hoque

222 A Phase IIa Randomized, Double-Blind Trial of Erlotinib in Inhibiting Epidermal Growth Factor Receptor Signaling in Aberrant Crypt Foci of the Colorectum

231 Lack of Effect of Metformin on Mammary Carcinogenesis in Nondiabetic Rat and Mouse Models
Matthew D. Thompson, Clinton J. Grubbs, Ann M. Bode, Joel M. Reid, Renee McGovern, Philip S. Bernard, Inge J. Stijleman, Jeffrey E. Green, Christina Bennett, M. Margarita Julian, Fariba Moeinpour, Verner E. Steele, and Ronald A. Lubet

240 Urinary ADAM12 and MMP-9/NGAL Complex Detect the Presence of Gastric Cancer
Takaya Shimura, Adelle Dagher, Monisha Sachdev, Masahide Ebi, Tamaki Yamada, Tomonori Yamada, Takashi Joh, and Marsha A. Moses

249 The Heat Shock Protein 90 Inhibitor, (-)-Epigallocatechin Gallate, Has Anticancer Activity in a Novel Human Prostate Cancer Progression Model
Michael A. Moses, Ellen C. Henry, William A. Ricke, and Thomas A. Gasiewicz
ABOUT THE COVER

Interest in the use of metformin as a potential chemopreventive/therapeutic agent has increased over the last few years based on epidemiologic studies suggesting that diabetics taking this drug compared with those taking sulfonylurea or insulin have a lower incidence of cancer. Metformin acts by increasing levels of activated AMP-activated protein kinase (AMPK) and decreasing circulating insulin growth factor-1, which suggests efficacy in cancer prevention and therapy. In this study, two different animal models were used to evaluate the effects of metformin administration on mammary cancer growth. Metformin was ineffective in decreasing mammary cancer multiplicity, latency, or weight in either ER\(^+\) or ER\(^-\) animal models. Metformin induced increases in phosphorylated AMPK and p53 but had little effect on any other biomarker, including phosphorylated Akt (cover image) and failed to reduce the proliferation index or expression of proliferation-related genes. This lack of efficacy in commonly used mammary cancer models is somewhat disconcerting. Overall, metformin did not prevent mammary cancer development in these two models, which raises questions about metformin efficacy in breast cancer in nondiabetic populations. See the article by Thompson et al. (beginning on page 231) for more information. (Staining was performed by Alyssa Langfald, The Hormel Institute, University of Minnesota.)