



Dear Colleague,

Welcome to the fall issue of *Nutrition Frontiers*, a quarterly newsletter from the Nutritional Science Research Group, Division of Cancer Prevention, NCI. Emerging research on vitamin D, black raspberries and cancer prevention is highlighted, along with outstanding scientists, upcoming events and a recent Star from the Stars in Nutrition & Cancer lecture series.

RESEARCH UPDATE: ON THE CLINICAL FRONT

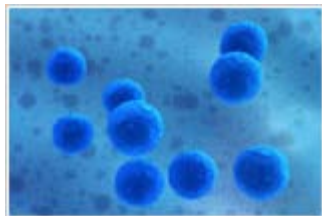
Black Raspberries May Modulate Colorectal Tumor Development

Not only are they tasty and loaded with anthocyanins, black raspberries (BRB) may modulate colorectal tumor development. In a pilot study by [Wang and colleagues](#) in which 20 colorectal cancer patients consumed 60 g/day BRB powder for an average of 4 weeks, tumor and adjacent normal specimen biopsies revealed BRBs protectively modulated biomarkers of cell proliferation, apoptosis, angiogenesis, and Wnt pathway. BRBs increased the expression of Wnt-related tumor suppressor genes, including SFRP2 and WIF1 by epigenetic events. BRBs also decreased the expression of oncogenes, such as β -catenin. These preliminary data warrant additional long-term studies of BRBs for colorectal cancer treatment and prevention.



RESEARCH UPDATE: WHAT'S NEW IN BASIC SCIENCE

Vitamin D Upregulates Interleukin-1 α in Prostate Stem Cells



A new study sheds light on how vitamin D modulates prostate stem cell differentiation, proliferation, and senescence. [Maund and colleagues](#) performed microarray analyses of control and vitamin D3-treated adult prostate progenitor/stem cells, revealing

global gene expression consistent with induction of differentiation. Further, interleukin-1 α (IL-1 α) was found to be a critical component for the antiproliferative effects of vitamin D3 in prostate stem cells. The knockdown of IL-1 α expression abolished vitamin D3-induced growth suppression in

Upcoming Events

November 29-30, 2011

[Using Nanotechnology to Improve Nutrition through Enhanced Bioavailability and Efficacy](#)

Bethesda, MD

Live viewing of the event is underway and will be available on event [website](#).

December 02, 2011

NCI's Frontiers in Nutrition and Cancer Prevention Online CME Series, [Vitamin D and Cancer Prevention: Shining Light on the Current Research](#)

December 13-14, 2011

[Improving Food Safety Through One Health](#), Institute of Medicine, Washington, DC

February 22, 2012

[A Workshop on the Human Microbiome, Diet, and Health](#), Institute of Medicine, Washington, DC

March 12-16, 2012

[Nutrition and Cancer Prevention Research Practicum](#), application deadline December 2011

Quick Links

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these cells. Ultimately, these findings may pave the way for the development of mechanism-based chemoprevention strategies for prostate cancer.

- [Division of Cancer Prevention](#)
- [National Cancer Institute](#)

SPOTLIGHT: JIN-RONG ZHOU



Jin-Rong Zhou, PhD received his PhD in Nutritional Sciences from the University of Illinois at Urbana-Champaign followed by postdoctoral training at Beth Israel Deaconess Medical Center/Harvard Medical School and a National Research Service Award from National Institutes of Health. Dr. Zhou is currently an Associate Professor in the Department of Surgery at Harvard Medical School and the Director of Nutrition/Metabolism

Laboratory at Beth Israel Deaconess Medical Center. Dr. Zhou's research priority is to identify bioactive dietary and nutritional components for the prevention and treatment of chronic diseases, such as cancer and obesity/diabetes, and to elucidate the cellular and molecular mechanisms of action of bioactive components. He was awarded a R21 for his project titled, [Targeting Prostate Cancer Stem Cells to Delay Prostate Cancer Progression](#).

[Read more »](#)

SPOTLIGHT: MARGOT CLEARY

Margot P. Cleary, MS, PhD is a Professor at the Hormel Institute, University of Minnesota. She received her PhD in Nutritional Biochemistry from Columbia University. Dr. Cleary was one of the first to identify the adipokine, leptin, as a possible growth factor directly linking obesity to breast cancer. Her interests include the impact of chronic versus intermittent calorie restriction and cancer prevention. Dr. Cleary's latest research is investigating the impact of calorie restriction in prevention of mammary tumors in an obese mouse model. Her newly awarded R01, [Prevention of Mammary Tumors by Metformin in Comparison to Calorie Restriction](#), will compare the effects of calorie restriction to metformin treatment on the prevention of mammary tumor development in relation to body weight status, lean, overweight and obesity.



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DID YOU KNOW?

The Little Green Nut is a Powerhouse



Pistachios are the nut highest in antioxidants. The green color in pistachios comes mostly from lutein - higher in pistachios than any other nut. Did you know, a one ounce serving is 49 pistachios, more nuts per serving than any other! And in that one serving, you obtain about as much fiber as from a 1/2 cup cooked broccoli and a whopping 300 mg of potassium, the equivalent of an orange. This holiday season, savor and enjoy the little green nut!

[STARS IN NUTRITION & CANCER](#)



View Dr. Max Wicha's recent lecture, *Chemoprevention using Dietary Components to Target Cancer Stem Cells*. [View lecture](#) to learn the role of stem cells in breast cancer, how stem cell regulation pathways may be regulated by curcumin and sulforaphane, and how nutritional interventions may be a more realistic approach to breast cancer prevention.

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- [Fall 2010](#)
- [Summer 2010](#)
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- [Winter 2010](#)

References:

<http://www.foodreference.com/html/t-pistachio-nuts.html>

<http://www.thegreennut.org>

Wu X, et al. J Agric Food Chem. 2004.52:4026-4037.

Sincerely,

Your friends at the Nutritional Science Research Group

Division of Cancer Prevention
National Cancer Institute
National Institutes of Health
U.S. Department of Health & Human Services

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