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## NUTRITION | FRONTIERS

A newsletter of the Nutritional Science Research Group

Fall 2010

Volume 1, Issue 4

### Dear Colleague,

Welcome to the Fall issue of **Nutrition Frontiers**, a quarterly newsletter from the Nutritional Science Research Group (NSRG), Division of Cancer Prevention, NCI. In this issue, find out about the benefits of green tea polyphenols for men with prostate cancer, how cruciferous vegetables work to suppress cancer cells, NCI nutrition grants and much more.

#### RESEARCH UPDATE: ON THE CLINICAL FRONT

The latest research indicates not all men who drink green tea can equally gain the cancer preventative benefits of green tea polyphenols. In men with prostate cancer, Wang et al.

[\(Cancer Prev Res 2010;8:985\)](#)

detected methylated and nonmethylated forms of the green tea polyphenol, EGCG, in prostate tissue following a short-term green tea intervention. An *in vitro* study indicated that the capacity of the methylated form to inhibit proliferation was decreased significantly compared with nonmethylated EGCG. This research suggests that individual's genetic polymorphisms, which determine the degrees of EGCG methylation, may influence the chemopreventive effect of green tea on prostate cancer cells. *This study was supported by an NCI award.*



#### RESEARCH UPDATE: WHAT'S NEW IN BASIC SCIENCE

#### NCI NUTRITION GRANTS: 2008 TO 2009



Based on data from the Human Nutrition Research and Information Management system database, between 2008 and 2009, the number of NCI nutrition grants increased from 491 to 608, a 24% increase. Research Project Grants (R01s) increased by 9%, Exploratory/ Developmental Grants (R21s) increased by 40% and Program Project Grants (P01s) more than doubled. *For more information about NCI/NIH funding, go to <http://hnrnim.nih.gov>.*

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#### Upcoming Events

March 14-18, 2011  
Nutrition & Cancer Prevention  
[Research Practicum](#)  
Bethesda, MD  
Application deadline 12/31/2010

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#### Quick Links



Recent research may give us insight as to how *Brassica* cruciferous vegetables, specifically isothiocyanates, protect against cancer. Based on the premise that benzyl isothiocyanate (BITC) in

cruciferous vegetables induces apoptosis in pancreatic cancer cells, Batra and colleagues ([Mol Cancer Ther 2010;9:1596](#)) evaluated the effects of this compound on NF- $\kappa$ B, which is constitutively activated in pancreatic cancer. BITC was shown to inhibit the expression and activity of HDAC1 and HDAC3, the histone deacetylases known to regulate NF- $\kappa$ B/p65. Additionally, BITC also caused the induction of p21<sup>WAF1</sup>, a cell cycle inhibitor. These results may explain how cruciferous vegetables lead to growth suppression of pancreatic cancer cells by regulating multiple mechanisms.

#### SPOTLIGHT: A CLINICIAN

Qi Dai, MD, PhD is an Assistant Professor in the Vanderbilt Epidemiology Center, Department of Medicine, Vanderbilt-Ingram Cancer Center. Dr. Dai tests novel hypotheses related to cancer etiology and prevention of molecular epidemiologic studies and personalized interventional trials. His particular focus is on the interactions of genetic polymorphisms with nutrients and phytochemicals. Dr. Dai earned his medical degree from the Shanghai Medical University (currently Fudan University), his PhD in Epidemiology from the University of South Carolina and he completed postdoctoral training at Vanderbilt University. He was awarded an R01 for his project titled, [Personalized Prevention of Colorectal Cancer](#).



[Read more »](#)

#### SPOTLIGHT: A BASIC SCIENTIST

- [Funding Opportunities](#)
- [CRTA Fellowship in NSRG](#)
- [NSRG Factsheets](#)
- [Nutritional Science Research Group](#)
- [Division of Cancer Prevention](#)
- [National Cancer Institute](#)

#### *Stars in Nutrition & Cancer*

View October 4, 2010 lecture

Dr. Stephen Barnes

[Soy and Cancer: Wish You Were Young Again](#)

#### [Nutrition Frontiers Newsletter](#)

Past Issues

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



**Sidney S. Mirvish, PhD** is a Professor at the Eppley Institute for Research in Cancer and Allied Diseases at the University of Nebraska Medical Center, where he has served 40 years in the Departments of Biochemistry, Molecular Biology, and Pharmaceutical Sciences. Dr. Mirvish is most known for his

research in the field of N-nitroso compounds. Dr. Mirvish earned a Bachelor and Master of Science from the University of Cape Town in South Africa and completed a PhD in Organic Chemistry at the University of Cambridge in England. He was recently awarded a R01 project, [\*N-nitroso compounds \(NOC\) in Processed Meat as a Likely Cause of Colorectal Cancer\*](#).

[Read more »](#)

#### SPOTLIGHT: FIRST CANCER RESEARCH TRAINING AWARD (CRTA)



Welcome to our first CRTA Fellow! **Holly Nicastro**, comes to the NSRG, DCP, NCI from the University of California, Berkeley, where she graduated with a PhD in Molecular and Biochemical Nutrition and studied the anti-tumorigenic effects of DIM in breast cancer cells. Dr. Nicastro was valedictorian of the College of

Health and Human Development at Penn State, where she received her undergraduate degree. As a CRTA fellow, she will work on projects related to how specific genes and molecular targets are influenced by nutrients. Holly also will evaluate opportunities and challenges for nutrition and cancer prevention by funding mechanism. Go to [CRTA](#) for more information about this fellowship.

#### DID YOU KNOW?

##### *Ancient Herbal Wines the Way to Go?*



What does an ancient Egypt (ca. 3150 B.C.) herbal grape wine from the tomb of one of the country's first pharaohs

(Scorpion I) and a rice wine from an upper-class tomb at the

*site of Changzikou in the Yellow River valley (ca. 1050 B.C.)  
have in common?*

Anticancer compounds. These ancient wines had herbal additives and the most active compounds, Isoscopoletin, Artemisinin, and Artesunate, show *in vitro* activity against lung and colon cancers.

*International Journal of Oncology 2010;37: 5-14.*

**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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