



Progress in Longevity Medicine Seminar Series

Complementary & Alternative Medicine and Prostate Cancer: New Perspectives on the Actions of DHEA and Lycopene

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Date/Time: Friday, April 13, 2007; 5:30 pm (dinner included)

Location: The Arizona Club, 201 N. Central Ave., 37th Floor

Cost: Free

Abstract: Prostate cancer is one of the four most common cancers in the US, affecting one out of six men. Dihydrotestosterone (DHT) and testosterone (T) stimulate prostate cancer cell growth, development and function, whereas the effects of DHT and T in prostate stromal cells and of DHEA in prostate cancer or stromal cells are uncertain. Our current investigation focuses on the effects of selected androgenic (DHEA), estrogenic or other dietary supplements and/or natural products on neoplastic epithelial and stromal cell growth, gene expression and biochemical function, including cell-cell signaling and intracellular signal transduction pathways.

As a precursor to both estrogen and testosterone, DHEA excess may pose a potential cancer risk in hormone-responsive tissues such as the prostate. Both stromal and epithelial cells are involved in prostate response to DHEA; thus, we have investigated effects of DHEA on epithelial and stromal cells grown separately and in co-culture.

We found that lycopene, in dietary concentrations, decreased prostate epithelial cell (PREC) IGF-I production, promoted 6S-mediated NPE cell apoptosis and arrested NPE growth induced by IGF-I by reducing AR and beta-catenin nuclear localization, and by attenuating IGF-I's effects on serine phosphorylation of Akt and GSK3beta, and tyrosine phosphorylation of GSK3. We hypothesize that DHEA exerts minimal effects in the normal prostate, whereas in cancer-associated tissues, the stromal microenvironment promotes prostate proliferation in the presence of DHEA via stromal metabolism to androgenic metabolites and induction of secondary growth factors.

Objectives:

- To provide an overview of complementary and alternative medicine (CAM) as well as opportunities and challenges in research in CAM.
- To discuss the effects of DHEA and lycopene in human prostate cancer-derived epithelial and stromal cells.
- To comment on approaches to studying the effects of other natural products in prostate cancer.

(More)

Biography: Dr. Blackman joined the National Center on Complementary and Alternative Medicine (NIH) in 2001 and is currently Chief of the Endocrine Section for the Laboratory of Clinical Investigation, Division of Intramural Research. He is also part-time Professor of Medicine at the Johns Hopkins University School of Medicine where he has served over 20 years as a full-time faculty member. He was previously Chief of the Division of Endocrinology and Metabolism as well as the Program Director of the General Clinical Research Center at Johns Hopkins Bayview Medical Center.

Dr. Blackman is a member of the National Advisory Committee for the Endocrinology of Aging Biology of Aging Program (NIA, NIH) and is on the Board of Advisors for the Foundation for Better Health Care. Dr. Blackman has published more than 330 journal articles, books, chapters and abstracts and is ad hoc reviewer for several journals including *Journal of Gerontology*, *Endocrinology* and *American Journal of Physiology*.

Dr. Blackman received his undergraduate degree from Northeastern University, his medical degree from New York University School of Medicine and trained in Internal Medicine at the Bronx Municipal Hospital Center, Albert Einstein College of Medicine. He went on to clinical and research fellowship training in Endocrinology and Metabolism at the National Institute of Diabetes & Digestive & Kidney Diseases, NIH. His present research focus is on the effects of age-associated alterations in the growth hormone and gonadal steroid axes on body composition, endocrine-metabolic, cardiovascular, immunologic, musculoskeletal and psychobehavioral functions in healthy and frail older persons.

To RSVP or for additional information, please contact Diana Vuong at (602) 778-7492 or via email at Diana.Vuong@kronosinstitute.org.

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