



Progress in Longevity Medicine Seminar Series

**Pycnogenol® , a Dietary Supplement with
Antioxidant and Cardioprotective Activities**

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Date/Time: Friday, November 10, 2006; 5:30 pm (dinner included)

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

Cost: Free

Abstract: The readily available dietary supplements in the United States offers people many non-traditional, CAM (complementary and alternative therapies), most of which have little or no scientific testing. Pycnogenol®, a pine bark extract containing antioxidant bioflavonoids has been tested in more than 50 clinical trials. We have shown that Pycnogenol® lowered hypertension and we continue to test its benefits in hypertensive diabetic patients. Others have shown it lowered cholesterol and other risk factors for heart disease. Therefore we tested its benefits in an animal model of heart failure, prior to any human trials.

Pycnogenol® has been reported to mediate a number of beneficial effects in the cardiovascular system but its effects on hemodynamic and functional cardiovascular changes following cardiac remodeling have not been elucidated. Pycnogenol® is a standardized extract from the bark of French maritime pine (*Pinus pinaster*), composed of a mixture of flavonoids, mainly procyanidins and phenolic acids. Therefore, we investigated the influence of Pycnogenol® supplementation (30mg/kg) on left ventricular systolic and diastolic function and myocardial extracellular matrix composition in a mouse model of cardiac remodeling induced by chronic inhibition of nitric oxide (NO) synthesis by NG-nitro-L-arginine methyl ester (L-NAME) administration. L-NAME treated mice demonstrated dilated cardiomyopathy at compensated state, associated with a significant increase of pro-matrix metalloproteinase (MMP)-9 gene expression and activity, a marked decrease in pro-collagen III α 1 gene expression, and a subsequent reduction in cardiac total and cross-linked collagen content.

Based upon these animal data and the extensive human data, Pycnogenol® should benefit people with inflammatory diseases such as osteoarthritis (OA). Therefore we did an initial study in people with OA, the most prevalent form of arthritis.

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Previous studies have shown the inhibitory effect of Pycnogenol® on matrix metalloproteinases (MMPs) and inducible nitric oxide synthase (iNOS), both involved in pathology of OA, and also on cyclooxygenase enzymes, COX-1 and COX-2, the pro-inflammatory mediators. After two months of Pycnogenol® supplementation, significant reduction in WOMAC pain and physical function scores and composite WOMAC index were observed in the Pycnogenol® group compared to the placebo group, coincided with significant reduction in the monthly intake of NSAIDs and COX-2 inhibitor pills, in both number of pills and number of days compared to the baseline.

Objectives

- CAM – what is it and how can its efficacy in patient care be determined
- Pycnogenol® – what is it and how might it be used in treatment of hypertension
- Pine bark extracts – role of bioflavonoids as anti-inflammatories in therapy of asthma

Biography: Dr. Watson is professor of Health Promotion Sciences at the University of Arizona, Health Science Center and a member of the University of Arizona Sarver Heart Center. He has been a professor at the University of Arizona since 1982 and has served as the Center and Scientific Director of the National Institute on Alcohol Abuse and Alcoholism Research Center, University of Arizona. As well as the University of Arizona, Dr. Watson also held teaching positions at Purdue University and Indiana University.

Dr. Watson's research includes antioxidant nutrients and aging, and Pycnogenol® in the reduction of cardiac risk factors. His research has also included oxidation and antioxidants and how they slow immunosenescence and heart dysfunction in seniors, the effects of a plant extract on lowering hypertension in diabetics, and immunomodulation and cardiovascular structure and function.

Dr. Watson has published over 35 peer-reviewed papers in the areas of murine immunology and cardiac function, as well as melatonin. Dr. Watson earned a bachelor's of science degree in Chemistry from Brigham Young University and received his doctorate of philosophy in Biochemistry from Michigan State University in 1971. He also fulfilled his post doctoral appointment in the field of Microbiology and Immunology at Harvard University in 1973.

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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