

December 4, 2008  
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**FOR IMMEDIATE RELEASE**

### **Novel Biological Activity of OPCs — MASQUELIER's® Original OPCs Found to Delay Aging of Blood Vessels**

*December 4, 2008* — New research shows a potential novel biological activity of oligomeric proanthocyanidins. As present in MASQUELIER's® Original OPCs, this complex phytonutrient was shown to delay aging in human vascular endothelial cells. The effect on what is technically called 'senescence' is possibly due to reducing DNA damage and oxidative stress.

The results of the research project, *A Potential Role for Oligomeric Proanthocyanidins (OPCs) in delaying Senescence in Endothelial Cells*, were presented by International Nutrition Company's Dr. Geetha Achanta at the 15<sup>th</sup> Annual Meeting of the Society for Free Radical Biology and Medicine, held from November 19 to 23 in Indianapolis. The study was performed under supervision of Dr. Jan Andries Post at the Center for Cellular Architecture and Dynamics Department of the University of Utrecht in the Netherlands.

Compared to blood vessels in healthy people, blood vessels of people in the early stages of atherosclerosis or who are otherwise at risk for developing this disease, show a greater number of aged endothelial cells. This suggests that endothelial cell senescence might be associated with an increased risk for developing atherosclerosis. In the present research project it has been shown that MASQUELIER's® Original OPCs may influence this risk factor.

Dr. Achanta, comments: "Atherosclerosis and the associated cardiovascular complications constitute the leading cause of death in the Western hemisphere. Smokers, hypertensives and the elderly are especially at risk. Aging of the vasculature has been associated with endothelial dysfunction, impaired angiogenesis and enhanced occurrence of atherosclerosis. The MASQUELIER's® OPCs used in this study has been shown in our previous investigations to exhibit strong antioxidant activity. The findings from the current study suggest a novel biological activity for the product: delaying endothelial cell senescence. We are currently attempting to further elucidate the mechanisms by which the product delays endothelial cell senescence, which would provide a firm basis for testing its potential application in reducing risk of cardiovascular diseases."

Arteries are lined on the inner side by a single, continuous layer of cells called endothelial cells. These endothelial cells have been found in laboratory experiments to undergo a finite number of cell divisions, after which growth halts. This phenomenon is called replicative cellular senescence and is suggested to occur *in vivo* with ageing of blood vessels. Senescence in endothelial cells also occurs upon exposure to oxidative stress, a phenomenon referred to as stress-induced premature senescence (SIPS). Interestingly, current research has shown that

there is an increase in number of senescent cells in arteries of human subjects that are at risk of developing atherosclerosis, suggesting that delaying endothelial cell senescence might decrease the risk of developing atherosclerosis.

In the study, MASQUELIER's<sup>®</sup> Original OPCs, a well characterized dietary supplement from *Vitis vinifera* seeds rich in specific oligomeric proanthocyanidins, was found to markedly delay the onset of replicative senescence in human endothelial cells cultured in the laboratory, using several established tests for assessing senescence. Additionally, the ingredient was also found to effectively delay SIPS caused by exposure to rotenone, a chemical substance that is known to generate oxidative stress.

Interestingly, the ability of MASQUELIER's<sup>®</sup> OPCs to delay senescence was associated with a decrease in the levels of a marker of DNA damage and DNA terminal ends (gamma-H2AX), suggesting that the possible molecular mechanism by which OPCs delay senescence in endothelial cells is through reduction in DNA damage. This hypothesis is supported by observations made in other research studies, showing that extent of DNA damage and levels of gamma-H2AX increase as cells progress to senescence. Reducing levels of DNA damage could therefore delay cellular senescence.

In previous investigations performed at Utrecht University it has been shown to significantly protect human LDL from oxidation, further supporting a potential application for this product in reducing risk of atherosclerosis.

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For more info on MASQUELIER's<sup>®</sup> Original OPCs (ANTHOGENOL<sup>®</sup>), contact *i.BioCeuticals'* (*i.BC*), Heidi Senecal at 508-240-5773 or at [heidi@ibioceticals.com](mailto:heidi@ibioceticals.com) when in North America, or contact International Nutrition Company's Pim Schwitters at 00 31 (0)35 6550088 or at [p.schwitters@inc-opc.com](mailto:p.schwitters@inc-opc.com).