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THE REPORT

LOOK, FEEL AND LIVE BETTER



Improving Endothelial Health

Exploring Pycnogenol®'s Mighty Role for
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Manager of Scientific
Communications/Product
Development



PYCNOGENOL®

Centellicum®

Pycnogenol® Improves Endothelial Health

Exploring Pycnogenol®'s Mighty Role for the Cardiovascular System

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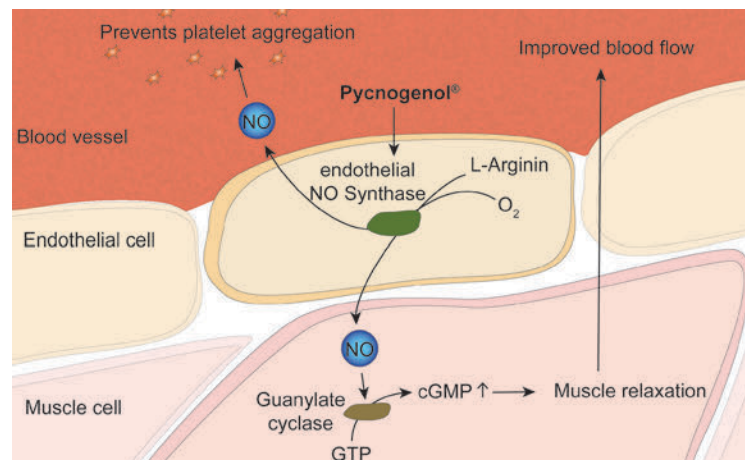
A healthy cardiovascular system is key to maintain vitality, physical strength, and general wellbeing. All blood vessels in the cardiovascular system are lined with the endothelium - a thin layer of endothelial cells. This does not only serve as a simple delimitation of the vessel wall, but it also significantly involves many physiological functions. The main mediator molecule nitric oxide (NO) is formed in the endothelium. NO contributes to optimal blood flow by relaxing blood vessels when needed. In addition, NO helps prevent platelet aggregation and thus reduces the risk of thrombosis (1). In addition, the endothelium regulates the exchange of substances between blood and tissues. When aging or facing health problems such as high blood pressure, atherosclerosis or diabetes, the ability of the endothelium to produce NO fades away. In addition, the ability of blood vessels to react to NO can decrease (2, 3). This can lead to a chronic narrowing of blood vessel, which impairs blood flow, increases blood pressure, and raises the risk of thrombosis. Therefore, the endothelial system is key to the entire organism.

Pycnogenol® induces NO production in the endothelium

Pycnogenol®, the original extract from the bark of the French maritime pine as part of a healthy lifestyle, can significantly improve endothelial health. Many different studies have shown that Pycnogenol® has a positive effect on endothelial functions, normalizes blood pressure and reduces the tendency of blood platelets to aggregate. An increas-

ing number of clinical studies prove the effectiveness of Pycnogenol® in keeping endothelial health problems at bay (4-10).

Pycnogenol® can increase the endothelial NO synthesis from the precursor molecule L-arginine by stimulating the endothelial NO synthase (eNOS). As a result, the blood vessel lumen is normalized and adequate tissue blood flow is ensured (4, 5). It was found that a metabolite of Pycnogenol® enters endothelial cells by facilitated absorption where it concentrates and can thus exert an anti-inflammatory effect directly in the endothelium (6).



feature story continued

Many studies show beneficial effects of Pycnogenol® on the endothelium

In patients with coronary artery disease, the effect of Pycnogenol® on endothelial function was investigated by measuring “flow-mediated dilation” in the upper arm artery (7). For this method, the expansion of the artery in response to an increase in the shear stress associated with blood flow is measured. An 8-week randomized, placebo-controlled, crossover, double-blind study showed an improvement in flow-mediated dilation by 32% in the Pycnogenol® group, while it deteriorated slightly in the placebo patients.

In another 12-week, randomized, placebo-controlled, double-blind study with high blood pressure patients who were taking the antihypertensive drug nifedipine (a calcium channel blocker), the blood levels of endothelin 1 (a signaling molecule responsible for constricting blood vessels) were significantly reduced by 20% in the Pycnogenol® group (8) to reach healthy levels. In contrast, the concentrations of a vasodilator molecule (6-keto prostaglandin F1a) were increased to normal levels in Pycnogenol® patients in contrast to placebo patients. This is a clear indication of an improved endothelial function.

A third placebo-controlled double-blind study reported similar effects in type II diabetes patients with high blood pressure who took antihypertensive drugs (ACE inhibitors) together with 125 mg Pycnogenol® per day for 3 months (9). In this case, the endothelin-1 values in the blood were reduced to a healthy amount by 17.8%, while they were hardly changed in the placebo group.

In patients with borderline high blood pressure, high blood lipid levels and increased blood sugar levels, the flow-mediated dilation improved significantly after 8 and 12 weeks of Pycnogenol® intake (10). These studies confirm the positive effects of taking Pycnogenol® on endothelial function in patients with cardiovascular diseases.

Additional health promoting properties of Pycnogenol®

In this context, additional health-promoting effects from regular Pycnogenol® intake have been observed in numerous studies. Pycnogenol® has been shown to improve the microcirculation (11-15), to lower platelet aggregation by increasing endothelial NO production (16, 17) and to have strong anti-inflammatory effects (18-20).

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For more information visit www.pycnogenol.com

product spotlight

Solution for Menopausal Women

Peak Time manufactured by ChongKunDang Healthcare in Korea was designed to provide a total care solution for menopausal women.

Active ingredients in the formula include 100mg of Pycnogenol® and Vitamin D to support bone health. Pycnogenol®'s super antioxidant properties provide key health benefits to women including during menopause by managing symptoms including hot flashes, fatigue, mood swings and night sweats. It supports vascular relaxation, which enables the body to release excess body heat, mitigating the sensation of hot flashes and nighttime sweating women experience while undergoing menopause transition. And finally, the extract supports healthy blood circulation by increasing vasodilation of blood vessels, thus improving blood flow and helping to reduce blood clots.

Peak Time is available in a convenient powder form and approved by MFDS, the Korean Ministry of Food and Drug Safety.



A Superior Product by Dynveo

Dynveo® introduces **Pycnogenol® Ultra Pur**, a superior product capable of supporting many aspects of vascular health.

Developed in France, **Ultra Pur** is available in two strengths, a 50mg or 100mg Pycnogenol® capsule. Decades of research on the extract for cardiovascular health has shown it improves blood microcirculation, including for cognitive health, by increasing capillary permeability. It supports protection of blood vessels by improving circulation and provides protection of vascular walls. Studies have also shown Pycnogenol®'s potent antioxidant properties shield cells from free radicals, and have notable effects on edema, thrombosis, skin, and others.

The product is backed by Dynveo® purity guarantee. Take one capsule to two capsules per day for optimal results.



Probiotic Blend Food Supplement by Sincolir

Vitamin Center introduces **Sincolir**, a probiotic blend food supplement designed to support digestive functions.

Launched in Italy, **Sincolir** is a dual capsule formula based on a probiotic blend to promote the natural balance of the intestinal flora and is enriched with plant extracts to support digestive functions. Each probiotic capsule contains probiotic bacteria Bifidobacterium bifidum (MIM Bb75 activ). The plant extract capsule consists of 100mg of Pycnogenol® for optimal antioxidant function, chamomile extract for gastrointestinal motility along with soothing action for the digestive system, and peppermint, which promotes digestive function.

The unique package contains two blisters of 10 capsules. The green blister contains plant extracts and the blue blister contains probiotics. Take one capsule of probiotics (white - blue blister) on a full stomach and one capsule of extracts (brown - green blister) between meals with water or other beverage of your choice.



Celtiva Pycnogenol® offers health benefits

Newly launched **Celtiva** Pycnogenol® supports menopausal health and offers an array of antioxidant health benefits.

One **Celtiva** tablet contains 60 mg of Pycnogenol®, a daily dose backed by clinical studies on women going through menopause. Multiple studies show Pycnogenol® reduces "climacteric symptoms" such as hot flashes, nighttime sweating, depression, panic attacks as well as other common symptoms associated with women entering perimenopause and menopause transition. As a potent antioxidant, the extract helps fight harmful free radicals to help avoid cell damage and inflammation.

The formula is available for purchase online through the **Celtiva** website.



new research | corporate announcements



Pycnogenol® Helps Ease Fibromyalgia Symptoms

A peer-reviewed pilot study published in *Panminerva Medica* demonstrated that Pycnogenol® may support the reduction of symptoms associated with fibromyalgia, including fatigue, migraines, and stiffness. The extract also significantly reduced oxidative stress and the need for analgesics. Results showed that daily

supplementation with 150mg of Pycnogenol® for four weeks provided an improvement of significant symptoms, including a 54% decrease in the number of subjects with stiffness, a 54% reduction in the number of individuals with fatigue and a 58% reduction in the number of subjects with widespread discomfort.

Pycnogenol® Retains Skin Moisture and Elasticity

Published in *Skin Pharmacology Physiology*, a peer-reviewed, randomized, double-blind, placebo-controlled crossover study showed Pycnogenol® significantly retains skin hydration, increases skin elasticity, and reinforces skin barrier function for those exposed to urban environmental pollution, as well as seasonal temperature and humidity variations. Additionally, the study found the extract to be effective at increasing skin lightening during seasonal changes when dark spots can emerge. Results showed that daily supplementation with 100mg of Pycnogenol®

for 12 weeks from April to July, during the wet season, provided a striking improvement of significant skin concerns, including a 7% improvement in skin elasticity and 7% improvement in skin firmness. During Phase 2 of the study, from July to October (the dry season) 100mg of Pycnogenol® daily showed a 13.8% increase in skin lightening, a 14% decrease in transepidermal water loss (TEWL), indicating a significant improvement of skin barrier function, and a 13% improvement in skin elasticity and skin firmness.

Pycnogenol® Provides Relief from Recurrent UTIs

Researchers found that Pycnogenol® outperformed cranberry extract in reducing infection occurrence and improving symptoms from recurrent urinary tract infections (UTIs), without side effects. This peer-reviewed, open pilot registry study published in *Evidence-Based Complementary and Alternative Medicine*, found

after 2 months of taking 150mg of Pycnogenol® daily, the number of urinary tract infection/interstitial cystitis episodes was reduced by 62%. 100% of participants showed infection-free urine, 91% were symptom-free, and there was an 11% decrease in oxidative stress.

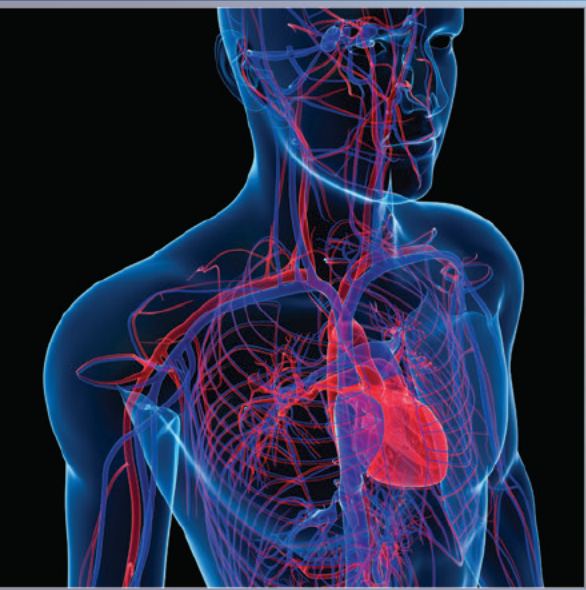


WELCOME Dr. Franziska Weichmann!

Franziska Weichmann, PhD, recently joined Horphag Research as a member of the technical and scientific team as Manager of Scientific Communications and Product Development. Her key contributions include writing and supervising publications of research papers and reviews for scientific journals and handling research-related communications for Horphag's branded ingredients. Dr. Weichmann is instrumental in managing the extensive bibliography for the company's ingredient portfolio and contributing to customer support, advising on synergistic product combinations and innovative application areas.

Prior to joining Horphag Research, she worked at the University of Regensburg, Germany during her PhD in Biochemistry with her thesis focusing on researching molecular composition of ribonucleic acid (RNA) and specific proteins and the role they play in human body cells. Dr. Weichmann holds Bachelor and Master of Science degrees from the University of Regensburg and a PhD in Biochemistry.

Please join us in welcoming Franziska to our team! She can be contacted at franziska.weichmann@horphag.com



Improving Endothelial Health

welcome

Our Geneva office and US colleagues are buzzing with energy after participating in person at Vitafoods and the recent SupplySide West trade show in Las Vegas. Greeting customers, partners and media attendees was extra rewarding after the travel and in-person pause of the last 18 months. If we missed seeing you, we look forward to meeting in the new year.

Pycnogenol® has been studied in various applications, but none have been covered as extensively as cardiovascular health. In this issue, we are excited to shed light on promising new research and its relation to endothelial health.

Best Regards,

Victor Ferrari
Chief Executive Officer
Horphag Research

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Pycnogenol®, French maritime pine bark extract, is a registered trademark of Horphag Research Ltd and is protected by U.S. patents #5,720,956 and #6,372,266 and other international patents.