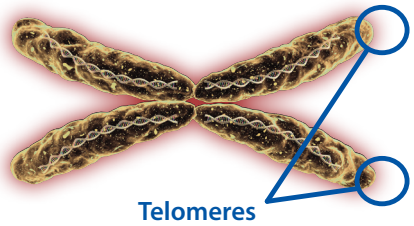
What are Sirtuins?

The sirtuin genes are located in the cell nucleus and possess a component that functions in repairing double stranded DNA breaks that occur as we age.[3] This also plays an important role in controlling the length of the telomere, which in turn protects the ends of the chromosome from destruction. Because of this role, the sirtuins are considered regulators of the cellular defense systems and thus play a role in longevity.



Biotics Research Corporation has developed a line of products which support sirtuin activity.

These products include **VasculoSirt®**, **Lipid-Sirt®**, **EFA-Sirt Supreme®**, **ResveraSirt-HP®**, **Bio-CardioSirt BP®** and **Red Yeast Rice**. These products contain key STACs.

The utilization of STACs offers promising healthy alternatives to standard interventions, while also offering significant anti-aging properties.

These statements have not been evaluated by the Food and Drug Administration. These products are not intended to diagnose, treat, cure, or prevent any disease.

Ask you healthcare professional which sirtuin product is right for you.

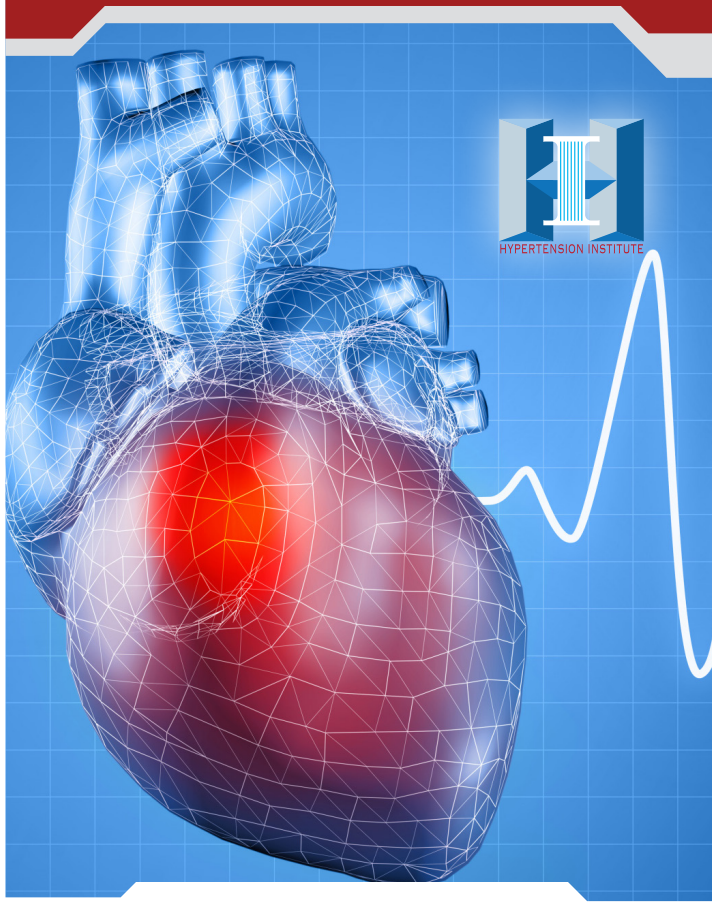
BIOTICS® RESEARCH CANADA
"The Best of Science and Nature"

(905)476-3554

Biotics Research Canada
Box 283 • Keswick ON L4P 3E2
orders@bioticscan.com
www.bioticscanada.com

Sirtuins

Because Healthy Aging Requires Healthy Arteries and a Healthy Heart



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Why Sirtuins?

Support for vascular integrity and healthy aging by supporting and stimulating sirtuin activity

VasculoSirt® - The key Sirtuin-activating compounds (STACs) in this revolutionary cardiovascular supplement product include resveratrol and quercetin. The primary objective of **VasculoSirt®** is to slow vascular aging and promote both vascular and heart health. Case studies have demonstrated improvements in athletic performance, maintenence of healthy blood pressure and liquid panel, as well as a decrease in C-reactive protein (CRP). Improvements in both Carotid Intima-Media Thickness and Computerized Pulse Waveform Analysis (CAPWA) have also been observed, establishing its beneficial effects on cardiovascular function.

EFA-Sirt Supreme® offers a high potency mix of EPA, DHA and GLA, along with a high concentration of the delta gamma tocopherol form of vitamin E. It is specifically designed to target vascular health. In animals, omega-3 fatty acids have proven effectiveness in reversing a reduction in Sirt1.[1] Sirt1 is the main deacetylase in the regulation of genes involved in mitochondrial and fatty acid utilization. In response to low nutrients or a low level of glucose, cells increase the rate of fatty acid oxidation. Sirt1 is required for this increased rate of fatty acid oxidation in response to low glucose and has been implicated as the "metabolic regulator", permitting the switch from glucose to fatty acid oxidation in nutrient deprivation conditions.[2]

ResveraSirt-HP® - Trans-resveratrol, the primary component in **ResveraSirt-HP®**, is a natural polyphenolic phytochemical, found in over 70 species of plant flora, including grapes, red wine and even peanuts. The most common source is Japanese Knotweed (*Polygonum cuspidatum*). However, not all sources of Trans-resveratrol are created equal. Routine testing in our in-house laboratories has resulted in our rejection of multiple lots due to unacceptably high levels of benzopyrine, a polycyclic aromatic hydrocarbon and known carcinogen. Resveratrol possesses a diverse array of biochemical and physiological actions, and has been demonstrated to mimic calorie restrictions by stimulating SIRT2. Published studies suggest that in yeast, this action extends lifespan by 70%, and in animals increased lifespan by 30%. In the same study, it was also shown to increase DNA stability, which also has a positive impact on life expectancy. In both acute and chronic models of cardiovascular disease, resveratrol has demonstrated cardiac protection by virtue of its modulation of cellular vascular function and its ability to inhibit LDL oxidation. Additionally, it possesses both antioxidant and anti-inflammatory properties, playing a key role as a regulator of NF-kappaB.

Lipid-Sirt® - It is well documented that specific nutrients have a positive effect on cholesterol levels. These specific nutrients are included in **Lipid-Sirt®**. Pantethine has been demonstrated to significantly increase levels of HDL, the good cholesterol. A lower level of both total and LDL cholesterol has also been demonstrated with the use of phytosterols. Green tea extract has antioxidant properties and was found to decrease cholesterol solubility, resulting in reduced intestinal absorption. Delta tocotrienol is an effective free radical scavenger and an inhibitor of HMG-CoA (the rate limiting step in cholesterol synthesis). However, unlike statin drugs, it does not inhibit the synthesis of CoQ10. Phytolens® is a patented proprietary procyanidin compound exclusively from Biotics Research, possessing potent antioxidant and anti-inflammatory activities.

Bio-CardioSirt BP® - Blood pressure increases with age as a consequence of the interaction of our environment, genetics and lifestyle including exercise and the dietary intake of macro and micronutrients. Nutrient-gene interactions and oxidative stress influences vascular biology in humans. **Bio-CardioSirt BP®** supplies a unique patented combination of 7 key micronutrients that have been clinically proven to support normal, healthy blood pressure levels.

1. Wu et al. J Neurotrauma. 2007 Oct;24(10):1587-95. Gerhart-Hines Z, Rodgers JT, Bare O, Lerin C, Kim SH, Mostoslavsky R, Alt FW, Wu Z, Puigserver1 P.
2. Metabolic control of muscle mitochondrial function and fatty acid oxidation through SIRT1/PGC-1. EMBO J. 2007 April 4;26(7):1913–1923.
3. Michan S, Sinclair D. Sirtuins in mammals: insights into their biological function. Biochem J. 2007 May 15; 404 (1): 1-13.

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