

## Isohumulone The Preventive Molecule

Isohumulones, the bitter compounds derived from hops, activate dietary lipid sensors that regulate fatty acid and carbohydrate metabolism in our bodies. Activation of these sensors improves insulin sensitivity, which can advance the health of type 2 diabetics.

When these sensors are inactive or impaired, metabolic syndrome has a tendency to be apparent. Metabolic syndrome is the combination of many different diseases manifesting in one patient (diabetes, cardiovascular, obesity).

BioNovix took this preventative molecule 'Isohumulones' and combined it with Xanthohumol (the leading molecule in MeridiumXN™) and created an extra-strength formulation in capsule form.

### Research Summary

#### *Cholesterol, Glucose and Insulin Regulator/Anti-Obesity Agent*

- *Isohumulones are the isomers of the alpha acids called humulones. The isomers of the alpha acids are known as iso-alpha acids, and isohumulone is the principle iso-alpha acid.*
- Derived from hops flowers and standardized to iso-alpha acids such as isohumulone, with virtually no alpha acids or beta acids.
- Clinical research has been conducted with isohumulones. By combining purified xanthohumol with purified isohumulones, we are able to access a wide body of research related to metabolic problems such as dyslipidaemia, type II diabetes, obesity, and high blood pressure. In fact the combination of these two compounds derived from hops flowers appears to be an ideal formulation for the metabolic syndrome.

### Human Studies

- Pilot clinical study conducted in humans
- Double-blind, Placebo-controlled, Randomized study in Type 2 Diabetics
- 20 subjects (10 men and 10 women)
- Dose: 80 mg. isohumulones twice per day
- Duration: 12 weeks
- Basic safety lab tests conducted every 4 weeks
- Results: Significant reductions in blood glucose and hemoglobin A1c levels of 10.1% and 6.4% respectively.
- Furthermore, significant reductions in systolic blood pressure and blood levels of the liver enzymes glutamic pyruvic transaminase (GPT), glutamic oxaloacetic transaminase (GOT), and gGTP were observed in the isohumulone treated group (7.2, 33.4, 21.3, and 25.6% reductions respectively).
- **Isoprostanes The Sign of Oxidative Stress**
- [Research Links](#)
- In the 1990s, biochemists at Vanderbilt University's Department of Pharmacology first identified a series of compounds called "isoprostanes" in humans. Isoprostanes, it was

discovered, are a product of oxidative reactions in the body caused by harmful free radicals that damage human tissue cells. Since this discovery, scientists and medical researchers have come to see isoprostanes as the single most reliable indicator of oxidative stress (cell damage), as well as a leading indicator of preconditions for a wide variety of human diseases (metabolic syndrome).

- Researchers have discovered that the isoprostanes are also directly responsible for other types of tissue damage. High levels of isoprostanes cause diminished function in coronary, pulmonary, cerebral, and retinal tissues. They have also been found to induce blood clots. Thus, in addition to their role as biomarkers for oxidative stress, isoprostanes cause their own damage, magnifying the harmful effects of free radicals.
- It would be difficult to overstate the potential importance of this discovery.
- BioNovix has developed the only test that consumers can use to determine the level of isoprostanes in their system. This consumer test is fully patent protected - no other company can use isoprostanes to measure oxidative stress outside of a research or laboratory environment.
- The Wellness Index Test provides health-conscious people everywhere an easy and quantifiable way to measure the state of their overall health.
- **The following list presents selected published research on Isoprostane.**
- The bibliography includes the author(s), article name, the journal in which the article was published, and the date of publication. Furthermore, we have provided the PubMed ID number (PMID) for each article.

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## **Metabolic Syndrome The Critical Connection**

By now, almost everyone understands the need for supplementing their diet with antioxidants. Antioxidants reduce oxidative stress. Oxidative stress is a harmful by-product of metabolic activity in the body. Oxidative stress causes damage to cells and tissues.

Metabolic stress refers to the broad spectrum of problems that affect our metabolic activity. Metabolic activity is the sum total of all the biochemical reactions in the cells, tissues, and organs of our bodies. Metabolic stress includes all the potential breakdowns in our metabolic activity and all the harmful by-products of metabolism that affect our health. Metabolic stress includes oxidative stress, but also includes many other dysfunctions that impact the heart and cholesterol levels, weight gain and loss, blood sugar levels, glucose and insulin regulation, energy level, mood, and focus. Metabolic stress consists of several potential problems and harmful by-products of metabolic activity in the body.

Free radical production and oxidative stress are only one small part of an unhealthy metabolism. As medical science has expanded its understanding of the root causes of health problems, something more basic and more widespread than oxidative stress has come to light in the last 10 years -- metabolic stress. Metabolic stress includes many problems that affect the biochemical pathways in our body.

Metabolic stress causes actual damage to your cells and tissues, and leads to the breakdown of the metabolic functions that keep you healthy. Metabolic stress also produces more metabolic waste and toxins than your body can rid itself of. Over time, metabolic stress leads to serious health problems.

### **Metabolic Syndrome**

The conditions associated with metabolic stress can also lead to a serious health condition known as Metabolic Syndrome. More than 50 million Americans have Metabolic Syndrome. The number of people with Metabolic Syndrome increases with age. Metabolic Syndrome affects more than 40% of people over 60 years of age. To find out more about Metabolic Syndrome, click here for information from The Cleveland Clinic, one of the nation's leading medical research centers.

### **But What If I'm Healthy?**

If you're healthy, you want to stay healthy. Metabolic stress is caused by everyday activities and experiences such as eating, exercise, and mental/emotional stress. The more you exercise, for example, the harder your metabolism works, and the more metabolic stress your body undergoes. While you may be healthy now, no one knows whether they will remain healthy in the years to come. All too often, serious health problems affect even those who eat right and exercise regularly.

Everything we do, whether we are healthy or not, produces metabolic stress, metabolic waste and metabolic toxins. We generally aren't able to eliminate the harmful by-products of metabolic activity as fast as we produce them. And so they accumulate in our bodies. Mental and emotional stress, diet, pollution, and strenuous physical activity increase the rate at which metabolic stress affects and interferes with the basic chemistry of our bodies.

### **So What's the Solution?**

We're sure you've guessed by now. MeridiumXN, with the enhanced active ingredient xanthohumol, is the first single solution to metabolic stress and overall wellness.

Just like antioxidants were "new" in the early 1990s (despite decades of earlier research), the discoveries of the bioactive properties of MeridiumXN have only recently begun to receive widespread attention. And until now, there has been no simple, healthy way to get MeridiumXN's active ingredient and the benefits of xanthohumol into your body. (If you drink 22 beers a day, you probably aren't interested in a health supplement anyway.)

### **MeridiumXN**

We are proud and excited to offer the first enhanced bioavailable formulation of xanthohumol in our MeridiumXN liquid solution and capsules. MeridiumXN is the ultimate antidote to the stresses of lifestyle, diet, pollution, exercise, and aging.

One more thing about MeridiumXN: the healthier you are, the more you feel it. It's hard to describe what you feel...some call it energized, others say it relaxes them, still others say they can focus better and do more work. People who take it before bedtime report falling asleep more easily and sleeping better. People who take it in the morning say it both calms and energizes them, as well as lifts their mood. Those who do feel it, feel it right away – within minutes of taking MeridiumXN. Whatever the feeling is, it's a good one.