

HerbalScience Research Identifies Specific Bioactives In Stabilized Rice Bran Extract that Impart Anti-Inflammatory Benefits



-- Article on Laboratory Study Revealing Key Rice Bran Phytonutrients Published in Journal of Medicinal Food -

Press Release

Source: HerbalScience

On Wednesday August 12, 2009, 8:30 am EDT

NEW YORK, Aug. 12 /PRNewswire/ -- Rice bran, a by-product of rice milling, is known to be an excellent source of antioxidants, vitamins, and other critical nutrients. What's more, stabilized rice bran - created via new methods of processing that stabilizes the bran and extends its life and nutritional value - has been shown in studies to play a role in treating diabetes and arthritis, although its exact mode-of-action was unknown. Now, the specific bioactive compounds that impart the anti-inflammatory health benefits of stabilized rice bran have been identified in research conducted by scientists at HerbalScience Group, LLC - opening the door to the development of functional foods and dietary supplements to help control inflammation and promote joint health.

An article detailing the study, titled "Pro-Inflammatory Enzymes, Cyclooxygenase 1, Cyclooxygenase 2, and 5-Lipoxygenase, Inhibited by Stabilized Rice Bran Extracts," has been published in the June 2009 issue of the peer-review *Journal of Medicinal Food*. The authors of the article are all affiliated with HerbalScience Group, a Naples, Florida, and Singapore-based company dedicated to applying advanced science and technology to the production of botanical drugs and nutraceuticals.

"Arthritis is already the most common form of disability in the United States, and is expected to afflict some 59 million people by the year 2020," said Randall S. Alberte, Ph.D., Chief Scientific Officer of HerbalScience Group and one of the authors of the published study. "The inflammation of the joints that occurs in arthritis is a direct result of the production of specific pro-inflammatory enzymes at the site that generate inflammation mediators. So identifying the key bioactive compounds in stabilized rice bran extract that inhibit those enzymes is the first step toward developing safe and effective natural treatments for arthritis and a range of other inflammatory diseases."

In the laboratory research, two different stabilized rice bran extracts were created through a proprietary extraction technology developed by HerbalScience. The extraction procedures, which included supercritical CO2 and affinity absorbent technologies for extracting plant phytochemicals, enabled the company to standardize the chemical profile of any selected botanical in order to deliver a product that is compositionally and functionally consistent batch to batch. The study also included a third extract that was created as a combination of the original two extracts in a 1:6 ratio.

Each of the extracts was tested for its ability to inhibit the key pro-inflammatory enzymes - cyclooxygenase 1 [COX1], cyclooxygenase 2 [COX2], and 5-lipoxygenase [5-LOX] - that are known contributors to impaired joint health, pain, and arthritis. All three extracts demonstrated enzyme inhibition, with the highest level of inhibition of all three enzymes achieved with the extract blend.

In addition, the study identified specific bioactive compounds in each of the extracts as being likely significant contributors to the COX and/or 5-LOX inhibition activities. While a few were already known for anti-inflammatory characteristics, the anti-inflammatory activity of several other compounds had not been reported by any previous research. This analysis of the individual chemical constituents in the extracts was enabled through use of a DART (Direct Analysis in Real Time) Time-of-Flight mass spectrometer, one of the most advanced mass spectrometric technologies available. The DART-TOF is able to detect, identify with high accuracy, and quantify the hundreds or thousands of individual chemicals present in botanical extracts.

"Botanical extracts have a long history of use for arthritis and inflammatory diseases, but now, through our research and technologies developed at HerbalScience, we are able to identify the specific chemical compounds in the botanicals that offer health benefits," said Dr. Alberte. "From the results of this study, it is clear that these stabilized rice bran extracts hold great promise for natural, safe, and effective treatments of arthritis in the form of dietary supplements or functional foods."

The article describing the rice bran study is in the June 2009, Volume 12, Number 3, issue of *Journal of Medicinal Food* as: "Pro-Inflammatory Enzymes, Cyclooxygenase 1, Cyclooxygenase 2, and 5-Lipoxygenase, Inhibited by Stabilized Rice Bran Extracts," DOI: 10.1089/jmf.2008.0133, authored by Bill Roschek, Jr., Ryan C. Fink, Dan Li, Matthew McMichael, Christine M. Tower, Robert D. Smith, and Randall S. Alberte, all of HerbalScience Group LLC.

HerbalScience Group LLC is a privately-held life sciences company headquartered in Naples, Florida, with facilities in Singapore. HerbalScience is engaged in the discovery, development, manufacture, and marketing of proprietary botanical compounds for human health in the U.S. and international markets. The company has prominent alliances with prestigious university laboratories and prominent researchers in the U.S., as well as research institutions in China.

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