

National Press Release

HerbalScience Identifies Health Benefits of its Elderberry Extract in Multiple Scientific Research Studies

-- Research Validates Historical Medicinal Use of Elderberry, Demonstrates Mode of Action and Efficacy of HerbalScience's Proprietary Elderberry Extract --

NAPLES, Fla., Oct. 13 /PRNewswire/ -- The 21st century is seeing renewed interest in traditional and alternative medicine, with a particular focus on herbs and botanicals that have long been thought to have therapeutic qualities. One of those botanicals is elderberry, which for centuries has been used as a home remedy for upper respiratory health to ward off infection. Now, researchers at HerbalScience Group have employed advanced scientific methods and innovative technology to uncover the science behind that traditional use, and have developed a proprietary, standardized elderberry extract with scientifically demonstrable antiviral properties and health benefits.

"There is enormous potential in examining the therapeutic properties of botanicals from a science-based perspective," said Dr. Roberta Lee, Vice Chair of the Department of Integrative Medicine at Beth Israel Medical Center, and a recognized expert on the use of alternative, integrative therapies and botanical supplements in optimizing wellness and managing chronic disease. "The HerbalScience elderberry extract showing activity against H1N1 Human Influenza virus is an example of why the health benefits of botanicals should be investigated. The initial human clinical trial results look promising and call for a larger trial to demonstrate the product's health benefits in the general population."

It has long been known that the fruit of the elderberry is highly enriched in compounds that have established health benefits through their antioxidant and immune functions. But, said Randall S. Alberte, Ph.D., Chief Scientific Officer of HerbalScience Group LLC, "it is only within the past few decades that the bulk of the potential health benefits of elderberries have been recognized, and there is now an increasing library of scientific data to support the empirical evidence."

HerbalScience Group, a Naples, Florida, and Singapore-based company dedicated to applying advanced science and technology to the production of botanical drugs and nutraceuticals, has placed itself at the forefront of the research into how elderberry provides its beneficial health characteristics. The company's scientists developed new, patent-pending extraction technologies that are able to extract a broad diversity of phytochemicals from botanicals and create consistently reproducible extracts that have a reliable chemical "fingerprint" for each batch and each dose. In addition, using advanced DART (Direct Analysis in Real Time) Time-of-Flight mass spectrometry, the company is able to detect, identify with high accuracy, and quantify the hundreds of individual chemicals present in its extracts in order to identify the key bioactive chemical compounds.

In the case of elderberry, HerbalScience created a proprietary elderberry extract and initiated studies that would first, identify the key bioactives in elderberry that function in an antiviral manner, and second, establish the mode of action of these bioactives in relation to the viral life cycle. An initial laboratory study conducted with the Human Influenza A (H1N1) virus was successful in identifying specific flavonoids in the elderberry extract that inhibit viral infection in vitro. The study also established that the flavonoids bind to the H1N1 and other related viruses, and when bound, block the virus from entering host cells,

effectively preventing infection. The research was published in the peer-reviewed scientific journal *Phytochemistry*.(1)

Taking it to the next step, HerbalScience sponsored a pilot, randomized clinical trial to assess the efficacy of its proprietary elderberry extract in addressing flu-like symptoms in humans. The double-blind, placebo-controlled study, conducted at Shanghai Construction Technical College, China, during the spring 2009 flu season, involved 64 patients each presenting with three or more flu-like symptoms including fever, headache, muscle aches, coughing, nasal mucus discharge, and nasal congestion. After 48 hours of dosing, most patients in the placebo group reported symptoms that were unchanged or even worse than initially, while patients receiving the elderberry extract reported significant reduction in symptoms, with 28% being symptom-free. Full results of the pilot clinical trial were published in the scientific journal *Online Journal of Pharmacology and Pharmacokinetics*.(2)

"Our research is ongoing, but it is already clear that our proprietary elderberry extract offers health benefits that are scientifically and mechanistically validated," said Dr. Alberte. "Because our extraction technology enables us to produce botanical extracts that are safe and consistent dose to dose, it opens the door to the development of evidence-based nutraceuticals that are reliable and effective in building and supporting upper respiratory and immune system health."

HerbalScience Group 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.

(1) Bill Roschek et al, "Elderberry flavonoids bind to and prevent H1N1 infection in vitro," *Phytochemistry*, Volume 70, Issue 10, pp. 1255-1261, July 2009

(2) Fan-kun Kong, "Pilot Clinical Study on a Proprietary Elderberry Extract: Efficacy in Addressing Influenza Symptoms," *Online Journal of Pharmacology and Pharmacokinetics*, Volume 5: 32-43, 2009

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