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Frankincense Provides Relief for Osteoarthritis; New Article in BMJ - British Medical Journal December Issue

MORRISTOWN, NJ (19 December 2008) PL Thomas (PLT), in alliance with Laila Nutra, India, today jointly announced the publication of an article in BMJ's December 17 issue titled *Frankincense: Systematic Review*, in which the patent-pending *Boswellia serrata* extract 5-LOXIN was included. Just in time for the holidays, the article's objective was to assess evidence from randomized clinical trials about the effectiveness of extracts of *Boswellia serrata* (frankincense).

A rigorous search of published studies was conducted, and each was evaluated to assess the methodological quality of the trials. Of 47 potentially relevant studies, seven met all inclusion criteria (five placebo controlled, two with active controls). The included trials related to asthma, rheumatoid arthritis, Crohn's disease, osteoarthritis, and collagenous colitis.

The recently published study, "A double blind, randomized, placebo controlled study of the efficacy and safety of 5-LOXIN[®] for treatment of osteoarthritis of the knee," was one of the trials which met the quality criterion. Available at [Arthritis Research & Therapy 2008](#), (doi:10.1186/ar2461) this trial has also merited AR&T's "Highly Accessed" status due to its high level of interest, likely due to its significance and inclusion of biomarkers.

In the study, 5-LOXIN supplementation resulted in clinically and statistically significant improvements in pain scores and physical function scores in OA patients at doses of 100mg and 250mg daily. Interestingly, significant improvements in pain score and functional ability were recorded in as early as 7 days after the start of treatment. Corroborating the improvements in pain scores in treatment groups, a significant reduction in synovial fluid MMP activity, enzymes which damage connective tissue, was noted. 5-LOXIN was found to be well-tolerated, with no safety concerns

The study was led by Siba Raychaudhuri, a faculty member of the University of California, Davis, in the United States. According to an interview with the journal, Dr. Raychaudhuri said, "The high incidence of adverse affects associated with currently available medications has created great interest in the search for an effective and safe alternative treatment."

The ingredient used by the authors was 5-LOXIN, (a unique, patent pending extract of *Boswellia serrata*) providing 30% AKBA (3-O-acetyl-11-keto-beta-boswellic acid).

Raychaudhuri continued, "AKBA has anti-inflammatory properties, and we have shown that a *Boswellia serrata* extract with concentrated AKBA can be an effective treatment for osteoarthritis of the knee".

Seventy-five OA patients were included in the study. Dived into three groups of 25, the patients were given daily either 100 mg 5-LOXIN, 250 mg 5-LOXIN or a placebo for 90 days. Each patient was evaluated for pain and physical functions by using the standard tools (VAS - visual analog scale, Lequesne's Functional Index, and Western Ontario and McMaster Universities Osteoarthritis Index) at the baseline (day 0), and at days 7, 30, 60 and 90. Additionally, the cartilage degrading enzyme matrix metalloproteinase-3 was also evaluated in synovial fluid of the knee from OA patients.

According to the authors, "In this study, the compound was shown to have no major adverse effects in our osteoarthritis patients. It is safe for human consumption and even for long-term use."

5-LOXIN is available in North America in Osteo Bi-Flex products with the Joint Shield blend sold in food, drug and mass market and club stores.

For more information on this study please contact PL Thomas: phone: 973-984-0900, fax: 973-984-5666, e-mail: info@plthomas.com or www.PLThomas.com

About Laila Nutraceuticals (LN)

LN is a division of Laila Group, the largest producer of herbal extracts in India. LN works with Laila Impex Research Center to develop, manufacture and commercialize standardized herbal extracts & phytochemicals worldwide, and supports this work with patents and publications.

About PLT

PL Thomas, a New Jersey-based ingredient supplier offers more than fifty years of innovation in sourcing and marketing natural, reliable, value-added ingredients for the food, beverage, functional food, dietary supplement and cosmeceuticals markets.

PLT specializes in clinically-supported nutraceuticals, fruit and botanical extracts, probiotics and fermentation products, novel delivery systems, and hydrocolloids, with ingredients covering a wide range of application specific conditions. www.plthomas.com

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