Cucumber-derived ingredient Q-actin supports joint function and mobility in clinical study

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A new clinical study of adults with moderate joint health issues demonstrated that a novel iminosugar-containing dietary supplement

ingredient, marketed as Q-actin , improved joint function and mobility significantly better than a placebo. The results were published in the February issue of *Current Rheumatology Reviews.*

Q-actin is a cucumber (Cucumis sativus L.) extract containing the iminosugar acid idoBR1 standardized to > 1% produced by IminoTech, Inc. Iminosugars are an emerging class of biologically active carbohydrate analogues that can modulate processes in the body to potentially enhance human health. idoBR1 can be considered as an analogue of iduronic acid. The six-month observational study evaluated 91 subjects who consumed Q-actin or a placebo daily.

"The results clearly show study participants were able to significantly improve their joint function and health by taking as little as 20 milligrams of Q-actin daily," said Robert Nash, Ph.D., a phytochemistry researcher and leading expert on iminosugars who led the study. "The health benefits were evident from the early days of the study and at every evaluation point."

Study design and results

The study, conducted by PhytoQuest Limited, enrolled 101 subjects with moderate osteoarthritis, 91 of which were evaluable. Subjects were divided into three groups taking a placebo or 20 mgs or 100 mgs of Q-actin daily for six months. Following a baseline evaluation, subjects were evaluated at 30-day intervals using the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), the Visual Analogue Scale (VAS) and Lequesne's Functional Index (LFI).

Both Q-actin groups experienced significant reductions in pain and improvements in other joint function parameters at every point of the study by every evaluation method. For example, subjects taking 20 mgs daily of Q-actin experienced a 32% improvement in WOMAC scores

over six months, compared with a 5% improvement for the placebo group. The Q-actin health benefits were dose dependent. The WOMAC score of the 100 milligram-group increased 39% over the duration of the study.

"It is remarkable that a daily serving of only 20 mgs of Q-actin produced significant improvements in joint function, including the ability to complete daily activities such as using stairs, shopping and working at home," said Shil Kothari, IminoTech Chief Executive Officer. "Q-actin's daily serving size is a small fraction of leading joint health dietary supplement ingredients. It opens the door to many new joint health product formats and applications."

Previous research supports efficacy

A previously published randomized, double-blinded clinical study involving 122 adults reported that 20 mg of Q-actin daily significantly improved joint health in comparison with 2,700 mg of glucosamine-chondroitin over a six-month period. Subjects were evaluated at 30-day intervals using WOMAC, VAS and LFI. Q-actin reduced WOMAC scores 70% over six months.

Earlier studies showed Q-actin/idoBR1 reduced LPS-induced pro-inflammatory cytokine tumor necrosis factor alpha (TNFα) in both ex vivo human serum and THP-1 cells. TNFα can drive degenerative changes such as in joints when chronically elevated. Research shows that idoBR1 works in a dose-dependent manner to reduce inflammatory markers, including LPS-induced production of TNFα, IL-6, nitric oxide and the transcription factor NF-κB.

More information: Robert James Nash et al, Standardised ido-BR1 Cucumber Extract Improved Parameters Linked to Moderate Osteoarthritis in a Placebo-controlled Study, *Current Rheumatology*

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