

Non-alcoholic fatty liver disease: new proven benefits from curcumin

A recent clinical study shows that Meriva[®] is safe and well tolerated in subjects with NAFLD and may improve liver status after just 8 weeks of supplementation.

Milan, June 6th, 2017 - A recent randomized controlled clinical trial has shown that the administration of Indena's bioavailable curcumin formulation, Meriva®, may improve the health status in subjects with non-alcoholic fatty liver disease (NAFLD), as assessed by multiple liver parameters. This is the first clinical study investigating the effects, efficacy and safety of curcumin phytosome supplementation in fatty liver disorders.

The study aimed to assess the effects on metabolic profile in subjects with NAFLD[1, 2]. Eighty seven subjects diagnosed with grades 1-3 (according to liver sonography) were enrolled and randomly assigned to curcumin (1000 mg per day in 2 divided doses) (n = 44) or control (n = 43) group for a period of 8 weeks. Supplementation with Meriva® was associated with reductions in BMI (P = 0.003) and waist circumference (P < 0.024). Consistent with the findings of liver ultrasonography, serum levels of AST and ALT were reduced by the end of trial in the curcumin group (respectively from 35.46 ± 22.97 to 24.85 ± 12.84 and from 27.63 ± 11.35 to 20.68 ± 6.65 , P < 0.001) but elevated in the placebo group (respectively from 36.81 ± 24.32 to 41.33 ± 23.97 and from 27.44 ± 10.01 to 31.23 ± 12.80 , P < 0.001). The effect of curcumin in reducing serum AST (P < 0.001) and ALT (P < 0.001) levels was also significant in the between-group comparison. Likewise, ultrasonographic findings improved in 75% of subjects in the curcumin group while the rate of improvement in the control group was 4.7% (P < 0.001).

Furthermore, supplementation with $\underline{\text{Meriva}^{\$}}$ was associated with a reduction of serum levels of total cholesterol (P < 0.001), LDL cholesterol (P < 0.001), triglycerides (P < 0.001), non-high density lipoprotein cholesterol (P < 0.001), and uric acid (P < 0.001).

No safety and tolerability issues were reported during the 8 weeks of treatment.

"Non-Alcoholic fatty liver disease is the most common chronic liver disorder in the Western Countries, affecting 30% of the general adult population, up to 60-70% in diabetic and obese patients" – commented **Antonella Riva, Product Research Manager at Indena**. "This is the first clinical study investigating the effects of Meriva in improving liver health; the positive results we obtained show that our bioavailable curcumin formulation may help to improve the health status in these subjects. Our commitment in Research and Development drives us to explore important goals to fulfil the unmet and increasing health needs deriving from modern life style conditions".

These new data supporting the consistency and strength of Meriva in fatty liver will be presented at the coming 11th World Congress on Polyphenols Applications (Vienna, June 20-21, 2017).



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References:

[1] - Panahi Y et al., Efficacy and Safety of Phytosomal Curcumin in Non-Alcoholic Fatty Liver Disease: A Randomized Controlled Trial. Drug Res (Stuttg). 2017 Apr; 67(4): 244-251.

[2] - Panahi Y et al., Curcumin Lowers Serum Lipids and Uric Acid in Subjects With Nonalcoholic Fatty Liver Disease: A Randomized Controlled Trial. J Cardiovasc Pharmacol. 2016 Sep; 68(3): 223-9.

Meriva®

Meriva[®] is a patented delivery form of curcumin based on Indena's proprietary Phytosome[®] technology, for healthy inflammatory response, joint health and eye health. Pharmacokinetic comparison studies have shown Meriva® to improve the overall curcuminoids bioavailability by about 30-fold, and significant absorption benefits; in particular, demethoxycurcumin (the most potent curcuminoid in numerous bioassays) was found to be 50-fold more bioavailable as compared to a non-formulated curcumin extract. Indena technology relies on the use of dietary adjuvants (lecithin) and is supported by 29 clinical trials on efficacy and by a robust tolerability and safety profile.

Further info on Meriva® and other Phytosomes: www.phytosomes.info

To know more about Phytosome® technology watch the video <u>"Phytosome</u>®: the technology explained" on the Indena YouTube channel

Indena is the leading company dedicated to the identification, development and production of high quality active principles derived from plants, for use in the pharmaceutical, health food and personal care industries. Backed up by over 90 years of botanical experience, the company holds more than 120 primary patents, has published more than 700 scientific studies and co-operates with the world's most prestigious universities and private research institutions. Indena employs about 800 staff, investing around 10% of its annual turnover in research, making this activity the key to its success. Headquartered in Milan, Indena has 5 production sites and 5 international branches throughout the world and manages sales in more than 70 countries. The Company's experts communicate and interact constantly with the major international regulatory authorities such as WHO, EMA, FDA and ESCOP, and cooperate on the update of all the main pharmacopoeias.

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This product is not intended to diagnose, treat, cure, or prevent any disease.