EXTRACTION

Industrial Sonomechanics Shares Data on 2 Delta-8 THC Nanoemulsions

Results suggest they provide better absorption rates compared to MCT oil.

By CEN Staff

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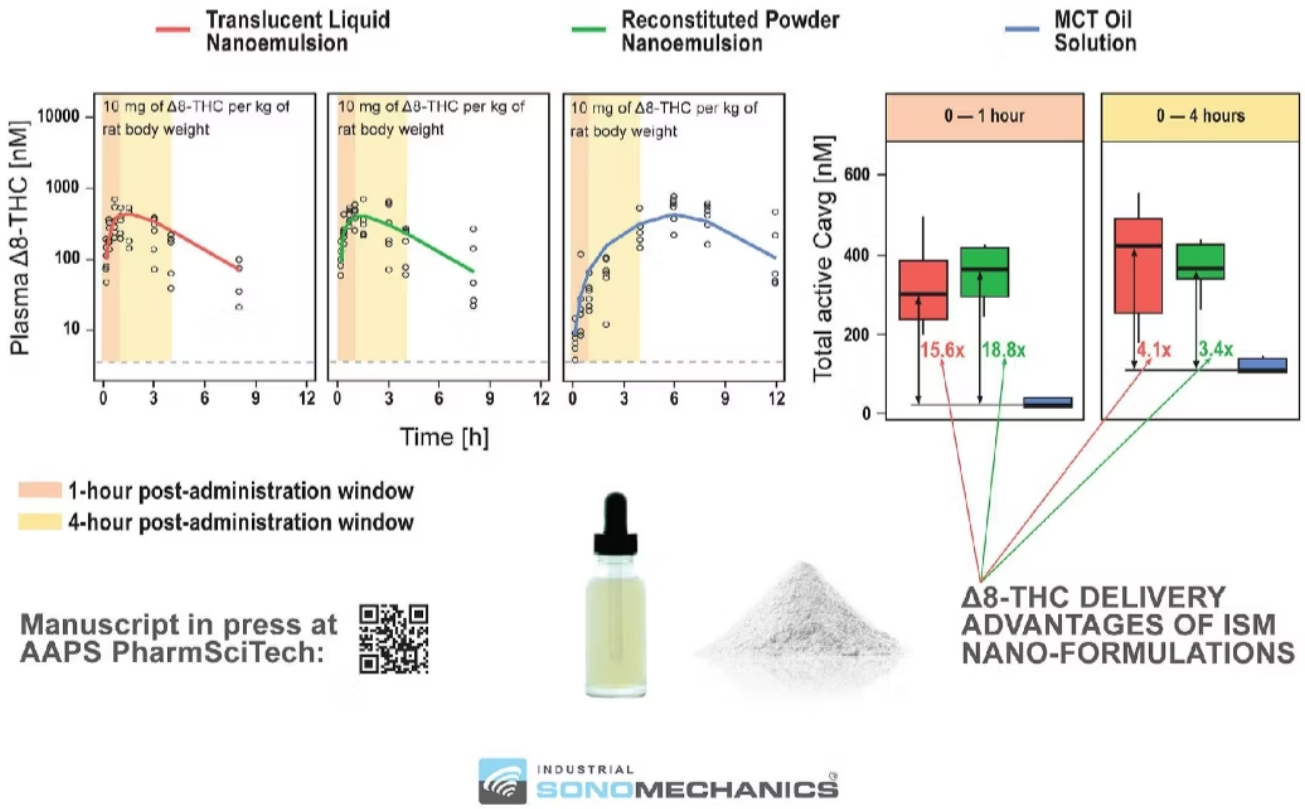
Source: iStock.com/Marcus Millo

Industrial Sonomechanics (ISM) has recently completed a pre-clinical pharmacokinetic study, comparing two orally administered Δ8-THC nanoemulsions (liquid and powdered) with an MCT oil solution. The results demonstrate considerable advantages of nanoemulsions produced with ISM's ultrasonic equipment and NanoStabilizers, and are detailed in our latest manuscript, currently in press at AAPS PharmSciTech, an official journal of The American Association of Pharmaceutical Scientists.

The company said this marks the industry's first pre-clinical study of Δ8-THC nanoemulsions, which was conducted and published in collaboration with Verdient Science.

Nanoemulsions Outperform Oil Solution by 19X during 1 Hour and 4X during 4 Hours After Administration



Source: Industrial Sonomechanics

Main Study Aims and Design

Over many years, ISM's ultrasonic equipment and NanoStabilizers have enabled thousands of companies around the world to produce their own water-soluble liquid and powdered nano-formulations that can be infused into various finished products (beverages, edibles, water-soluble powder mixes, chewable and effervescent tablets, etc.) and significantly improve absorption profiles of the incorporated bioactive ingredients.

The main pharmacokinetic parameter of interest for most therapeutic ingredients (cannabinoids, alkaloids, terpenes, etc.) is the rate of absorption into the bloodstream post-administration. This rate is characterized as the "onset time", "time to maximum concentration in the bloodstream", and/or "average concentration in the bloodstream over a time window of interest."

(made with NanoStabilizer-LSO), and as an MCT oil solution. The study parameters were optimized for the rate of absorption evaluation, rather than other, less consequential parameters (absolute bioavailability comparisons, food effects, etc.).

Source: Industrial Sonomechanics

Summary of Results

THC, respectively, than the MCT oil solution.

- During the extended 4-hour period after administration, NanoStabilizer LT- and LSO-based nanoemulsions provided 4.1x and 3.4x greater absorption of Δ8-THC, respectively, than the MCT oil solution.
- Both nanoemulsions enabled a much more rapid onset time and a much shorter time to maximum concentration in the blood stream (~5 min and <1 hour, respectively) than the MCT oil solution (~1 hour and 6 hours, respectively).
- The translucent liquid and powdered Δ8-THC nanoemulsions displayed remarkably similar properties to each other.

Main Conclusions:

- Δ8-THC nanoemulsions made with ISM's ultrasonic equipment and NanoStabilizers allow consumers to quickly harness this cannabinoid's therapeutic effects, providing an almost immediate onset time and considerably greater absorption within time windows of interest.

ISM's nanoemulsions of hydrophobic active ingredients (cannabinoids, alkaloids, terpenes, etc.) are advantageous for creating fast-acting infused products, such as beverages, edibles, water-soluble powder mixes, chewable and effervescent tablets, and many others.

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