

# A New Pharmacokinetic Study by Industrial Sonomechanics Unveils Groundbreaking Insights into Delta-8 THC Nanoemulsions

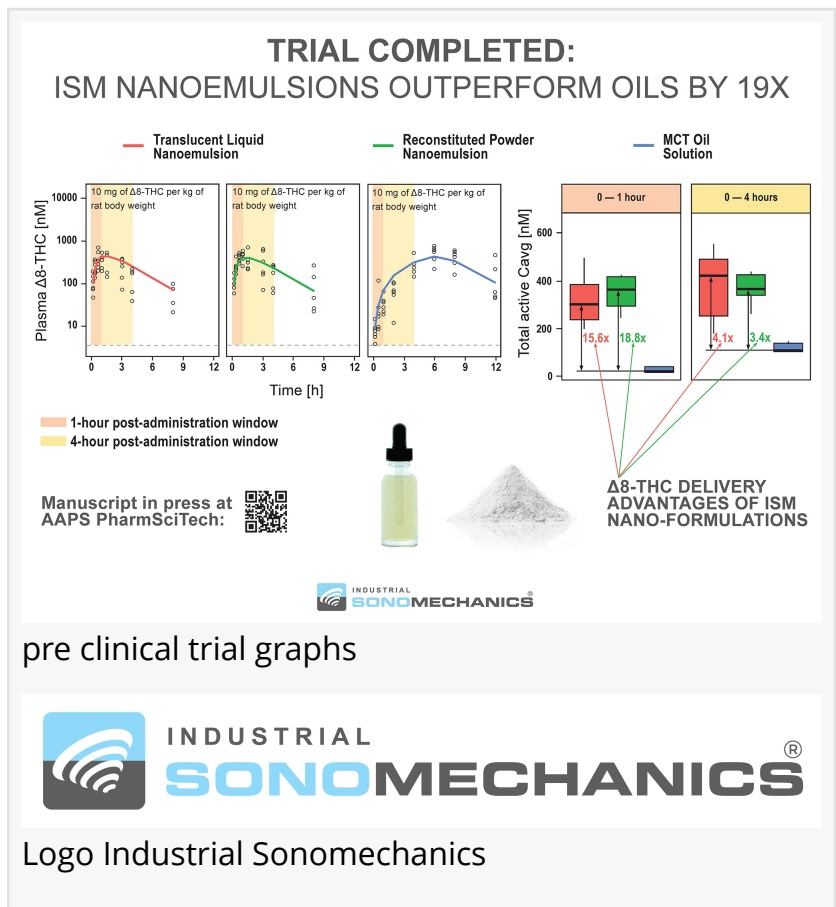
MIAMI, FLORIDA, UNITED STATES, April 10, 2024 /EINPresswire.com/ -- Industrial Sonomechanics® (ISM) has concluded a pre-clinical pharmacokinetic study, which involved the comparison of two orally administered Delta-8 THC nanoemulsions (in liquid and powdered form) with a Delta-8 THC solution in MCT oil. The results demonstrate considerable advantages of nanoemulsions produced with ISM's [ultrasonic equipment](#) and [NanoStabilizers®](#), and are detailed in a recent [publication](#) by AAPS PharmSciTech, an official journal of The American Association of Pharmaceutical Scientists.

Delta-8 THC Study Aims and Design:

Over many years, ISM's ultrasonic equipment and NanoStabilizers® have enabled companies around the world to produce their own water-soluble liquid and powdered nano-formulations that can be infused into various products such as beverages, edibles, tablets, 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".

This study was aimed at evaluating the rate of oral absorption of Delta-8 THC formulated as two nanoemulsions: translucent liquid (made with NanoStabilizer®-LT) and powdered (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, food effects, etc.).

Results: Nanoemulsions Very Significantly Outperform MCT Oil Solution by 19X during 1 Hour and 4X during 4 Hours After Administration

- During the most important first hour after administration, NanoStabilizer®-LT and -LSO-based nanoemulsions provided 15.6x and 18.8x greater absorption of Delta-8 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 Delta-8 THC, respectively, than the MCT oil solution.
- Both nanoemulsions enabled a much more rapid onset time and a much shorter time to maximum bloodstream concentration (~5 min and <1 hour, respectively) than the MCT oil solution (~1 hour and 6 hours, respectively).
- Translucent liquid and powdered Delta-8 THC nanoemulsions displayed similar pharmacokinetic profiles.

Main Conclusions:

- Delta-8 nanoemulsions made with ISM's technology 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, tablets, and many others.

Industrial Sonomechanics, LLC is a U.S.-based research & development, equipment design & manufacturing, and process consulting firm specializing in high-intensity ultrasonic technology for the production of nano-formulations.

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