

Ultrasonic Inline Extraction of Bioactive Compounds from Botanicals

Short Abstract:

Ultrasonic extraction excels by its high yield of high-quality extracts, rapid processing, mild conditions, efficiency as well as its simple and safe operation. Sonication can be performed in smaller batches up to continuous inline extraction on industrial scale.

Ultrasonic extraction achieves a very rapid isolation of compounds - outperforming conventional extraction methods in shorter process time, higher yield, and at lower temperatures. As a mild mechanical treatment, ultrasound extraction prevents the thermal degradation of bioactive compounds and outperforms other techniques such as heated solvent extraction, hydrodistillation, or Soxhlet extraction, which can destruct heat-sensitive molecules. These advantages makes ultrasonic extraction the preferred technique for the release of temperature-sensitive active compounds from botanicals.

Using various examples for ultrasonic extraction applications in flow-through mode, we demonstrate the efficiency and linear scalability of ultrasonic flow extraction processes.

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