



Book of Abstracts

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P35. Miniaturized Solid Phase Extraction Techniques Applied to Natural Products: A Review

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Natural products are increasingly becoming part of our daily lives through their use in industry, food, as therapeutic agents, etc. Different techniques may be used to characterize natural products, including microextraction techniques. This work intends to review the most used solid-based miniaturized sample preparation techniques applied to determining compounds in natural products. Advantages and drawbacks are also presented. A systematic literature search was performed involving three electronic databases: Medline, ISI Web of Knowledge, and Google Scholar. The search considered papers published from 2015 to the present, with exceptions based on the specific method used (the criteria for the search were extended to 2011 due to the low number of publications). The review's findings and discussion revealed that HS-SPME is the most commonly used approach (37.0%) for natural compound analysis due to its "green" characteristics, including solvent-free extraction and sustainability. However, methods using molecularly imprinted polymers for solid-phase extraction (14.8%) and stir bar sorptive extraction (18.5%) are gaining popularity, possibly due to their speed and simplicity. There has been a great deal of attention concerning developing modified sorbents, such as multi-walled carbon nanotubes and MIPs, probably due to their high selectivity.

Chromatographic instruments such as HPLC and GC are preferred (48.1%), and the most common detectors are UV/visible detectors (20.5%) and mass spectrometry (44.9%), respectively.

However, one of the main challenges of using those approaches is obtaining pure and well-characterized materials, as well as the fact that they are not commercially available, which poses a problem to laboratories and industry.

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