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A comprehensive study on the bioactive compounds of pharmaceutical interest present in *Cannabis sativa L*.

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Cannabis sativa l. is a dioecious plant belonging to the *Cannabaceae* family. The main compounds present in this plant are represented by cannabinoids, flavonoids and terpenes. Among cannabinoids, Δ^9-tetrahydrocannabinol (Δ^9-THC) is responsible for Cannabis psychoactive effects. Other main cannabinoids include tetrahydrocannabinolic acid (THCA), cannabinol (CBN), cannabidiol (CBD) and cannabidiolic acid (CBDA). For what concerns other phenolic compounds, flavonoids have also been identified in C. *sativa*, belonging mainly to flavones and dihydrostilbenoids. In particular, cannflavin A and B represent *Cannabis*-specific methylated isoprenoid flavones. Terpenes represent the largest group of *Cannabis* components and they are responsible for its aromatic properties.

In this view, a detailed study on the above-mentioned compounds is highly recommended to guarantee a rational use of *Cannabis* for therapeutic purposes. In the light of all the above, the present work was aimed at the comprehensive analysis of the bioactive components present in C. *sativa* by means of innovative methods. In particular, the profiling of cannabinoids in extracts was carried out by means of a HPLC-UV/DAD, ESI-MS and MS^2 method, together with a selective extraction protocol, by taking advantage of the innovative fused-core technology of the stationary phase. A new RP-HPLC-UV/DAD, ESI-MS and MS^2 method, together with an optimized extraction procedure, was developed as well and applied for the determination of phenolics (including *cannflavin A, cannflavin B* and *canniprene*). The study on *Cannabis* volatile compounds was performed by developing a new method based on HS-SPME coupled with GC-MS and GC-FID.

The methods described above were applied to both drug-type and fibre-type *Cannabis* samples. These procedures were found to be suitable for the multi-component chemical analysis C. *sativa* inflorescences in order to ensure their quality, efficacy and safety.

Speaker Biography

Federica Pellati graduated cum laude in 2000 in Pharmaceutical Chemistry and Technology at the Faculty of Pharmacy of the University of Modena and Reggio Emilia. In 2004 she got a PhD degree in Pharmaceutical Sciences. Then she had a post-doctoral fellowship position in Medicinal Chemistry and in 2006 she got a position of Assistant Professor in Medicinal Chemistry at the University of Modena and Reggio Emilia. In 2014, she got the Italian Professorship Qualification (ASN 2012) as an Associate Professor in Medicinal Chemistry.

Her research activity is focused on the development of innovative techniques for the extraction and analysis of bioactive natural products, and on the isolation of new bioactive compounds of natural origin. She has a number of national and international research collaborations and she participates to peer-reviewed research projects.

She is the author of more than 60 papers in ISI indexed international journals, n. 3 book chapters, n. 4 proceedings in international journals, n. 2 patents and more than 90 congress communications (oral and poster). She is an associated editor, an editorial board member and a reviewer for international Journals in the area of Pharmaceutical, Plant and Food Analysis.

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