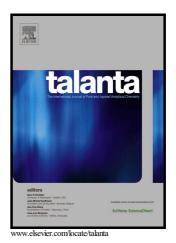
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ACCEPTED MANUSCRIPT

Application of Raman spectroscopy for direct analysis of *Carlina*

acanthifolia subsp. utzka root essential oil

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Abstract

Carlina genus plants e.g. *Carlina acanthifolia* subsp. *utzka* have been still used in folk medicine of many European countries and its biological activity is mostly associated with root essential oils.

In the present paper, Raman spectroscopy (RS) was applied for the first time for evaluation of essential oil distribution in root of *C. acnthifolia* subsp. *utzka* and identification of root structures containing the essential oil. Furthermore, RS technique was applied to assess

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