3rd Symposium of Young Researchers on Pharmacognosy

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BOOK OF ABSTRACTS

University of Szeged
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Structural modification of hydrocurcumins in the aim of increased antioxidant activity

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Tetrahydrocurcumin, hexahydrocurcumin and octahydrocurcumin are some of the major metabolites of curcumin. Like curcumin they exhibit various bioactivities such as antioxidant, anti-inflammatory or cardiovascular protective activity, but unlike curcumin, hydrocurcumins have much better bioavailability and are not considered pan-assay interference compounds (PAINS) [1,2]. In our earlier work we had concluded that based on the relationship between the pharmacokinetic properties and the antioxidant activities hexahydrocurcumin is the most promising lead compound of the three main curcumin metabolites [3].
In our present study we aimed to modify hexahydrocurcumin in a way to increase its pharmacokinetic and antioxidant potential. It has been found that the introduction of nitrone group to the vitamin E analogue Trolox has significantly increased its antioxidant activity [4]. In our attempts to introduce the nitrone functional groups to hexahydrocurcumin we have encountered unexpected outcomes and managed to isolate several new interesting hydrocurcumin derivatives using RP- and NP-HPLC methods. Among some metabolites of the starting material, four new, ring-closed derivatives have been identified. The structural conformation was done by NMR and HRMS measurements.

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