Detection of capsinoids by ESI-mass analysis

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**INTRODUCTION**

Capsaicinoids are the compounds responsible for the pungency in pepper fruits (Capsicum spp) and exhibit several healthy effects (Reyes-Escogido et al. 2011), however, their use is limited due to pungency. Another capsaicinoid-like substances, named **CAPSINOIDS**, have been discovered in pepper fruit extracts (Yazawa et al. 1989). Chemical structure and biologic activity of capsinoids are almost the same as the capsicinoids unlike pungency. As it happens with the capsaicinoids, pepper fruits may contain others capsinoids not yet described. Therefore is important develop new analytical techniques more accurate for determining minor compounds such as capsinoids.

**OBJECTIVE**

Optimization of a mass spectrometry method that allows accurate m/z measurements of capsinoid ions and their product ions and the characterization of the fragmentation patterns of capsiate and dihydrocapsiante.

**RESULTS**

ESI-MS² (QTOF) analysis (positive ion mode) and ESI-MSⁿ (ion trap) analysis (positive mode) were used

**PROPOSED FRAGMENTATION PATTERNS FOR CAPSIATE (A) AND DIHYDROCAPSIIATE (B)**

The most intense product ion was observed at m/z 159.0 corresponding to the sodiated vanillyl ring shared by all capsinoids.

The product ions at m/z 137.1 and 177.1 corresponding to different fragmentations of the sodiated vanillyl ring.

**CONCLUSION**

This study opens the possibility of applying ESI-MS(QTOF) analyses to identify potential unknown capsinoids in pepper fruit extracts and also to confirm the identification of the three know capsinoids in vegetable matrices. The fragmentation patterns obtained supply valuable information for further characterization of unknown capsinoid-type compounds.


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