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Author: Alexis Marsol-Vall Mercè Balcells Jordi Eras Ramon Canela-Garayoa

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A rapid gas chromatographic injection-port derivatization method for the tandem mass spectrometric determination of patulin and 5-hydroxymethylfurfural in fruit juices

Alexis Marsol-Vall[a], Mercè Balcells[a], Jordi Eras[a] and Ramon Canela-Garayoa[a,*]

[a]*Departament de Química, Universitat de Lleida-Agrotecnio Center, Avda. Alcalde Rovira Roure, 191, E-25198, Lleida, Spain.*

Corresponding author

email: Ramon Canela-Garayoa, canela@quimica.udl.cat

Highlights

- The method allows a rapid assessment of patulin and HMF in fruit juices.
- Injection-port derivatization with dual injection of the extract is performed.
- Important saving in terms of analysis time and derivatization reagent.
- No concentration and purification steps are needed.
- The method is accurate and with LOD below legal limit.

Abstract

A novel method consisting of injection-port derivatization coupled to gas chromatography tandem mass spectrometry is described. The method allows the rapid assessment of 5-hydroxymethylfurfural (HMF) and patulin content in apple and pear derivatives. The chromatographic separation of the compounds was achieved in a short chromatographic run (12.2 min) suitable for routine controls of these compounds in the fruit juice industry. The optimal conditions for the injection-port derivatization