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4-hydrazinobenzoic acid as a derivatizing agent for aldehyde analysis by HPLC-UV and CE-DAD

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ABSTRACT

Aldehydes are relevant analytes in a wide range of samples, in particular, food and beverages but also body fluids. Hydrazines can undergo nucleophilic addition with aldehydes or ketones giving origin to hydrazones (a group of stable imines) that can be suitably used in the identification of aldehydes. Herein, 4-hydrazinobenzoic acid (HBA) was, for the first time, used as the derivatizing agent in analytical methodologies using liquid chromatography aiming the determination of low-molecular aldehydes. The derivatization reaction was simultaneously performed along with the extraction process, using gas-diffusion microextraction (GDME), which resulted in a clean extract containing the HBA-aldehyde derivatives. The corresponding formed imines were determined by both high-performance liquid chromatography (LC) with UV spectrophotometric detection (HPLC-UV) and capillary electrophoresis with diode array detection (CE-DAD). HBA showed to be a rather advantageous derivatization reagent due to its

¹ These authors contributed equally for this work.

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