عنوان مقاله:

Determination of Fenvalerate reside in raisin via vortex-assisted surfactant-enhanced emulsification liquid–liquid microextraction (VSLLME) method by using HPLC system

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خلاصه مقاله:

In this project, ultra-trace amounts of Fenvalerate residue in raisin, were determined via vortex-assisted surfactant-enhanced emulsification liquid–liquid micro extraction (VSLLME) method and by using HPLC-PDA detector at 225nm. In the VSLLME method, the extraction solvent is dispersed into the aqueous samples by assistance of vortex agitator. Meanwhile, the addition of a surfactant, which was used as an emulsifier, could enhance the rate of the mass-transfer from aqueous samples to the extraction solvent. The main parameters relevant to this method were investigated and the optimum conditions were established: 20 µL chlorobenzene was used as extraction solvent, 0.9 mmol.L-1CTAB was selected as the surfactant, the extraction time was fixed at 60s, 2% sodium chloride was added and the extraction process was performed under the room temperature. Under the optimum conditions, limit of detection (LOD) was 0.3 ng mL-1. The relative standard deviation (RSD, n=6) was 2.87%. The linearity was obtained by five points in the concentration range of 0.3 to 100.0 ng mL-1. Correlation coefficients (R2) was 0.9997, and the enrichment factor (EF) was 114. Finally, the proposed method has been successfully applied for determination of Fenvalerate in real samples. The recoveries of the target analyte in raisins samples were between 84.13% and 92.12%.

کلمات کلیدی:

Fenvalerate, HPLC, Raisin, Vortex-assisted, surfactant-enhanced-emulsification

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