

عنوان مقاله:

Polyaniline/Graphene Nanocomposite as a Promising Sorbent for Dispersive Solid Phase Extraction of Avermectins from Citrus Fruit Juice

محل انتشار:

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خلاصه مقاله:

A solid phase extraction sorbent based on polyaniline/graphene nanocomposite is presented. The structure and morphology of synthesized nanocomposite were investigated by Fourier transform infrared spectroscopy, field emission scanning electron microscopy, X-ray diffraction and thermal gravimetric analysis. The dispersive solid phase extraction was employed to the isolation and preconcentration of avermectins insecticide (mixture of B1a and B1b). The extraction procedure was investigated by high performance liquid chromatography-UV detection. The sorbent demonstrated a favorable analytical performance for avermectins detection with reasonable linear ranges ($1.5-1000 \mu\text{g L}^{-1}$ and $5.0-1000 \mu\text{g L}^{-1}$ for B1a and B1b in order) and acceptable detection limits ($0.5 \mu\text{g L}^{-1}$ for B1a and $2.5 \mu\text{g L}^{-1}$ for B1b) under optimized conditions. The extraction efficiency of polyaniline/graphene nanocomposite in the extraction of avermectins was compared with graphene, polyaniline, carbon nanotube and C18 sorbents. Moreover, the applicability of proposed method was assessed for the extraction of analyte from citrus fruit juice.

کلمات کلیدی:

Polyaniline/graphene nanocomposite, Dispersive solid phase extraction, Avermectins, High performance liquid chromatography, Citrus fruit juice

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