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**Determination of semicarbazide in fish by molecularly imprinted stir bar sorptive extraction coupled with high performance liquid chromatography**

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**Abstract**

A novel molecularly imprinted stir bar (MI-SB) for sorptive extraction of semicarbazide (SEM) was prepared in present paper. The coating of the stir bar was characterized by scanning electron microscopy, Fourier-transform infrared spectroscopy, dynamic adsorption and static adsorption tests. The saturated adsorption of MI-SB was about 4 times over that of non-imprinted stir bar (NI-SB). The selectivity of MI-SB for SEM was much better than NI-SB. A method to determine SEM was established by coupling MI-SB sorptive extraction with HPLC-UV. The linear range was 1-100 ng/mL for SEM with a correlation coefficient of 0.9985. The limit of detection was about 0.59 ng/mL, which was below the minimum required performance limit of SEM in meat products regulated by European Union. The method was applied to the determination of SEM in fish samples with satisfactory results.

**Key words**

Semicarbazide, Stir bar sorptive extraction, Molecularly imprinted polymer, High performance liquid chromatography, Residue determination

**1. Introduction**

Nitrofurans (NFs) are a group of synthetic broad-spectrum antimicrobials. Their structures contain 5-nitrofur ring and various substituents in the 2-position. NFs,

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