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1 **Preparation and application of surface molecularly imprinted silica gel for**
2 **selective extraction of melamine from milk samples**

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7 **Abstract**

8 Highly selective molecularly imprinted layer-coated silica gel (MIP@SiO₂) for
9 melamine (MEL) was prepared by surface molecular imprinting technique on the
10 supporter of silica gel. None imprinted polymer layer-coated silica gel (NIP@SiO₂)
11 and bulk molecularly imprinted polymer (MIP) were also prepared for comparison.
12 Characterization and performance tests of the obtained products revealed that
13 MIP@SiO₂ not only had excellent selectivity to the target molecule MEL compared
14 with NIP@SiO₂, but also displayed absorption capacity superior to MIP due to the
15 molecular recognition sites on the surface of silica gel. As the MIP@SiO₂ were
16 adopted as the adsorbents of solid-phase extraction for detecting MEL in milk
17 samples, the recoveries of spiked samples ranged from 75.6 to 96.8% with the relative
18 standard deviation of spiked samples less than 10%, which reveals that the
19 MIP@SiO₂ were efficient SPE adsorbents for melamine.

20 *Keywords:* molecularly imprinted polymer; silica gel; solid-phase extraction;
21 melamine;

22

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