

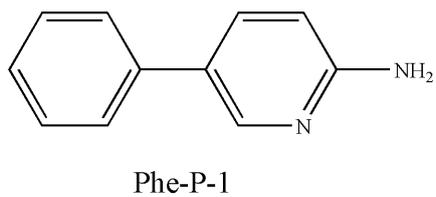
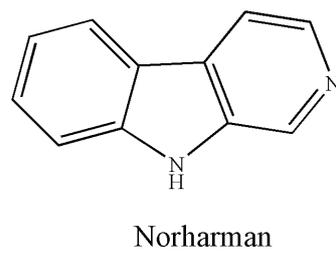
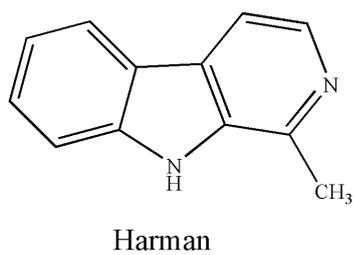
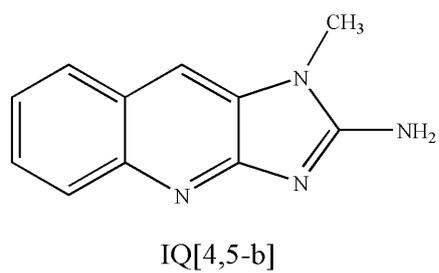
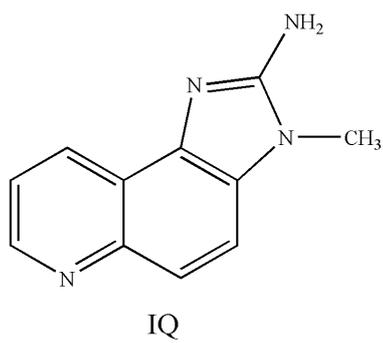
**Development of a Modified QuEChERS method based on Magnetic Multiwalled Carbon Nanotubes as a Clean-up Adsorbent for the Analysis of Heterocyclic Aromatic Amines in Braised Sauce Beef**

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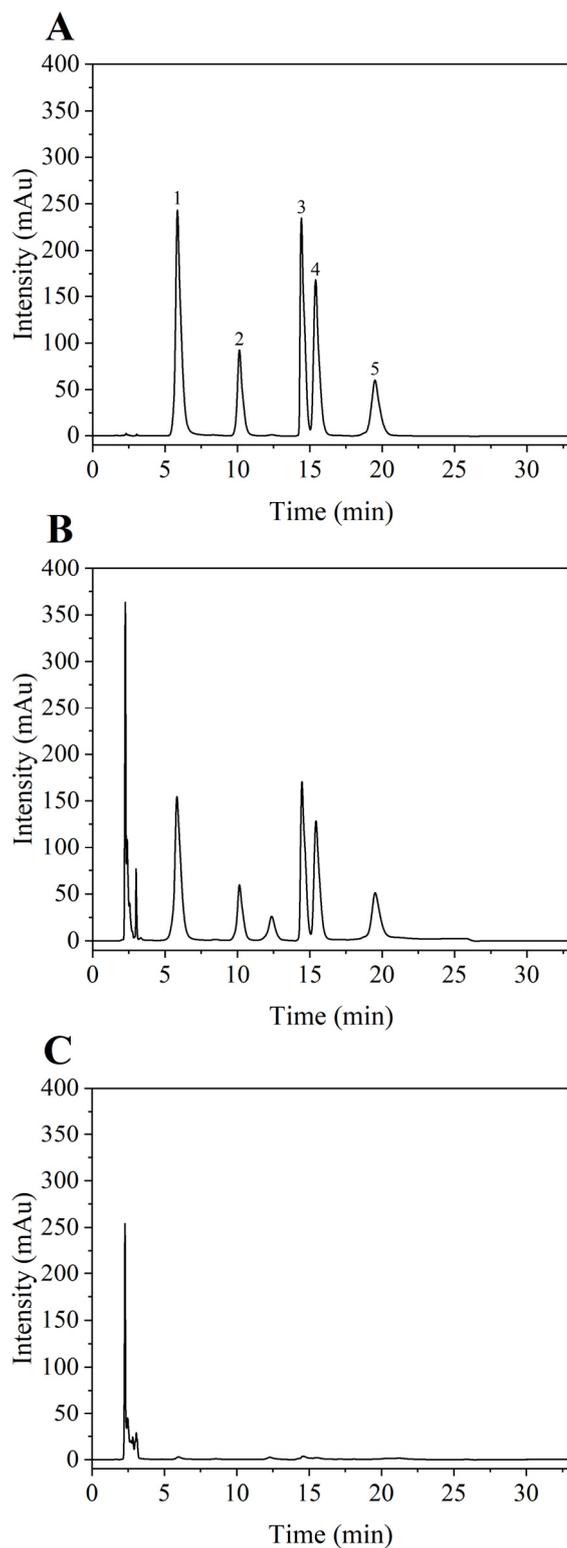
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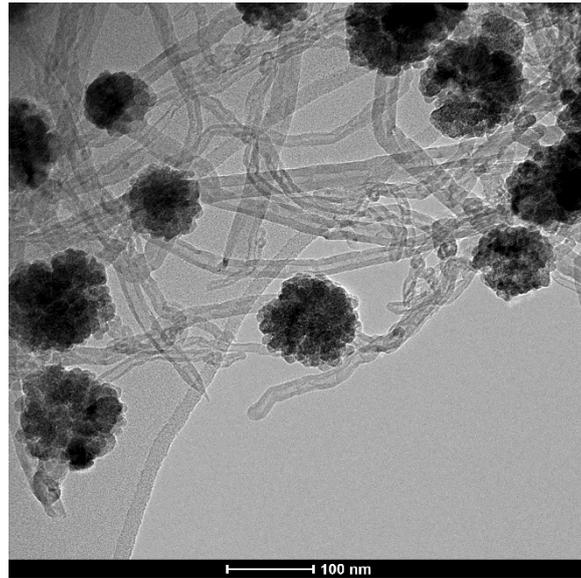
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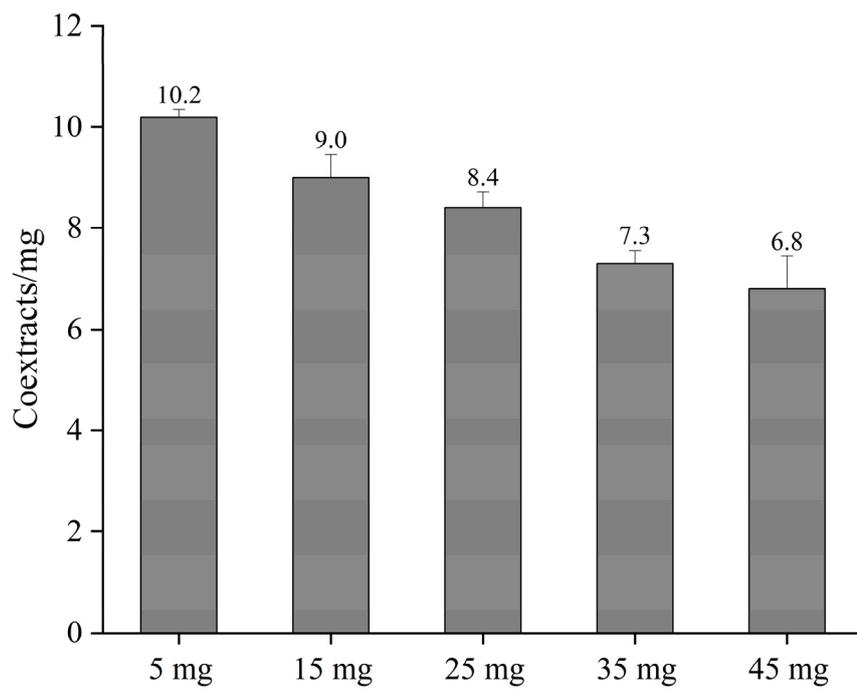
**Figure S1.** Chemical structures of the studied HAAs.



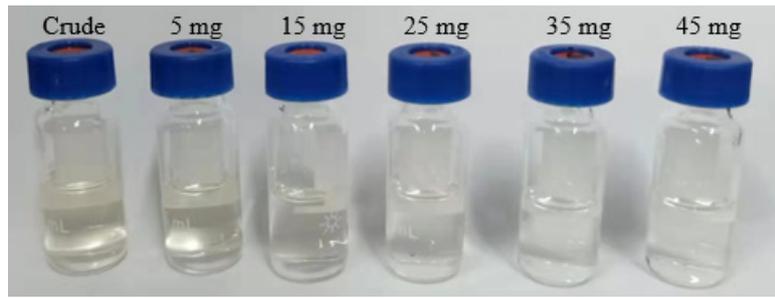
**Figure S2.** Chromatograms of the mixed standard solution (A), the spiked braised sauce beef extract (B) and the blank braised sauce beef extract (C) prepared with the proposed QuEChERS method. Peak assignments: (1) IQ, (2) IQ[4,5-b], (3) Harman, (4) Norharman, (5) Phe-P-1. Spiked concentrations, 1.0  $\mu\text{g/g}$  for IQ, Harman and Norharman, 0.5  $\mu\text{g/g}$  for IQ[4,5-b] and Phe-P-1.



**Figure S3.** TEM image of Fe<sub>3</sub>O<sub>4</sub>-MWCNTs.



**Figure S4.** Amount of co-extracted matrix obtained through gravimetric analysis after purification with different amounts of Fe<sub>3</sub>O<sub>4</sub>-MWCNTs in the QuEChERS method (n = 3).



**Figure S5.** Photographs of braised sauce beef extract after purification with different amounts of Fe<sub>3</sub>O<sub>4</sub>-MWCNTs.

**Table S1.** HAAs measured in analyzed braised sauce beef samples.

<b>Samples</b>	<b>IQ</b>	<b>IQ[4,5-b]</b>	<b>Harman</b>	<b>Norharman</b>	<b>Phe-P-1</b>
Beef 1	n.q. <sup>1</sup>	-	n.q.	n.q.	-
Beef 5	n.q.	-	-	-	-
Beef 8	n.q.	-	n.q.	n.q.	-
Beef 13	n.q.	-	n.q.	n.q.	-
Beef 14	n.q.	-	n.q.	n.q.	-

<sup>1</sup> n.q.-not quantified (<LOQ), HAAs could be detected but not quantified.