

Supramolecular solvent-based microextraction of selected anticonvulsant and nonsteroidal anti-inflammatory drugs from sediment samples

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SUPPLEMENTARY INFORMATION

Summary

This supporting information file includes additional results and information as described in the text of the main article including:

- Table S1.** Properties of selected drugs.
- Table S2.** Accuracy and precision of the developed methods.
- Figure S1.** Effect of the amount of DeA on the recovery of analytes.
- Figure S2.** Influence of supramolecular solvent volume on recovery and enriching analytes.
- Figure S3.** The effect of sample mass on recovery and enrichment of analytes.
- Figure S4.** Influence of extraction time on recovery of analytes.
- Figure S5a.** Influence of centrifugation time on recovery of analytes.
- Figure S5b.** The effect of centrifugation rotation on the recovery of analytes.
- Figure S6.** Freundlich adsorption isotherm for ibuprofen.
- Figure S7.** Determination of the K_D parameter for ibuprofen.

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Table S1. Properties of selected drugs.

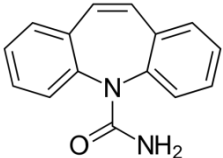
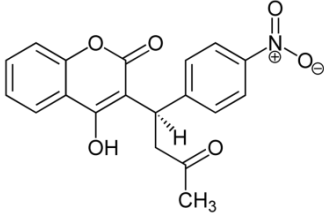
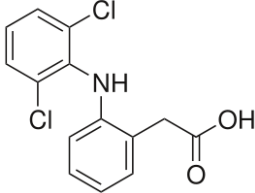
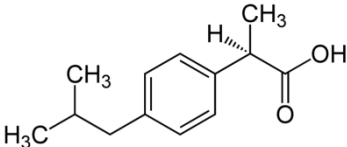
<i>Compound</i>	<i>Structural formula</i>	<i>logP</i>	<i>pK_a</i>
CBZ		2.77	13.9
ACE		3.42	5.1
DIC		4.26	4.1
IBU		3.94	4.9

Table S2. Accuracy and precision of the developed methods.

<i>Compound</i>	<i>Theoretical concentration ($\mu\text{g g}^{-1}$) / ($\mu\text{g L}^{-1}$)</i>	<i>Measure concentration ($\mu\text{g g}^{-1}$) / ($\mu\text{g L}^{-1}$)</i>	<i>SD^a ($\mu\text{g g}^{-1}$) / ($\mu\text{g L}^{-1}$)</i>	<i>RE^b (%)</i>	<i>CV^c (%)</i>
<i>Bottom sediment samples</i>					
CBZ	1.25	1.41	0.062	13	10
	10	11.1	0.44	11	9.1
	20	20.9	1.32	4.9	12
DIC	1.25	1.32	0.061	5.5	11
	10	10.8	0.54	7.8	11
	20	19.8	1.13	-0.8	11
IBU	1.25	1.23	0.032	-1.5	5.8
	10	10.8	0.24	8.2	5.4
	20	19.3	1.14	-3.5	11
<i>Water samples</i>					
CBZ	0.5	0.48	0.042	-4.9	9.2
	2	2.1	0.13	4.9	3.4
	4	4.1	0.34	1.4	6.9
DIC	0.5	0.45	0.034	-10	7.7
	2	2.1	0.003	3.8	0.9
	4	4.1	0.35	7.5	6.4
IBU	0.5	0.47	0.044	-6.0	8.9
	2	2.2	0.004	11	0.6
	4	4.1	0.32	2.1	7.1

^a SD – standard deviation^b RE – relative error^c CV – coefficient of variation

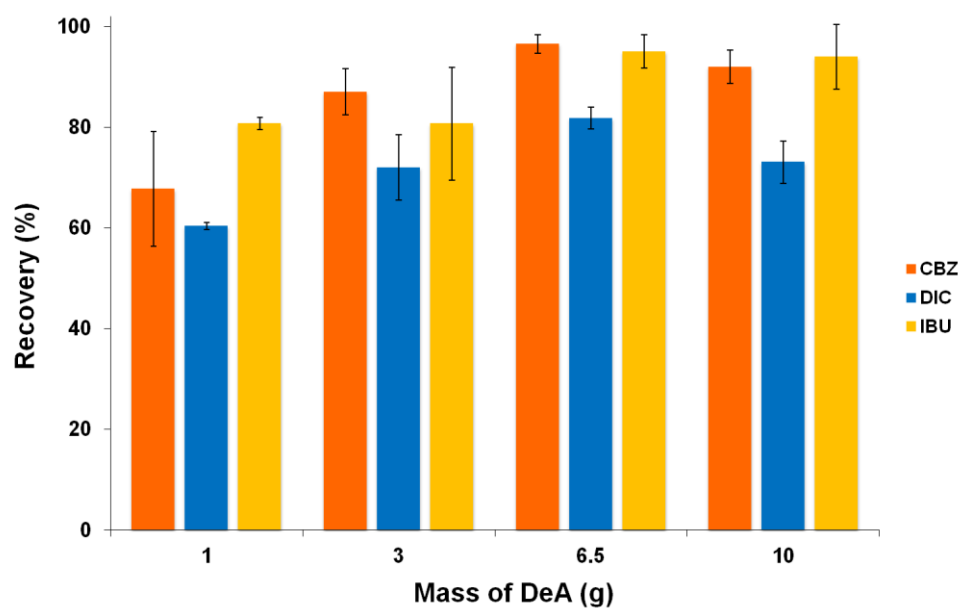


Figure S1. Effect of the amount of DeA on the recovery of analytes.

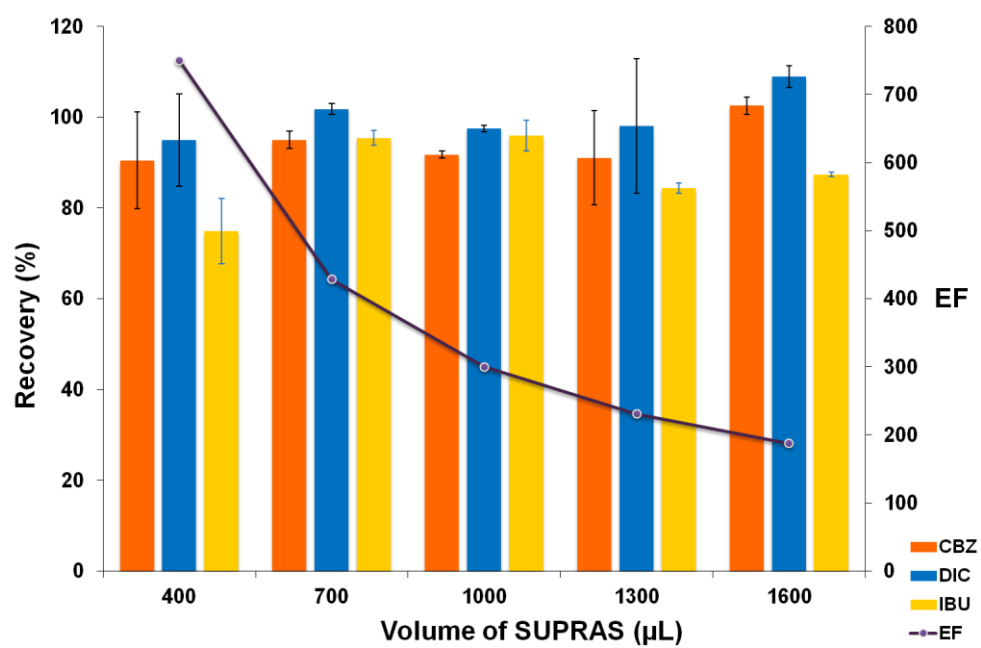


Figure S2. Influence of supramolecular solvent volume on recovery and enriching analytes.

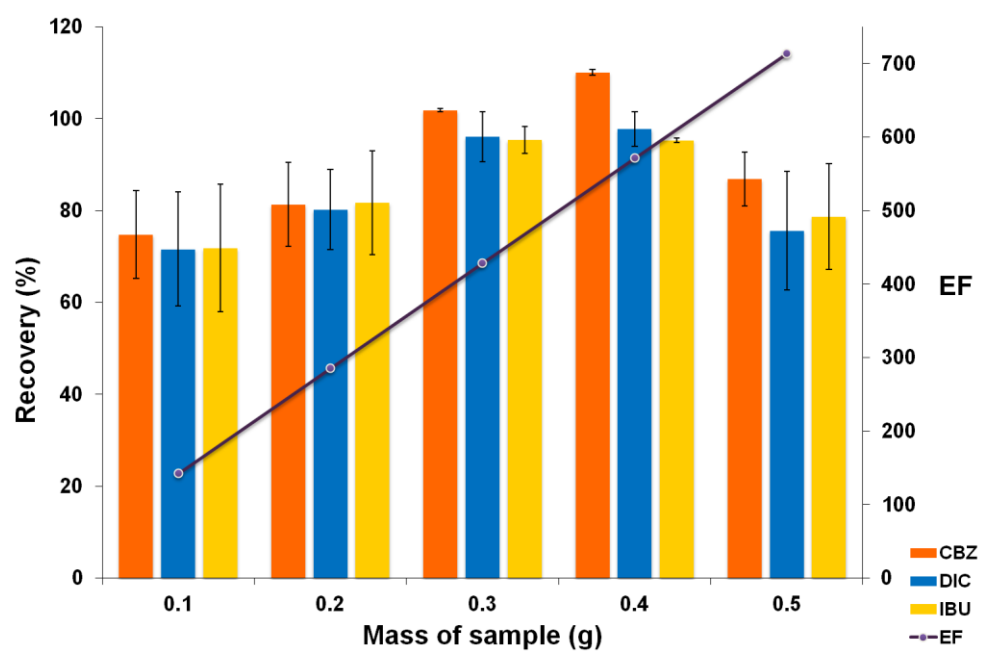


Figure S3. The effect of sample mass on recovery and enrichment of analytes.

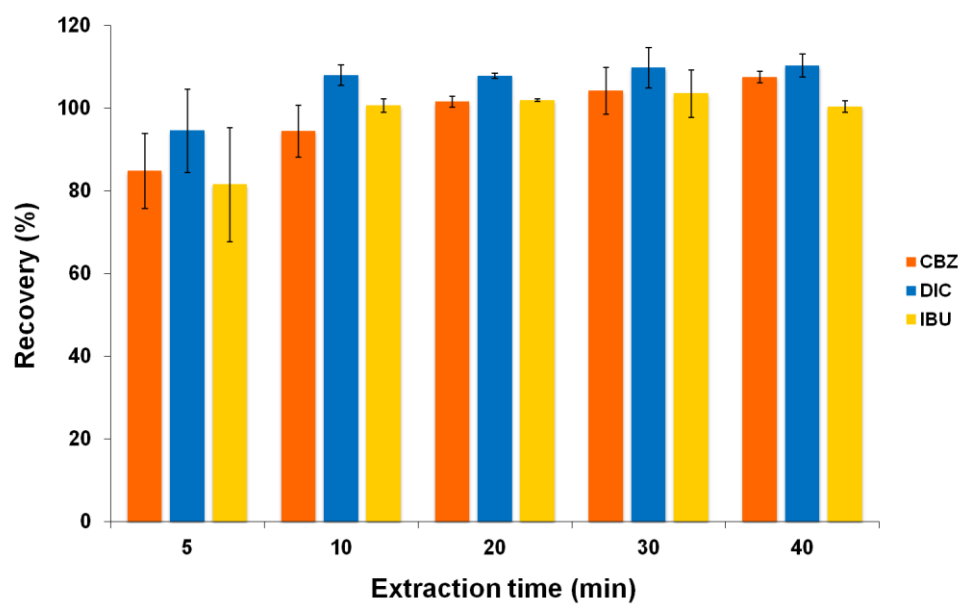


Figure S4. Influence of extraction time on recovery of analytes.

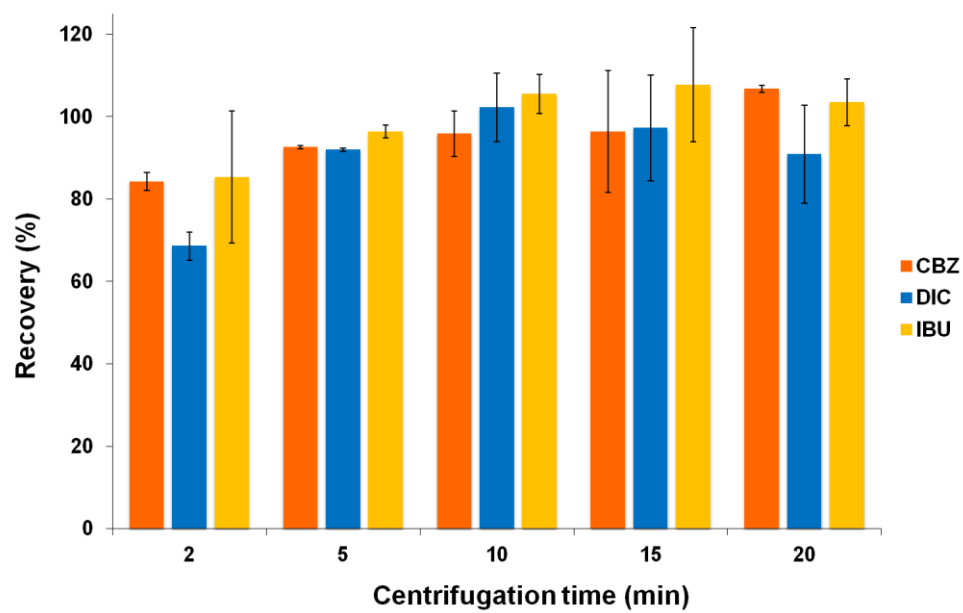


Figure S5a. Influence of centrifugation time on recovery of analytes.

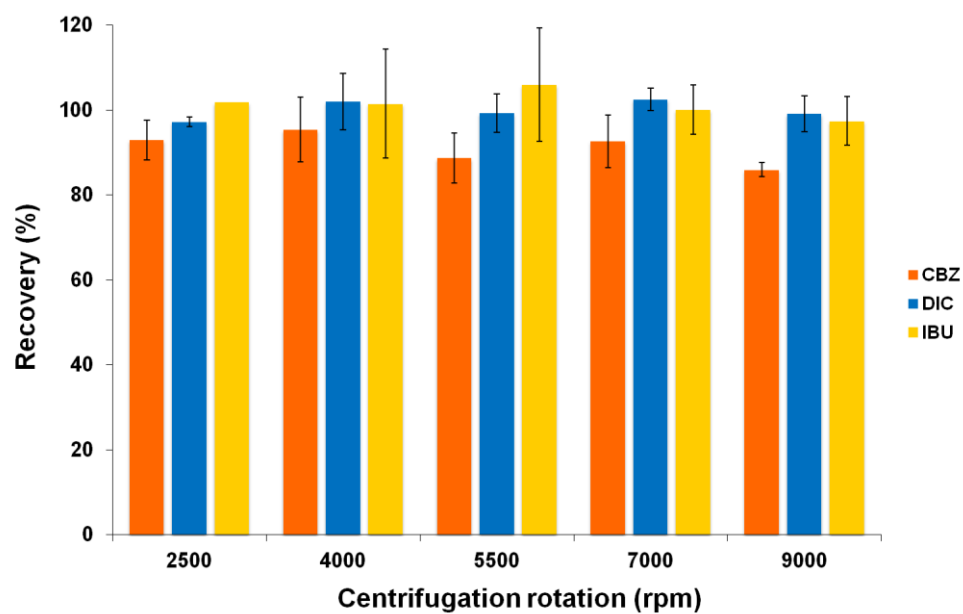


Figure S5b. The effect of centrifugation rotation on the recovery of analytes.

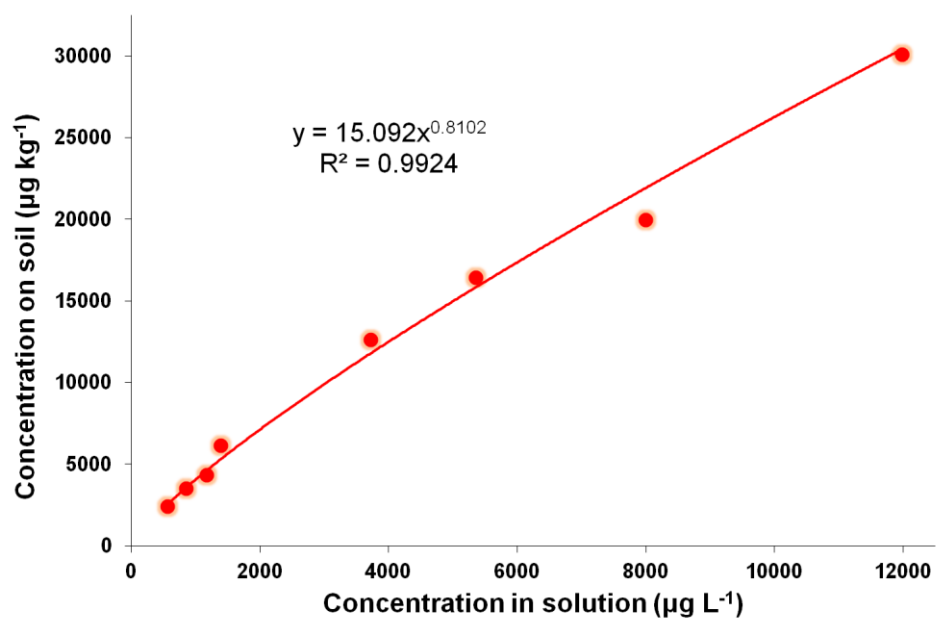


Figure S6. Freundlich adsorption isotherm for ibuprofen.

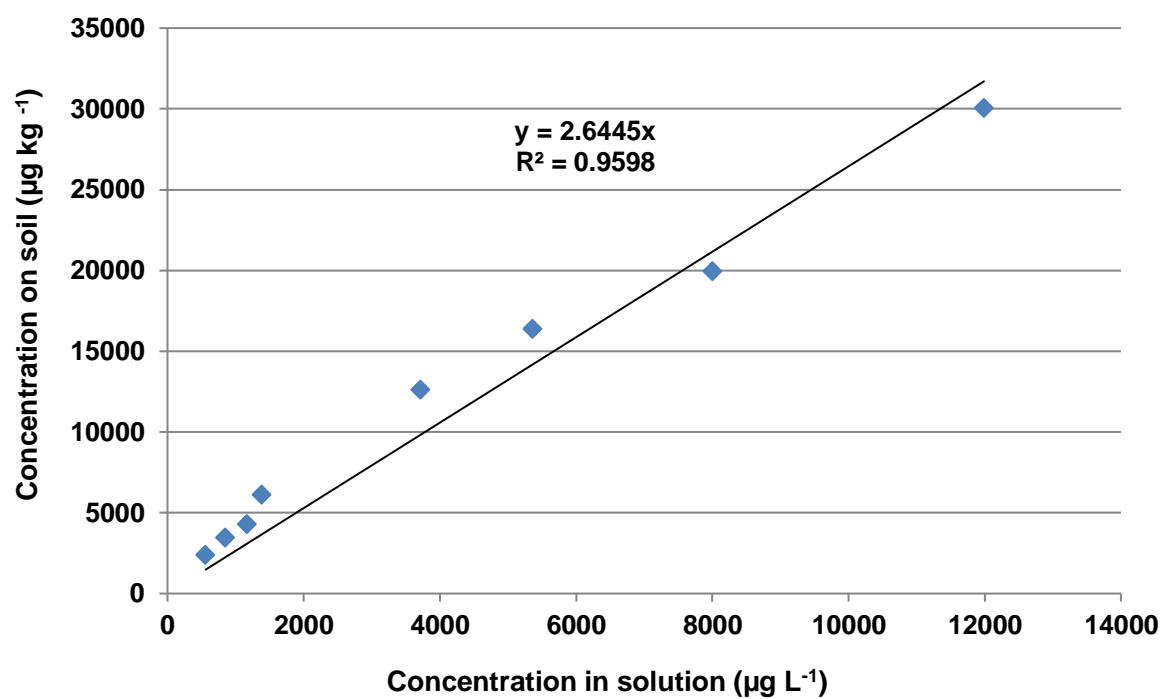


Figure S7. Determination of the K_D parameter for ibuprofen.