Hollow fiber based liquid-liquid-liquid microextraction combined with sweeping micellar electrokinetic chromatography for the sensitive determination of the second-generation antidepressants in biological samples

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Supplemental materials

Fig. S1 Influence of NaOH concentration on HF-LLLME. Conditions: sample volume: 6 mL, without salt addition, acceptor phase: 10 μL 0.2 mol L^{-1} HAc, stirring rate: 800 rpm, extraction time: 30 min, sample concentration: 200 μg L^{-1}.

Fig. S2 Influence of extraction time on HF-LLLME. Conditions: donor phase: 6 mL 0.1 mol L^{-1} NaOH sample solution, without salt addition, acceptor phase: 10 μL 0.1 mol L^{-1} HAc, stirring rate: 1000 rpm, sample concentration: 200 μg L^{-1}.

Fig. S3 Influence of NaCl concentration on HF-LLLME. Conditions: donor phase: 6 mL 0.1 mol L^{-1} NaOH sample solution, acceptor phase: 10 μL 0.1 mol L^{-1} HAc, stirring rate: 1000 rpm, sample concentration: 200 μg L^{-1}.

Fig. S4 Influence of SDS concentrations on Sweeping-MEKC. BGE: 76% (v/v) 50 mmol L^{-1} citric acid/Na_2HPO_4 (pH 2.2) and 24% (v/v) IPA; hydrodynamic injection: 50 mbar for 120 s.

Fig. S5 Influence of IPA content in sample media on Sweeping-MEKC. 0% IPA (a) and 22% IPA (b). BGE: 76% (v/v) 50 mmol L^{-1} citric acid/Na_2HPO_4 (pH 2.2) containing 100 mmol L^{-1} SDS and 24% (v/v) IPA; hydrodynamic injection: 50 mbar for 120 s.

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Fig. S6 Influence of injection time on Sweeping-MEKC. BGE: 76% (v/v) 50 mmol L^{-1} citric acid/Na_2HPO_4 (pH 2.2) containing 100 mmol L^{-1} SDS and 24% (v/v) IPA; sample matrix: 78% (v/v) 100 mmol L^{-1} HAc and 22% (v/v) IPA.

Fig. S7 Influence of plasma matrix on extraction efficiency. BGE: 76% (v/v) 50 mmol L^{-1} citric acid/Na_2HPO_4 (pH 2.2) containing 100 mmol L^{-1} SDS and 24% (v/v) IPA.

Table. S1 Comparison of LODs (μg L^{-1}) for the analysis of SSRIs.

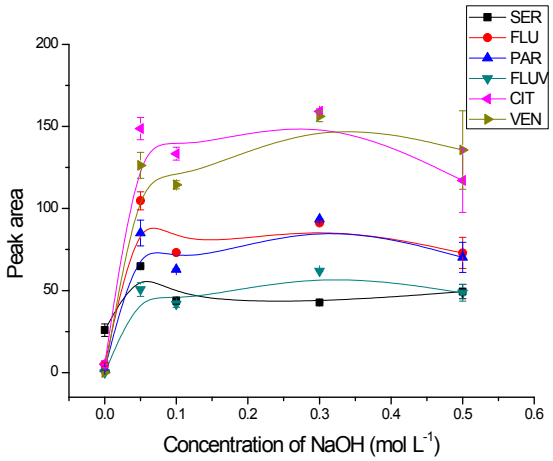
SER
FLU
PAR
FLUV
CIT
VEN
Peak area
200
150
100
50
0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
Concentration of NaOH (mol L-1)

Fig. S1

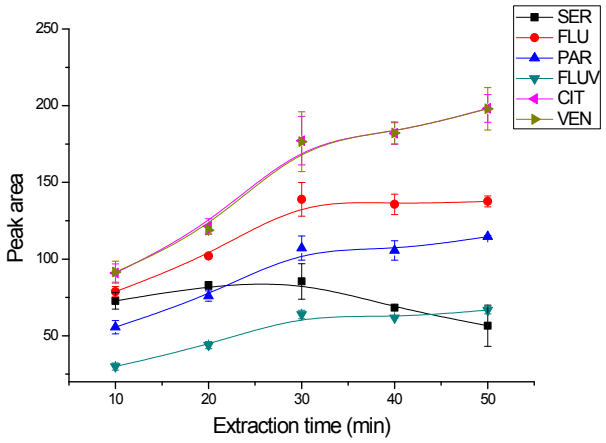
SER
FLU
PAR
FLUV
CIT
VEN
Peak area
250
200
150
100
50
10
20
30
40
50
Extraction time (min)

Fig. S2

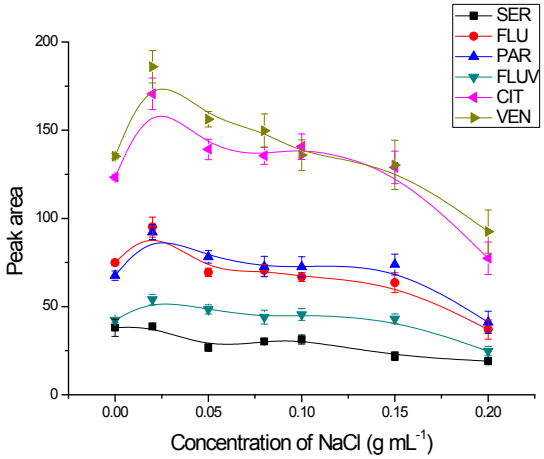
SER
FLU
PAR
FLUV
CIT
VEN
Peak area
200
150
100
50
0
0.00
0.05
0.10
0.15
0.20
Concentration of NaCl (g mL-1)

Fig. S3

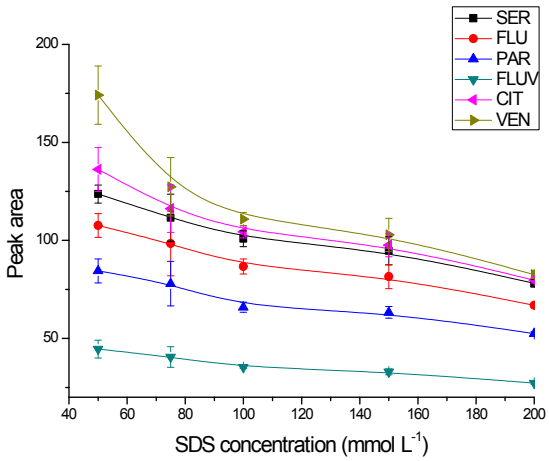
SER
FLU
PAR
FLUV
CIT
VEN
Peak area
200
150
100
50
40
60
80
100
120
140
160
180
200
SDS concentration (mmol L-1)

Fig. S4

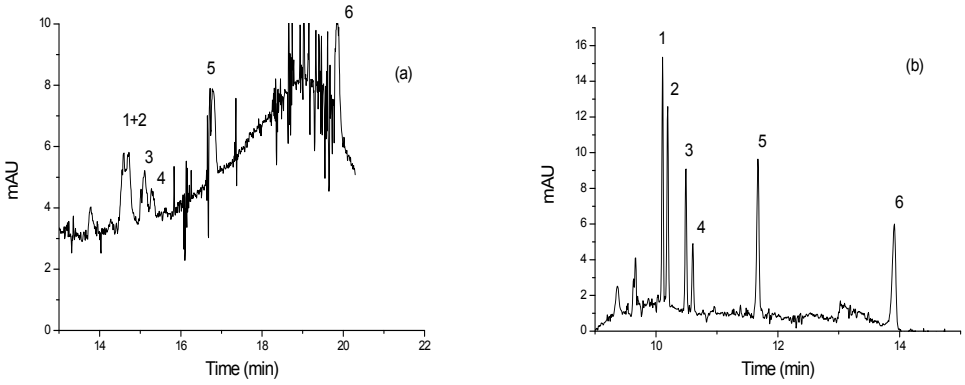

Fig. S5

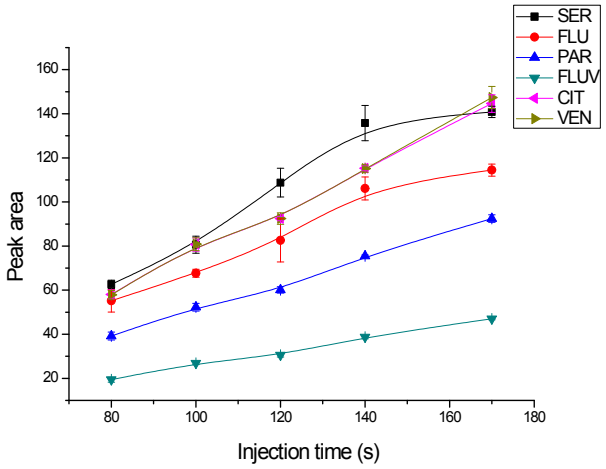
SER
FLU
PAR
FLUV
CIT
VEN
Peak area
Injection time (s)
20
40
60
80
100
120
140
160
80
100
120
140
160
180

Fig. S6

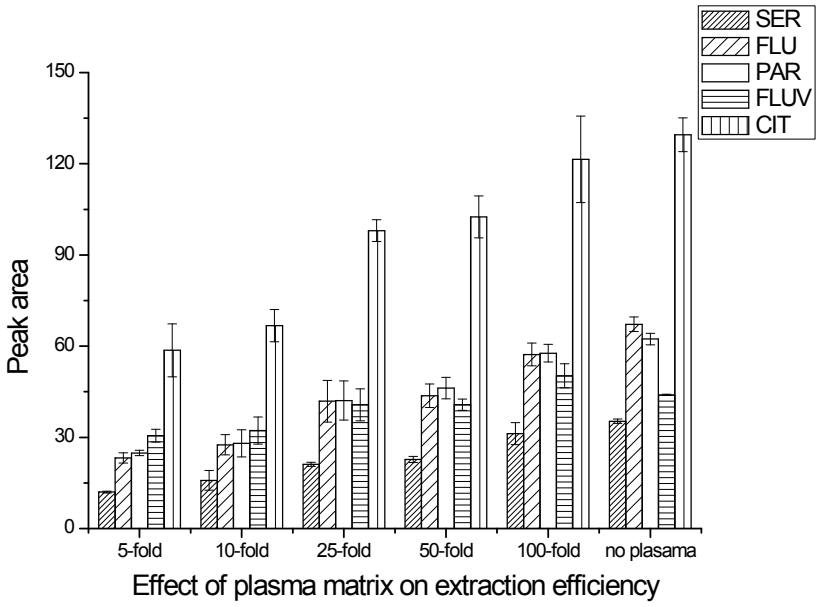
SER
FLU
PAR
FLUV
CIT
Peak area
150
120
90
60
30
0
5-fold
10-fold
25-fold
50-fold
100-fold
no plasama
Effect of plasma matrix on extraction efficiency

Fig. S7

Table S1 Comparison of LODs (μg L^{-1}) with other methods for the determination of SSRIs.

Analytical methods	SER	FLU	PAR	FLUV	CIT	VEN	Sample	Refs
DLLME-FASS-CE-UV	0.76	---	---	---	---	---	urine	35
SPE-CSEI-Sweeping-MEKC	0.1	0.1	0.12	0.22	0.056	---	plasma	12
HF-LLLME-HPLC-FL	---	<5	---	---	---	---	plasma	7
HF-LLLME-HPLC/UV	0.7	---	---	---	---	---	plasma/tap water	8
SPME(PDMS-DVB)-GC-MS	0.23	0.25	---	0.38	0.11	0.21	urine/water	3
In-tube SPME-HPLC-MS	2.64	0.10	0.08	2.84	0.06	---	urine	10
HF-LLLME-Sweeping-MEKC	0.40	0.42	0.75	1.55	0.18	---	plasma/urine	This work