

Supporting Information to:

Source identification of amphetamine-like stimulants in Spanish wastewater through enantiomeric profiling

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Table S1. Details on WWTP samples. Sampling Mode: T means time proportional, followed by subsampling interval and volume taken per subsample. Dates presented as DD-MM.

City	Bilbao and its metropolitan area		Castellón		Madrid (northern area)		Palma (and small nearby locations)	Santiago de Compostela	
WWTP name	Galindo		Castellón de la Plana		Viveros de la Villa		Palma II	Silvouta	
Year	2018	2019	2018	2019	2018	2019	2018	2018	2019
Population served	860237	860237	171669	170888	227869	440800	406492	136500	136500
Sampling mode	T: 60 min, 100 mL	T: 60 min, 100 mL	T: 15 min, 100 mL	T: 15 min, 100 mL	T: 30 min, 400 mL	T: 30 min, 400 mL	T: 15 min, 100 mL	T: 10 min, 150 mL	T: 10 min, 150 mL
Sampling date 1	17-04	11-06	11-04	10-04	20-06	28-03	18-04	13-03	21-05
Sampling date 2	18-04	12-06	12-04	11-04	21-06	29-03	19-04	14-03	22-05
Sampling date 3	19-04	13-06	13-04	12-04	22-06	30-03	20-04	15-03	23-05
Sampling date 4	20-04	14-06	14-04	13-04	23-06	31-03	21-04	16-03	24-05
Sampling date 5	21-04	15-06	15-04	14-04	24-06	01-04	22-04	17-03	25-05
Sampling date 6	22-04	16-06	16-04	15-04	25-06	02-04	23-04	18-03	26-05
Sampling date 7	23-04	17-06	17-04	16-04	26-06	03-04	24-04	19-03	27-05
Flow (m³day⁻¹) day 1	287205	158474	33363	38065	46726	88731	48840	102672	47188
Flow (m³day⁻¹) day 2	268352	191603	46317	37318	41622	89023	51905	111999	48858
Flow (m³day⁻¹) day 3	256858	181234	37625	38219	42978	82968	50979	122643	46191
Flow (m³day⁻¹) day 4	246420	157339	32524	37788	45240	83700	48866	110231	44786
Flow (m³day⁻¹) day 5	230364	161906	30611	37530	36262	94030	47468	101111	46072
Flow (m³day⁻¹) day 6	245068	176885	29959	36590	45065	94247	46457	97817	45045
Flow (m³day⁻¹) day 7	312461	180991	29597	37743	47045	93131	50180	99917	44514
Location of autosampler	After pretreatment		Before fine screen		After fine screen		After fine screen	After fine screen	

Table S2. Retention time (RT), quantification (Q1) and qualification (Q2) transitions, cone voltage (CV), collision energy (CE) and internal standards (ISs) of the determined compounds by LC- MS/MS

Compound	RT /min	CV /V	Q ₁ m/z	CE /eV	Q ₂ m/z	CE /eV
R(-)- AMP	7.58					
S(+)- AMP	8.52	24	136 > 91	16	136 > 119	10
R(-)- MAMP	9.84					
S(+)- MAMP	10.59	28	150 > 91	16	150 > 119	10
R(-)- MDMA	19.34					
S(+)- MDMA	21.51	28	194 > 163	12	194 > 105	26
R(-)- AMP-d6	7.45					
S(+)- AMP-d6	8.35	24	142 > 125	16	-	-
R(-)- MAMP-d5	9.82					
S(+)- MAMP-d5	10.55	28	155 > 92	16	-	-
R(-)- MDMA-d5	19.21					
S(+)- MDMA-d5	21.43	28	199 > 165	12	-	-

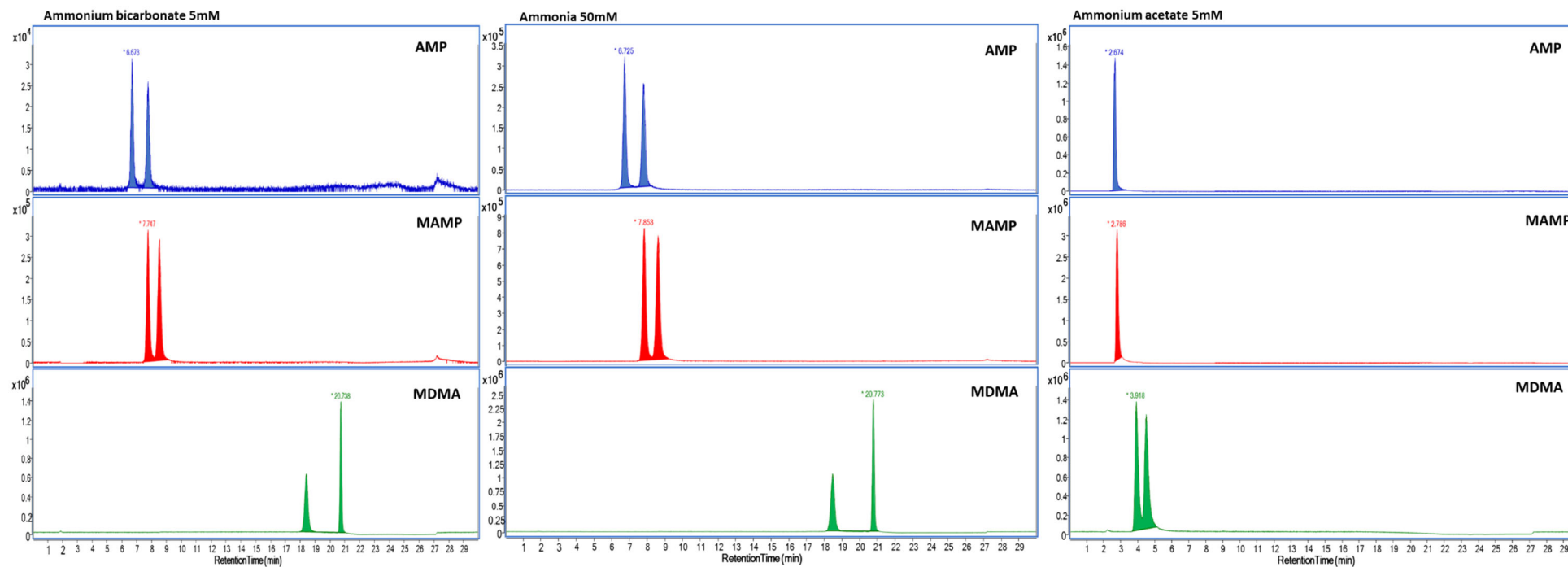


Figure S1. Chromatograms illustrating the separation of AMP, MAMP and MDMA enantiomers with different eluent modifiers.

Figure S2. Recoveries (a) and matrix effects (expressed in percentages of recovery) b) observed for the SPE of 100 mL of wastewater spiked with 125 ng L⁻¹ of each analyte (n=3) with Oasis MCX cartridges, when the methanolic clean-up is performed (blue bars) and when no clean-up is performed (red bars).

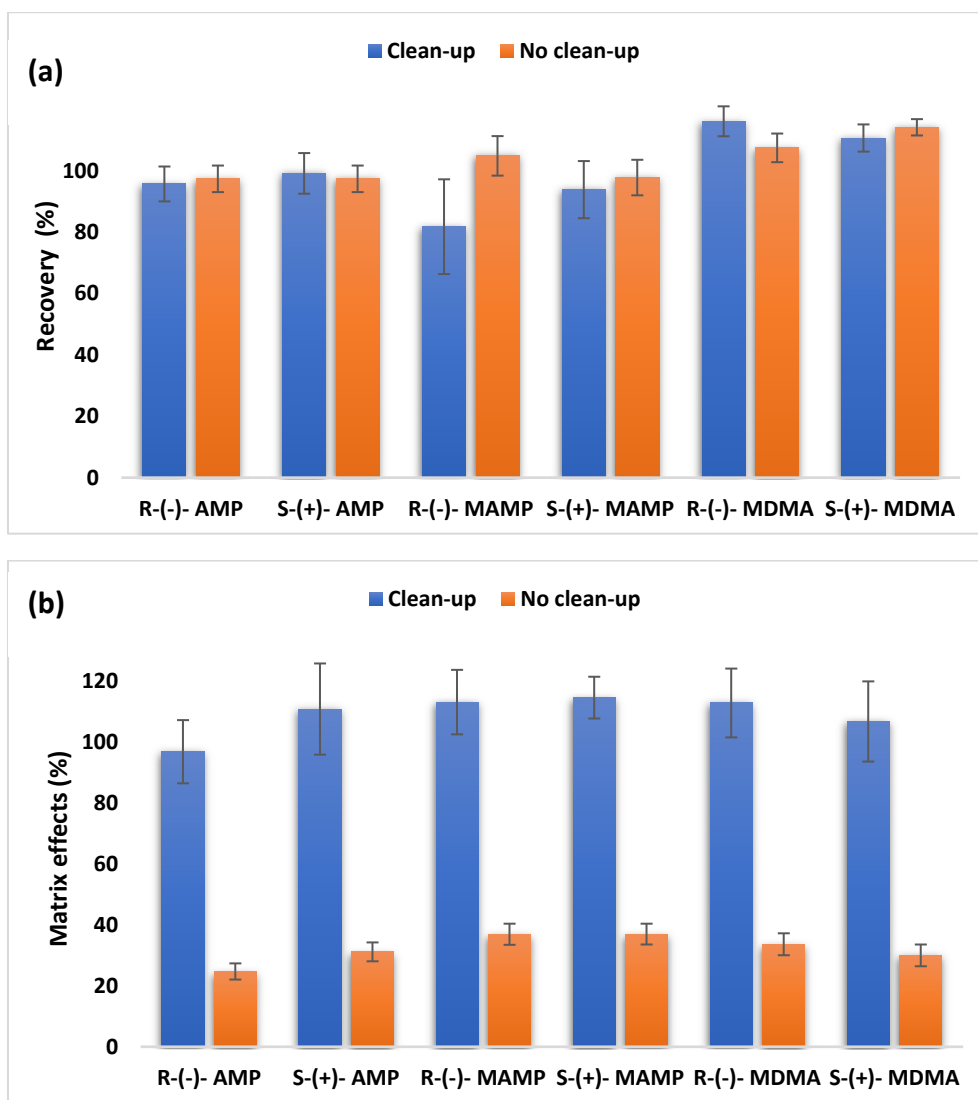


Table S3. Overview of chiral methods published in the literature for the determination of amphetamine-like drugs as compared to this work.

Reference	Extraction	Chromatography	Recoveries	IQL (ng mL ⁻¹)	MQL (ng L ⁻¹)
This work	100 mL sample, Oasis MCX 150 mg, elution with 3 mL MeOH (5% ammonia) after clean-up with 5 mL MeOH	Lux AMP column (150 × 3 mm, 3 μm) Eluent: 50 mM ammonia in water/methanol (gradient) Run time: 30 min	82-116 %	0.6-1.4	2.4-5.5
1-3 ^a	50-100 mL sample, Oasis HLB 60 mg, elution with 4-6 mL MeOH	Chiral-CBH column (100 × 2 mm, 5 μm) Eluent: 1 mM (pH 5) ammonium acetate/isopropanol (90/10) Run time: up to 140 min	83.2-88.5 %	0.40-0.75	0.5-4.4
4 ^b	40 mL sample, Oasis HLB 60 mg, elution with 5 mL MeOH	Chirobiotic V2 column (250 × 2.1 mm, 5 μm) Eluent: methanol/acetic acid/ammonium hydroxide (10/0.1/0.025) Run time: approx. 20 min	69.2-90.4 %	0.60-3.0	Not reported
5	50 mL sample, Oasis HLB 60 mg, elution with 4 mL MeOH	Chiral-CBH column (100 × 2 mm, 5 μm) Eluent: 1 mM ammonium acetate/methanol (85/15) Run time: not given	83.2-88.5 %	0.12-0.50	0.66-2.9

^a Different variants of the same method, some including further analytes; ^b This method did not consider MDMA

References: **[1]** B. Kasprzyk-Hordern, V.V.R. Kondakal, D.R. Baker, Enantiomeric analysis of drugs of abuse in wastewater by chiral liquid chromatography coupled with tandem mass spectrometry, *J. Chromatogr. A.* 1217 (2010) 4575–4586; **[2]** P. Vazquez-Roig, B. Kasprzyk-Hordern, C. Blasco, Y. Picó, Stereoisomeric profiling of drugs of abuse and pharmaceuticals in wastewaters of Valencia (Spain), *Sci. Total Environ.* 494–495 (2014) 49–57; **[3]** E. Castrignanò, A. Lubben, B. Kasprzyk-Hordern, Enantiomeric profiling of chiral drug biomarkers in wastewater with the usage of chiral liquid chromatography coupled with tandem mass spectrometry, *J. Chromatogr. A.* 1438 (2016) 84–99; **[4]** J. Gao, Z. Xu, X. Li, J.W. O'Brien, P.N. Culshaw, K. V. Thomas, B.J. Tschärke, J.F. Mueller, P.K. Thai, Enantiomeric profiling of amphetamine and methamphetamine in wastewater: A 7-year study in regional and urban Queensland, Australia, *Sci. Total Environ.* 643 (2018) 827–834; **[5]** E. Archer, E. Castrignanò, B. Kasprzyk-Hordern, G.M. Wolfaardt, Wastewater-based epidemiology and enantiomeric profiling for drugs of abuse in South African wastewaters, *Sci. Total Environ.* 625 (2018) 792–800.

Table S4. Analytical performance figures obtained with method B.

Compound	Trueness (%R) and Precision (%RSD, given in parenthesis) ^a		MDL	MQL
	Low level ^b	High level ^c	ng L ^{-1 d}	ng L ^{-1 e}
R(-)- AMP	66 (14)	69 (9)	2.5	7.5
S(+)- AMP			2.0	5.9
R(-)- MAMP	99 (6)	78 (4)	2.5	8.3
S(+)- MAMP			2.5	8.3
R(-)- MDMA	125 (17)	103 (2)	1.8	5.8
S(+)- MDMA			1.5	3.8

^a Recoveries calculated as sum of both enantiomers (n=4)

^b Samples spiked with 50 ng L⁻¹ of each enantiomer

^c Samples spiked with 400 ng L⁻¹ of each enantiomer

^d Calculated for a S/N=3 for the qualifier transition

^e Calculated for a S/N=10 for the quantifier transition and S/N≥3 for the qualifier transition

Table S5. Details on drug samples anonymously provided and analytical results.

Code	Drug	Provider	Region of origin	Average purity (%)	Purity SD (%)	Average EF _R	EF _R SD
AMP-1	AMP	Ai Laket!!	Unknown	103	6	0.50	0.01
AMP-2	AMP	Ai Laket!!	Unknown	38	7	0.51	0.02
AMP-3	AMP	Ai Laket!!	Unknown	12.6	0.9	0.52	0.01
AMP-4	AMP	Ai Laket!!	Unknown	81	12	0.500	0.002
AMP-5	AMP	Ai Laket!!	Unknown	53	4	0.504	0.004
AMP-6	AMP	Ai Laket!!	Unknown	98	16	0.501	0.002
AMP-7	AMP	Ai Laket!!	Basque Country	15	3	0.51	0.01
AMP-8	AMP	Ai Laket!!	Basque Country	32	6	0.51	0.01
AMP-9	AMP	Ai Laket!!	Basque Country	39	4	0.505	0.004
AMP-10	AMP	Ai Laket!!	Basque Country	24	3	0.509	0.003
AMP-11	AMP	Energy Control	Andalucía	6.8	0.8	0.508	0.004
AMP-12	AMP	Energy Control	Basque Country	2.7	0.3	0.517	0.005
AMP-13	AMP	Energy Control	Catalonia	83	24	0.51	0.01
AMP-14	AMP	Energy Control	Catalonia	18	2	0.505	0.003
AMP-15	AMP	Energy Control	Catalonia	38	6	0.505	0.002
AMP-16	AMP	Energy Control	Madrid	33	6	0.50	0.01
AMP-17	AMP	Energy Control	Madrid	48	10	0.5019	0.0001
AMP-18	AMP	Energy Control	Madrid	7.4	0.2	0.5051	0.0001
MAMP-1	MAMP	Energy Control	Catalonia	63	2	0	-
MAMP-2	MAMP	Energy Control	Catalonia	62	10	0	-
MAMP-3	MAMP	Energy Control	Catalonia	54	3	0	-
MAMP-4	MAMP	Energy Control	Catalonia	76	8	0	-
MAMP-5	MAMP	Energy Control	Catalonia	63	8	0	-
MAMP-6	MAMP	Energy Control	Catalonia	69	3	0	-
MDMA-1	MDMA	Ai Laket!!	Unknown	48	10	0.5019	0.0001
MDMA-2	MDMA	Ai Laket!!	Unknown	6.8	0.8	0.508	0.004
MDMA-3	MDMA	Ai Laket!!	Unknown	7.4	0.2	0.5051	0.0001
MDMA-4	MDMA	Energy Control	Andalucía	0	-	-	-
MDMA-5	MDMA	Energy Control	Andalucía	107	8	0.512	0.004
MDMA-6	MDMA	Energy Control	Balearic Island	52	9	0.504	0.004
MDMA-7	MDMA	Energy Control	Balearic Island	51	10	0.506	0.003
MDMA-8	MDMA	Energy Control	Balearic Island	93	25	0.513	0.003
MDMA-9	MDMA	Energy Control	Catalonia	97	24	0.509	0.003
MDMA-10	MDMA	Energy Control	Catalonia	55	5	0.511	0.001
MDMA-11	MDMA	Energy Control	Catalonia	96	14	0.49	0.04
MDMA-12	MDMA	Energy Control	Madrid	57	9	0.497	0.006
MDMA-13	MDMA	Energy Control	Madrid	45	2	0.505	0.003
MDMA-14	MDMA	Energy Control	Madrid	76	8	0.508	0.001

Table S6. Concentrations (sum of both enantiomers) in the analyzed wastewater samples.

City/Area	Substance	Year	Concentration (ng L ⁻¹)						
			Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Bilbao and its metropolitan area	AMP	2018	711	546	639	729	577	876	563
		2019	2166	410	501	1262	1305	1649	2331
	MAMP	2018	14	50	32	22	15	13	12
		2019	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
	MDMA	2018	74	124	62	56	37	86	118
		2019	160	17	14	25	39	81	314
Castellón	AMP	2018	17	18	16	13	13	21	17
		2019	29	23	18	18	19	20	30
	MAMP	2018	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
		2019	<MDL	8.9	8.8	9.1	<MDL	<MDL	9.9
	MDMA	2018	<MQL	<MQL	<MQL	<MQL	<MQL	10	13
		2019	84	37	20	16	21	21	86
Madrid (northern area)	AMP	2018	34	27	23	23	24	36	31
		2019	9	9	8	10	10	10	7
	MAMP	2018	54	43	42	32	36	43	49
		2019	27	26	23	23	18	17	15
	MDMA	2018	120	48	26	23	30	115	183
		2019	77	49	24	25	20	19	37
Palma	AMP	2018	72	112	74	113	144	93	131
	MAMP	2018	<MQL	36	29	34	37	27	<MQL
	MDMA	2018	131	155	113	71	251	118	374
Santiago de Compostela	AMP	2018	27	23	13	14	14	17	15
		2019	53	49	48	63	44	32	41
	MAMP	2018	35	16	12	13	9	12	10
		2019	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
	MDMA	2018	89	45	32	33	34	56	61
		2019	20	29	21	66	68	75	36

Table S7. Excretion loads (sum of both enantiomers) calculated from the concentrations measured in wastewater (Table S6) after considering WWTP flow data and population.

City/Area	Substance	Year	Excretion loads (mg day ⁻¹ 1000inhabitant ⁻¹)						
			Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Bilbao and its metropolitan area	AMP	2018	258	182	199	218	165	235	160
		2019	456	75	112	266	239	310	479
	MAMP	2018	5.0	17	10	6.5	4.3	3.4	3.4
		2019	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
	MDMA	2018	27	42	19	17	11	23	33
		2019	34	3.1	3.1	5.3	7.2	15	64
Castellón	AMP	2018	2.9	3.2	3.1	3.6	2.8	4.0	3.1
		2019	6.2	5.1	3.9	4.0	4.4	4.5	6.5
	MAMP	2018	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
		2019	<MDL	1.5	1.7	2.5	<MDL	<MDL	1.8
	MDMA	2018	<MQL	<MQL	<MQL	<MQL	<MQL	2.0	2.4
		2019	18	8.1	4.4	3.5	4.7	4.6	19
Madrid (northern area)	AMP	2018	6.7	5.5	4.6	4.3	4.6	7.1	4.9
		2019	1.9	1.9	1.7	2.0	2.0	1.9	1.4
	MAMP	2018	10.8	8.9	8.6	5.9	6.7	8.6	7.7
		2019	5.8	5.5	4.8	4.7	3.6	3.3	2.8
	MDMA	2018	24	9.9	5.3	<MQL	<MQL	23	29
		2019	16	10	5.0	5.4	4.5	3.5	6.9
Palma	AMP	2018	8.9	13	9.4	14	17	11	15
	MAMP	2018	<MQL	4.4	3.7	4.3	4.5	3.2	<MQL
	MDMA	2018	16	19	14	8.9	30	14	43
Santiago de Compostela	AMP	2018	19	17	10	12	11	13	11
		2019	17	17	17	21	14	11	14
	MAMP	2018	25	12	10	12	7.7	8.7	7.1
		2019	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
	MDMA	2018	65	34	26	30	27	41	44
		2019	7	10	8	22	22	25	12

Table S8. Human estimated consumption calculated from the loads (Table S7) after considering the corresponding CFs.

City/Area	Substance	Year	Human consumption (mg day ⁻¹ 1000inhabitant ⁻¹)						
			Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Bilbao and its metropolitan area	AMP	2018	716	505	552	603	458	650	444
		2019	1262	209	309	736	661	860	1328
	MAMP	2018	11	39	23	15	10	7.8	7.7
		2019	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
	MDMA	2018	118	183	85	74	47	101	147
		2019	148	13	14	24	32	67	284
Castellón	AMP	2018	8.1	8.8	8.7	10	7.7	11	8.5
		2019	17	14	11	11	12	13	18
	MAMP	2018	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
		2019	<MDL	5	5	6	<MDL	<MDL	6.0
	MDMA	2018	<MQL	<MQL	<MQL	<MQL	<MQL	6	10
		2019	80	36	19	15	21	20	83
Madrid (northern area)	AMP	2018	19	15	13	12	13	20	14
		2019	5.3	5.3	4.7	5.6	5.7	5.3	3.9
	MAMP	2018	25	21	20	13	15	20	18
		2019	13	13	11	11	8.2	7.5	6.4
	MDMA	2018	105	43	23	<MQL	<MQL	100	128
		2019	72	46	22	24	20	16	31
Palma	AMP	2018	25	37	26	39	48	30	41
	MAMP	2018	<MQL	11	9.0	10	11	7.7	<MQL
	MDMA	2018	71	82	63	39	133	61	188
Santiago de Compostela	AMP	2018	54	47	29	34	31	35	29
		2019	48	47	47	59	40	30	38
	MAMP	2018	58	27	24	27	18	20	16
		2019	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
	MDMA	2018	287	150	115	131	120	182	192
		2019	29	44	34	99	98	112	53

Table S9. Enantiomeric fractions (EF_R) determined in the wastewater samples.

City/Area	Substance	Year	EF _R						
			Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Bilbao and its metropolitan area	AMP	2018	0.55	0.56	0.58	0.496	0.52	0.53	0.52
		2019	0.54	0.58	0.57	0.55	0.56	0.55	0.54
	MAMP	2018	0	0	0	0	0	0	0
		2019	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
	MDMA	2018	0.61	0.52	0.52	0.52	0.53	0.54	0.58
		2019	0.69	0.71	0.77	0.70	0.63	0.57	0.58
Castellón	AMP	2018	0.50	0.52	<MQL	0.48	0.50	0.48	0.50
		2019	0.50	0.51	0.50	0.50	0.44	0.45	0.48
	MAMP	2018	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
		2019	<MDL	0	0	0	0	0	0
	MDMA	2018	<MQL	<MQL	<MQL	<MQL	<MQL	0.65	0.64
		2019	0.59	0.58	<MQL	0.60	0.59	0.57	0.60
Madrid (northern area)	AMP	2018	0.44	0.46	0.38	0.38	0.37	0.41	0.38
		2019 ^a	<0.45	<0.45	<0.48	<0.43	<0.43	<0.42	<0.50
	MAMP	2018	0	0	0	0	0	0	0
		2019	0	0	0	0	0	0	0
	MDMA	2018	0.71	0.71	0.66	0.62	0.65	0.60	0.65
		2019	0.61	0.68	0.70	0.62	0.60	0.62	0.60
Palma	AMP	2018	0.54	0.53	0.57	0.57	0.54	0.59	0.57
	MAMP	2018	<MQL	0	0	0	0	0	<MQL
	MDMA	2018	0.54	0.54	0.53	0.56	0.57	0.53	0.56
Santiago de Compostela	AMP	2018	0.54	0.64	0.59	0.54	0.53	0.58	0.55
		2019	0.74	0.66	0.69	0.72	0.81	0.76	0.70
	MAMP	2018	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		2019	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL	<MDL
	MDMA	2018	0.55	0.55	0.55	0.56	0.59	0.62	0.62
		2019	0.65	0.64	0.66	0.61	0.64	0.62	0.70

^a S-(+)-AMP was below MQL in all samples from Madrid in 2019. Thus, an accurate value of EF_R cannot be calculated

Table S10. Data on prescription of lisdexamfetamine (LIS) and calculated excreted loads of S-(+)-AMP. A DDD of LIS is equivalent to 30 mg, according to the WHO (https://www.whocc.no/atc_ddd_index/). Loads of S-(+)-AMP calculated from the urinary excretion data compiled in Table S11.

City/área	LIS prescription (DDD day ⁻¹ 1000inhabitant ⁻¹)		LIS prescription (mg day ⁻¹ 1000inhabitant ⁻¹)		Loads of S-(+)-AMP excreted from LIS (mg day ⁻¹ 1000inhabitant ⁻¹)	
	2018	2019	2018	2019	2018	2019
Bilbao and its Metropolitan area ^a	0.22	0.15	6.60	4.50	1.52	1.03
Madrid (Northern area) ^b	0.45	0.60	13.5	18.0	3.10	4.14
Palma ^c	0.38	-	11.4	-	2.62	-
Santiago de Compostela ^d	0.72	1.02	21.6	30.6	4.96	7.03

^a Data corresponding to the province of Biscay, for which the WWTP represents ca. 75% of the population. Data correspond to the sampled month average. Source: *Dirección de Farmacia, Departamento de Salud - Gobierno Vasco*.

^b Data from the city of Madrid, for which the WWTP represents ca. 10% of the population. Data correspond to the sampled month average. Source: *Subdirección General de Farmacia y Productos Farmacéuticos - Comunidad de Madrid*

^c Data from the city of Palma, equivalent to the WWTP sampled. Data was extrapolated from the yearly sales in 2018. Samples were only collected on that year. Source: *Conselleria de Salut i Consum – Govern de les Illes Balears*.

^d Data from the city of Santiago de Compostela, equivalent to the WWTP sampled. Data correspond to the sampled month average. Source: *Subdirección Xeral de Farmacia - Xunta de Galicia*

Table S11. Compilation of pharmacokinetic data on urinary excretion of S(+)-AMP from LIS

Number of individuals	S(+)-AMP excreted (%)	Reference
7	48.5	1
7	41	2
Weighted average	44.8	

References:

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Table S12. Data on prescription of selegiline (SEL) and calculated excreted loads of R-(+)-AMP and R-(+)-MAMP. A DDD of SEL is equivalent to 5 mg, according to the WHO (https://www.whocc.no/atc_ddd_index/). Loads of R(-)-AMP and R(-)-MAMP calculated from the urinary excretion data compiled in Table S13.

City/área	SEL prescription (DDD day ⁻¹ 1000inhabitant ⁻¹)		SEL prescription (mg day ⁻¹ 1000inhabitant ⁻¹)		Loads of R(+)-AMP excreted from LIS (mg day ⁻¹ 1000inhabitant ⁻¹)		Loads of R(+)-MAMP excreted from LIS (mg day ⁻¹ 1000inhabitant ⁻¹)	
	2018	2019	2018	2019	2018	2019	2018	2019
Bilbao and its Metropolitan area ^a	0.030	0.022	0.15	0.11	0.017	0.012	0.054	0.040
Madrid (Northern area) ^b	0.019	0.016	0.094	0.078	0.010	0.0087	0.034	0.028
Palma ^c	0.040	-	0.20	-	0.022	-	0.072	-
Santiago de Compostela ^d	0.0050	0.010	0.025	0.050	0.0028	0.0056	0.0090	0.018

^a Data corresponding to the province of Biscay, for which the WWTP represents ca. 75% of the population. Data correspond to the sampled month average. Source: *Dirección de Farmacia, Departamento de Salud - Gobierno Vasco*.

^b Data from the city of Madrid, for which the WWTP represents ca. 10% of the population. Data correspond to the sampled month average. Source: *Subdirección General de Farmacia y Productos Farmacéuticos - Comunidad de Madrid*

^c Data from the whole Balearic Islands region, for which the WWTP represents ca. 35% of the population. Data correspond to the sampled month average. Samples were only collected on 2018. Source: *Conselleria de Salut i Consum – Govern de les Illes Balears*

^d Data from the city of Santiago de Compostela, equivalent to the WWTP sampled. Data extrapolated from yearly sales form the corresponding year. Source: *Subdirección Xeral de Farmacia - Xunta de Galicia*

Table S14. Compilation of pharmacokinetic data on urinary excretion of R(-)-AMP and R(-)-MAMP from SEL

Number of individuals	R(-)-AMP excreted (%)	R(-)-MAMP excreted (%)	Reference
6	15.1	63.3	1
5	15.1	43.6	2
6	8.7	20	3
4	26.3	59.2	4
Weighted average	15.4	45.5	

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Table S14. Concentrations of enantiomeric fractions of MDMA in the treated wastewater samples from the WWTP of Galindo (Bilbao and its metropolitan area) from 2019.

Day	Concentration (ng L⁻¹)	EF_R
13-jun	57	0.92
14-jun	35	0.93
15-jun	31	0.85
16-jun	29	0.88
17-jun	59	0.81
18-jun	91	0.85
19-jun	99	0.89
Mean	57	0.88
Standard Deviation	26	0.04