

**Table S1.** MRM parameters of the DOAs under study.

	Compound	Rt (min)	Precursor ion	Product ion 1	CE 1 (eV)	Product ion 2	CE 2 (eV)	Product ion 3	CE 3 (eV)	Fragmentor voltage (V)
1	MOR	3.70	286.1	165	40	153	40	157	40	50
2	COD	6.28	300.2	165	40	199	36	153	42	100
3	Methylephedrine	6.67	180.0	162	8	147	10	131	10	100
4	DMC	6.86	178.1	105	18	133	14	72	18	100
5	Methylone	7.26	208.0	160	16	132	20	190	10	100
6	Flephedrone	7.32	182.1	164	15	149	15	123	15	100
7	AMP	7.41	136.1	119	4	91	10	-	-	100
8	Ethcathinone	7.49	178.1	160	12	132	14	105	18	100
9	Hyoscine	7.86	304.0	156	20	138	20	121	20	100
10	6-AM	8.49	328.2	211	36	193	36	165	40	100
11	MDA	8.51	180.1	163	6	135	10	133	10	100
12	Methedrone	8.98	194.1	176	10	161	16	145	16	100
13	MAMP	9.02	150.1	119	8	91	10	-	-	100
14	Ethylone	9.15	222.1	174	18	204	12	146	18	100
15	Buphedrone	9.39	178.1	91	15	131	15	132	15	100
16	MDMA	10.20	194.1	163	10	133	15	105	15	100
17	Oxo-LSD	10.70	356.0	237	20	222	20	265	12	100
18	2-MMC	11.00	178.1	160	8	145	15	119	15	100
19	Butylone	11.15	222.1	174	14	204	10	191	10	100
20	Mephedrone	11.39	178.1	160	8	145	15	119	15	100
21	Norketamine	11.68	224.0	207	8	179	12	125	12	100
22	KET	12.42	238.0	125	20	220	12	207	12	125
23	BZE	12.76	290.1	168	20	105	20	82	20	125
24	4-MEC	12.79	192.1	174	10	146	16	145	18	125
25	Pentedrone	13.33	192.1	174	10	132	16	91	18	125
26	3,4-DMMC	14.36	192.1	174	10	159	15	133	15	125
27	HER	14.75	370.0	211	36	268	36	165	42	125
28	Alpha-PVP	15.10	232.2	91	22	105	25	126	25	125
29	COC	15.95	304.2	182	18	105	22	82	22	125
30	MDPV	15.70	276.2	126	25	135	25	175	20	125
31	LSD	16.34	324.2	231	24	208	26	180	26	125
32	Pyrovalerone	16.56	246.2	105	22	126	26	119	26	75
33	Fentanyl	17.44	337.2	188	22	105	24	-	-	100
34	Bromazepam	18.57	316.0	182	30	209	30	288	30	100
35	Buprenorphine	19.29	468.0	55	48	396	42	414	35	100
36	EDDP	20.18	278.0	234	30	249	20	186	30	100
37	Methadone	20.78	310.2	265	12	105	18	-	-	100
38	Lorazepam	21.15	321.0	275	20	303	10	230	20	100
39	Alprazolam	21.35	308.4	281	24	274	24	204	30	100
40	Diazepam	22.03	285.0	193	30	154	30	222	30	75