

Table S1. Linear Coefficient determination, LODs and LLO ng/ml and upper limit of quantification for all specimens of interest in the current study (n=5).

		R^2 *	LDR**	intercept	STDV (intercept) &	Slope	LOD ¥	LOQ ϕ			ULOQ ϵ	Unit
								LOQ	%E \neq	Within run (%CV) $\#$	Between run (%CV)	
Blood	THC *	0.999	0.5-1000	0.033213	0.002936	0.011706	0.8	1.0	2	8	7	1000 ng/mL
	THC-COOH $\#$	0.999	0.5-1000	0.092429	0.006624	0.0305	0.7	1.0	-3	5	4	1000 ng/mL
	THC-OH \neq	0.999	0.5-1000	0.018326	0.001949	0.009576	0.7	1.0	2	7	6	1000 ng/mL
Urine	THC	0.999	0.5-1000	0.031662	0.001894	0.012125	0.5	1.0	-2	8	7	1000 ng/mL
	THC-COOH	0.999	0.5-1000	0.130149	0.006481	0.030554	0.7	1.0	9	6	6	1000 ng/mL
	THC-OH	0.998	0.5-1000	0.03322	0.001356	0.009004	0.5	1.0	2	5	6	1000 ng/mL
Vitreous humor	THC	0.999	0.5-1000	0.000385	0.000215	0.001746	0.4	1.0	7.0	10.0	6.0	1000 ng/mL
	THC-COOH	0.999	0.5-1000	0.028717	0.007513	0.053753	0.5	1.0	3.0	4.0	2.0	1000 ng/mL
	THC-OH	0.999	0.5-1000	0.001499	0.000269	0.001304	0.7	1.0	1.0	4.0	3.0	1000 ng/mL
Bile	THC	0.999	0.5-1000	0.005016	0.002582	0.011667	0.7	1.0	3	9	7	1000 ng/mL
	THC-COOH	0.999	0.5-1000	0.113291	0.008576	0.035572	0.8	1.0	2	11	9	1000 ng/mL
	THC-OH	0.998	0.5-1000	0.013309	0.001661	0.00905	0.6	1.0	4	10	10	1000 ng/mL
Gastric contents	THC	0.998	0.5-1000	-0.04347	0.00357	0.011506	1.0	2.0	5	12	11	1000 ng/mL
	THC-COOH	0.995	0.5-1000	0.13838	0.010839	0.031727	1.1	2.0	6	8	6	1000 ng/mL
	THC-OH	0.996	0.5-1000	0.03421	0.003476	0.008908	1.3	2.0	4	5	6	1000 ng/mL
Brain	THC	0.998	0.5-1000	0.000564	0.000268	0.002498	0.4	1.0	-1.0	6.0	6.0	1000 ng/mL
	THC-COOH	0.995	0.5-1000	-0.01735	0.004095	0.055885	0.2	1.0	-4.0	10.0	11.0	1000 ng/g
	THC-OH	0.996	0.5-1000	0.002364	0.000392	0.00242	0.5	1.0	-6.0	11.0	7.0	1000 ng/g
Liver	THC	0.999	0.5-1000	0.000333	0.000399	0.001718	0.8	1.0	5.0	11.0	10.0	1000 ng/g
	THC-COOH	0.999	0.5-1000	0.000609	0.000244	0.001712	0.5	1.0	2.0	7.0	3.0	1000 ng/g
	THC-OH	0.999	0.5-1000	0.000279	0.000107	0.001374	0.3	1.0	3.0	9.0	5.0	1000 ng/g

* THC: Δ 9-tetrahydrocannabinol; $\#$ THC-COOH: 11-nor- Δ 9-THC-9-carboxylic acid ; \neq : THC-OH: 11-hydroxy- Δ 9-THC

Table S2. Method validation parameters for the analysis of Δ^9 -tetrahydrocannabinol and its metabolites using Liquid chromatography tandem mass spectrometry.

			Precision			
	Analytes		Low	Medium	High	
Specimens		Nominal concentration	5	25	750	
			Measured Concentration ng/ml			
Blood with sodium fluoride	$\Delta 9$ -tetrahydrocannabinol (THC)	Mean (ng/g)	5	25	752	
		STDEV±	0.5	0.6	28.7	
		% E *	-4	-1	1	
		Within Run %CV**	7	2	3	
		Between Run %CV	8	2	2	
	11-nor- $\Delta 9$ -THC-9-carboxylic acid	Mean (ng/g)	5	25	745	
		STDEV±	0.6	0.8	9.0	
		% E	-5	-1	-1	
		Within Run %CV	9	4	2	
		Between Run %CV	8	3	1	
	11-hydroxy- $\Delta 9$ -THC	Mean (ng/g)	5	25	746	
		STDEV±	0.4	0.7	11.3	
		% E	-3	-1	1	
		Within Run %CV	6	3	4	
		Between Run %CV	4	1	2	
THC	Mean (ng/g)	5	25	757		
	STDEV±	0.4	0.7	32.4		
	% E	-6	1	1		
	Within Run %CV	8	2	4		
	Between Run %CV	7	3	4		
Urine	11-nor- $\Delta 9$ -THC-9-carboxylic acid	Mean (ng/g)	5	25	757	
		STDEV±	0.4	0.7	32.4	
		% E	-2	1	1	
		Within Run %CV	6	3	4	
		Between Run %CV	8	2	4	
	11-hydroxy- $\Delta 9$ -THC	Mean (ng/g)	5	25	756	
		STDEV±	0.4	0.8	4.9	
		% E	-2	1	1	
		Within Run %CV	7	3	3	
		Between Run %CV	6	3	2	
	Vitreous humor	THC	Mean (ng/g)	5	25	759
			STDEV±	0.4	0.6	23.6
			% E	-4	1	1

Gastric contents	11-nor- Δ^9 -THC-9-carboxylic acid	Within Run %CV	9	2	3
		Between Run %CV	8	2	3
		Mean (ng/g)	5	25	757
	11-hydroxy- Δ^9 -THC	STDEV \pm	0.4	0.4	15.0
		% E	-5	1	1
		Within Run %CV	8	3	2
	THC	Between Run %CV	7	2	2
		Mean (ng/g)	5	25	762
		STDEV \pm	0.4	0.7	8
	11-nor- Δ^9 -THC-9-carboxylic acid	% E	-3	-1	2
		Within Run %CV	10	1	3
		Between Run %CV	9	3	3
	11-hydroxy- Δ^9 -THC	Mean (ng/g)	5	25	742
		STDEV \pm	0.4	0.5	18
		% E	-8	-1	1
	THC	Within Run %CV	9	3	3
		Between Run %CV	7	3	4
		Mean (ng/g)	5	25	754
	11-nor- Δ^9 -THC-9-carboxylic acid	STDEV \pm	0.5	0.4	10.4
		% E	-4	-2	1
		Within Run %CV	11	2	3
	11-hydroxy- Δ^9 -THC	Between Run %CV	10	3	4
		Mean (ng/g)	5	24	764
		STDEV \pm	0.4	1.1	29
	THC	% E	-5	-3	2
		Within Run %CV	8	4	3
		Between Run %CV	8	4	4
Bile	11-nor- Δ^9 -THC-9-carboxylic acid	Mean (ng/g)	5	25	769
		STDEV \pm	0.3	0.6	27
		% E	-3	2	3
	11-hydroxy- Δ^9 -THC	Within Run %CV	9	2	4
		Between Run %CV	10	2	3
		Mean (ng/g)	5	25	761
	THC	STDEV \pm	0.4	0.4	17
		% E	-1	2	1
		Within Run %CV	6	1	5
	11-nor- Δ^9 -THC-9-carboxylic acid	Between Run %CV	7	2	5
		Mean (ng/g)	5	25	755
		STDEV \pm	0.3	0.2	21
	11-hydroxy- Δ^9 -THC	% E	-4	1	1
		Within Run %CV	10	3	3
		Between Run %CV	8	2	3

Brain	THC	Between Run %CV	10	3	2
		Mean (ng/g)	4.9	25.2	758.0
		STDEV±	0.3	0.6	10.9
		% E	-3	0.6	1
	Within Run %CV	7	5	2	
	11-nor- Δ9-THC-9-carboxylic acid	Between Run %CV	2	3	1
		Mean (ng/g)	4.9	25.8	754.2
		STDEV±	0.4	0.8	9.3
		% E	-1	3.1	0.6
	Within Run %CV	6	2	2	
	11-hydroxy- Δ9-THC	Between Run %CV	2	3	2
		Mean (ng/g)	4.9	25.5	752.6
STDEV±		0.2	0.9	11.4	
% E		-1	1.8	0.3	
Liver	THC	Within Run %CV	4	4	1
		Between Run %CV	5	2	1
		Mean (ng/g)	5	25	746
		STDEV±	0.2	0.7	8.3
	% E *	1	-0.7	-0.5	
	Within Run %CV **	4	3	1	
	11-nor- Δ9-THC-9-carboxylic acid	Between Run %CV	5	3	1
		Mean (ng/g)	5	26	745
		STDEV±	0.2	1.1	14.3
		% E	1	3	-1
	Within Run %CV	6	4	2	
	11-hydroxy- Δ9-THC	Between Run %CV	3	4	2
Mean (ng/g)		5	25	755	
STDEV±		0.3	1.2	8.2	
% E		-7	1	1	
Within Run %CV	4	1	1		
Kidney	THC	Between Run %CV	1	2	2
		Mean (ng/g)	5.0	25	748.6
		STDEV±	0.3	0.8	24.0
		% E	1	5	-0.2
Within Run %CV	7	2	3		

11-nor- Δ^9 -THC-9-carboxylic acid	Between Run %CV	4	3	3
	Mean (ng/g)	5	26	747
	STDEV \pm	0.4	1.5	9.4
	% E	-2	8	1
	Within Run %CV	6	4	2
	Between Run %CV	3	2	1
11-hydroxy- Δ^9 -THC	Mean (ng/g)	5	25	755
	STDEV \pm	0.3	0.8	8.3
	% E	-2	-0.6	1
	Within Run %CV	8	3	2
	Between Run %CV	4	3	1

* %E: Relative error, **CV %: the coefficient of variation; ¥¥ Blood+ naf: blood with sodium fluoride

Table S3. Demography of 43 postmortem cases included in this work.

Case no	Sex	Age	Weight	Hight	BMI	Other drugs	History & cause of death
		Year	Kg	Cm			
1	Male	20	70	170	24.2	Amphetamine, Tadalafil, Cocaine	Drugs overdose
2	Male	23	90	170	31.1	Benzoyllecgonine, Alprazolam, Morphine, Tramadol	Drug overdose
3	Male	25	65	172	22.0	Bromodiphenhydramine	History of drug abuse, Fall from high
4	Male	20	60	170	20.8	Amphetamine, Carboxyhaemoglobin, Methamphetamine	Fire related deaths
5	Male	16	60	167	21.5	Amphetamine, Methamphetamine	Died due to stab wound
6	Male	33	60	180	18.5	Tramadol	Died due to stab wound
7	Male	33	75	173	25.1	Amphetamine	Car accident
8	Male	29	90	167	32.3	Amphetamine, Quetiapine, Methamphetamine	History of drug abuse /Suicidal firearm injury
9	Male	26	90	175	29.4	Amphetamine	Drugs overdose, bleeding
10	Female	35	90	164	33.5	Amphetamine, Methamphetamine	Fall from high
11	Male	59	110	175	35.9	None	Natural death
12	Female	23	80	164	29.7	Amphetamine, Methamphetamine	Fall from high (Partially putrefied case)
13	Male	24	80	167	28.7	Amphetamine, Methamphetamine	Sinking
14	Female	28	50	155	20.8	Quetiapine	Natural death
15	Male	40	55	165	20.2	Quetiapine	Bleeding from nose and mouth
16	Male	66	60	160	23.4	Amphetamine,	History of pressure and diabetic, natural death
17	Male	29	95	176	30.7	Midazolam,	Head injury
18	Male	45	60	158	24.0	Amphetamine	Stab wound
19	Male	21	70	173	23.4	None	Natural death
20	Male	25	80	170	27.7	Amphetamine, Tramadol, Alprazolam, Methamphetamine	Natural death
21	Male	24	75	169	26.3	Diazepam, Codeine	Natural death (Partially putrefied case)
22	Male	19	80	170	27.7	None	drug of abuse
23	Male	60	90	178	28.4	None	Fall from high. (Heavily putrefied case)
24	Male	40	85	171	29.1	Amphetamine	History of HBV, HCV, HIV/ Fall from high
25	Male	63	90	179	28.1	Ethanol, Tadalafil	Natural death
26	Male	27	80	180	24.7	Amphetamine, Methamphetamine	Fall from high
27	Male	35	70	170	24.2	Amphetamine	drug of abuse

						Ethanol, Tramadol	(Heavily putrefied case)
28	Male	25	70	168	24.8	Ethanol, Clonazepam Gabapentin,	Stab wound
29	Male	29	70	171	23.9	Diazepam Cocaine Ethanol	Firearm injury
30	Male	30	80	175	26.1	None	Fall from high
31	Male	26	75	170	26.0	None	Firearm injury
32	Male	28	70	170	24.2	Amphetamine	Firearm injury
33	Male	30	75	160	29.3	Amphetamine	Natural death/ History of drug abuse
34	Male	37	90	173	30.1	Amphetamine	Natural death
35	Male	30	70	170	24.2	Amphetamine Methamphetamine	Stabbing
36	Male	50	80	176	25.8	None	Natural death
37	Male	32	80	180	24.7	Alprazolam	Sinking
38	Male	30	88	173	29.4	Amphetamine, Lidocaine, Morphine	Natural death (Partially putrefied case)
39	Male	22	60	175	19.6	Amphetamine, galantamine, , Alprazolam	Hanging
40	Male	40	70	169	24.5	Amphetamine, Lidocaine	Stabbing
41	Male	25	90	171	30.8	Amphetamine	Electric shock
42	Male	30	70	170	24.2	Amphetamine	Died in desert
43	Male	30	70	162	26.7	Amphetamine, Methamphetamine, Alprazolam, Opiate,	Drug of abuse