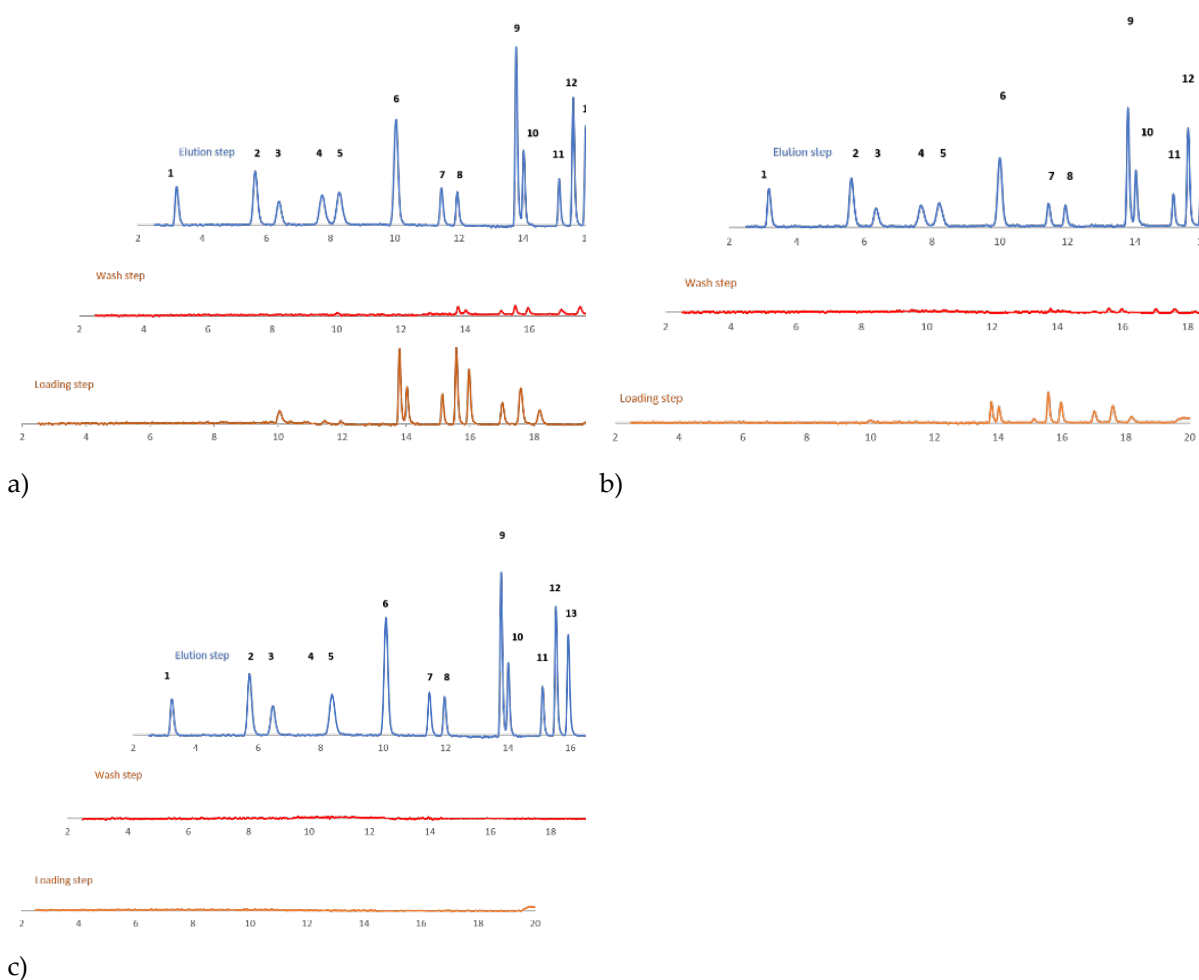


## Supplementary Materials



**Figure S1.** Method development, SPE conditions. a) DCM:ETA (50:50%) (2ml), MeOH (2 ml), H<sub>2</sub>O (2 ml)), load plasma +100ng/mL PAHs+100ng/mL P.D10 (1 ml), wash 2 ml H<sub>2</sub>O, elution DCM:ETA (50:50%) (2 ml); b) DCM (2ml), MeOH (2 ml), H<sub>2</sub>O (2 ml)), load plasma +100ng/mL PAHs+100ng/mL P.D10 (1 ml)+9 ml MeOH:H<sub>2</sub>O (10:90%) ,wash 2 ml H<sub>2</sub>O, elution DCM:ETA (50:50%) (2 ml); c) DCM (6ml), MeOH (6 ml), H<sub>2</sub>O (6 ml)), load plasma +100ng/mL PAHs+100ng/mL P.D10 (1 ml)+19 ml MeOH:H<sub>2</sub>O (10:90%) ,wash 12 ml H<sub>2</sub>O, elution DCM:ETA (50:50%) (5 ml). Elution order: 1-N, 2-Ace, 3-Fl, 4-P, 5-P.D10, 6-A, 7-Flu, 8-Py, 9-BaA, 10-Ch, 11-B(b)Flu, 12-B(k)Flu, 13-BaPy, 14-D(ah)A 15-BghiPY, 16-IPy.

**Table S1.** Linearity parameters

PAHs	Calibration curves	R <sup>2</sup>	Sy	F value	Slope p-value	Tstat
N	202.33x+1.535	0.9997	1.14	555112	1.97277E-07	74.24
Ace	92.032x+0.116	0.9991	1.26	4527.3	2.92309E-07	67.28
Fl	190.62x-0.318	0.9997	0.77	12115	4.08576E-08	110.1
P	105.75x+1.943	0.9990	1.31	4155.8	3.46846E-07	64.47

<b>A</b>	33.875x+0.737	0.9993	1.14	5460.0	2.0102E-07	73.89
<b>Flu</b>	172.77x+1.238	0.9983	1.75	2336.4	1.09599E-06	48.34
<b>Py</b>	194.02x+0.856	0.9972	2.25	1410.3	3.00261E-06	37.55
<b>BaA</b>	59.139x+0.310	0.9997	0.79	11609	4.44939E-08	107.7
<b>Ch</b>	156.14x+0.178	0.9993	1.12	5741.8	1.8178E-07	75.77
<b>B(b)Flu</b>	183.86x+1.432	0.9989	1.41	3628.4	4.54901E-07	60.24
<b>B(k)Flu</b>	76.292x+0.523	0.9998	0.58	21271	1.32572E-08	145.8
<b>BaPy</b>	81.132x+0.575	0.9996	0.86	9616.4	6.48378E-08	98.06
<b>D(ah)A</b>	285.86x+0.527	0.9971	2.27	1393.5	3.07517E-06	37.33
<b>BghiPY</b>	154.18x+0.871	0.9994	1.04	6686.4	1.34071E-07	81.77
<b>IPy</b>	290.79x+1.062	0.9992	1.23	4762.5	2.64166E-07	69.01

**Table S2.** Stability of retention time and estimated concentrations using regression slopes.

<b>PAHs</b>	<b>Rt average</b>	<b>RSD%</b>	<b>Estimated concentration</b>	<b>RSD%</b>
N	3.2	1.23	100.1	0.56
Ace	5.65	1.04	100.2	0.45
FL	6.385	1.20	100.0	0.26
P	8.26	0.49	98.9	1.10
A	10.055	1.13	99.1	1.25
Flu	11.485	0.19	100.7	0.85
Py	11.98	0.09	100.5	0.56
BA	13.805	0.08	99.3	0.92
Ch	14.045	0.07	99.1	1.02
BbFlu	15.145	0.13	100.1	0.26
BkFlu	15.58	0.17	98.9	0.86
BaPy	15.98	0.18	99.1	0.72
DahA	17.025	0.24	99.6	1.25
BghiP	17.605	0.27	100.1	0.93
IPy	18.195	0.38	100.5	0.25