

Electronic Supplementary Information

Table S1 Methods for formaldehyde determination by HPLC

Separation column	Mobile phase & flow rate	Detector	Retention time (min)	Detection limit ($\mu\text{g L}^{-1}$)	Sample	Ref.
Symmetry C ₁₈ (150 mm×4.6 mm, 5 μm)	50% acetonitrile + 4 mM NaH ₂ PO ₄ , 1.0 mL min ⁻¹	UV at 360 nm, Injection: 20 μL	6.1	0.06	textile	13
Zorbax C ₁₈ (250 mm×4.6 mm, 5 μm)	60% acetonitrile, 1.0 mL min ⁻¹	UV at 355 nm, Injection: 10 μL	7.8	15	cosmetics	14
Eclipse XDB C ₁₈ (150 mm×4.6 mm, 5 μm)	60% acetonitrile, 1.0 mL min ⁻¹	UV at 365 nm, Injection: 20 μL	16.0	3.3	hair-straightening products	15
Zorbax C ₁₈ (150 mm×0.5 mm, 5 μm)	0-15min, 45% acetonitrile, 0.01 mL min ⁻¹	ESI-MS at m/z 209, Injection: 2 μL	12.1	0.008	PM _{2.5}	16
	15-25min, 65% acetonitrile, 0.015 mL min ⁻¹					
	25-30min, 100% acetonitrile, 0.015 mL min ⁻¹					
	30-35min, 45% acetonitrile, 0.01 mL min ⁻¹					
Spherisorb C ₁₈ (124 mm×4 mm, 2.5 μm)	60% acetonitrile, 1 mL min ⁻¹	UV at 360 nm, Injection: 20 μL	2.6	0.3	polyethylene terephthalate	17
C ₁₈ (250 mm×4.6 mm, 5 μm)	45% acetonitrile, 1.0 mL min ⁻¹	UV at 345 nm, Injection: 10 μL	2.9	Unkown	perfume	18
Zorbax Bonus-RP C ₁₈ (250 mm×4.6 mm, 5 μm)	75% methanol, 1.0 mL min ⁻¹	UV at 360 nm, Injection: 10 μL	5.1	6.0	fruit juice	19
Hypersil C ₁₈ (250 mm×4.6 mm, 5 μm)	60% acetonitrile + 0.5% acetic acid, 1.0 mL min ⁻¹	UV at 352 nm, Injection: 20 μL	5.4	0.6	beer	20
XDB C ₁₈ (150 mm×4.6 mm, 5 μm)	60% acetonitrile, 1.0 mL min ⁻¹	UV at 352 nm, Injection: 20 μL	3.5	0.12	beverage	21
Lichrospher C ₁₈ (250 mm×4.6 mm, 5 μm)	65% acetonitrile, 0.8 mL min ⁻¹	UV at 365 nm, Injection: 20 μL	6.8	Unkown	octopus	22
Ultrasphere I.P. C ₁₈ (250 mm×4.6 mm, 5 μm)	75 mM NaH ₂ PO ₄ + 1mM sodium octyl sulphate + 500 μM	ECL, Injection: 50 μL	6.6	Unkown	urine and tissue	23
	EDTA + 10% (v/v) acetonitrile (pH 2.75), 1.0 mL min ⁻¹					
Hamilton PRP-1 (150 mm×4.6 mm, 5 μm)	50% acetonitrile, 0.5 mL min ⁻¹	UV at 410 nm, Injection: 50 μL	4.5	400	No	24
Zorbax SB C ₁₈ (250 mm×4.6 mm, 5 μm)	25% acetonitrile, 1.0 mL min ⁻¹	FL at 346 and 422 nm, Injection: 10 μL	9.0	0.46	plasma	25
Inertsil ODS-P C ₁₈ (250 mm×4.6 mm, 5 μm)	70% acetonitrile, 1.2 mL min ⁻¹	UV at 352 nm, Injection: 20 μL	4.2	5	shiitake mushroom	26
Nova-Pak C ₁₈ (150 mm×3.9 mm, 4 μm)	70% methanol, 1.0 mL min ⁻¹	UV at 365 nm, Injection: 20 μL	3.1	0.024	spirit	27
Hypersil C ₁₈ (150 mm×4.6 mm, 5 μm)	60% acetonitrile, 1.0 mL min ⁻¹	UV at 360 nm, Injection: 20 μL	3.9	51	acetone	28
Hypersil C ₁₈ (250 mm×4.6 mm, 5 μm)	35% acetonitrile → 90% acetonitrile, 1.5 mL min ⁻¹	UV at 3650 nm, Injection: 100 μL	11.8	Unkown	water-soluble polymers	29
Symmetry C ₁₈ (150 mm×4.6 mm, 5 μm)	50% acetonitrile, 1.0 mL min ⁻¹	UV at 352 nm, Injection: 20 μL	≈10.0	0.27	aquatic products	30
Chromolith monolithic C ₁₈ (100 mm×4.6 mm)	41% acetonitrile → 74.3% acetonitrile, 1.0 mL min ⁻¹	UV at 365 nm, Injection: 20 μL	1.2	8	sugar cane spirits	31
	C ₁₈ (12.5 mm×4.6 mm, 5 μm)	50% methanol, 1.5 mL min ⁻¹	UV at 355 nm, Injection: 1 μL	0.3	5	cosmetics

Abbreviations: ultra-violet (UV); electrochemoluminescence (ECL); electrospray ionization mass spectrometry (ESI-MS); fluorescence (FL).