Electronic Supplementary Material (ESI) for Analyst.

Supplemental Information

Solid Phase Extraction on Reverse Phase Chromatographic Media Subjected to Stresses Expected for Extraterrestrial Implementation

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Procedures for fluorescence labeling of amines

Fluorescamine labeling:
Prepare 1 mg/mL fluorescamine in dry acetone

For fluorescent measurement
To 80 µL of sample in 500 µL micro centrifuge tube, add 20 µL 0.5M borate buffer pH 9.0
Add 5 µL of 1 mg/mL fluorescamine and vortex. Allow to react for at least 2 minutes. Measure fluorescence: Excitation – 394 nm; Emission – 475 nm.

o-Phthalaldehyde (OPA) labeling:
Prepare OPA solution - 10 mg/mL in methanol, and β-mercaptoethanol solution - 10 µL in 1 mL methanol; store both solutions in refrigerator until needed.

Prepare labeling solution: To 1.2 mL of 0.4 M borate buffer pH 8.8 add 20 µL of OPA solution and 10 µL of β-mercaptoethanol solution. Use within 4 hours.

To 50 µL of sample in a 500 µL micro centrifuge tube, add 50 µL of water.
Add 50 µL of labeling solution to each tube and vortex immediately. Allow to react for at least 5 minutes or up to 60 minutes. Measure fluorescence: Excitation – 355 nm or 337 nm; Emission – 450 nm.

Table S1 Tryptophan extraction data on treated and untreated reverse phase media.

	Captured (%)	Eluted (%)	Recovery (%)	Number of extractions
Kromasil C-18				
Untreated 50 mg	58.1 +/-11.0	54.6 +/-10.8	96.6 +/-5.4	18
Vacuumed 50 mg	59.8 +/-12.3	55.4 +/-12.2	95.6 +/-4.7	14
Sonicated/heated 50 mg	64.1 +/-14.8	59.0 +/-15.1	94.8 +/-3.2	12
Frozen 50 mg	63.3 +/-14.4	56.6 +/-15.3	93.3 +/-4.1	16
Untreated 80 mg	102.3 +/-1.1	100.0 +/-5.0	97.7 +/-5.4	10
Irradiated 80 mg	100.4 +/-1.2	101.8 +/-3.4	101.3 +/-3.7	8
Irradiated/frozen 80 mg	11.1 +/-11.1	14.1 +/-8.9	103.0 +/-8.5	5
Oasis® HLB				
Untreated	100.6 +/-1.8	92.8 +/-6.6	91.2 +/-7.7	12
Vacuumed	100.8 +/-0.7	89.3 +/-4.1	88.5 +/-4.3	10
Wet sonicated/heated	100.1 +/-1.0	89.0 +/-3.5	88.9 +/-4.0	10
Dry sonicated/heated	100.7 +/-1.4	89.5 +/-4.0	89.3 +/-3.4	12
Frozen	97.8 +/-1.8	92.4 +/-4.6	95.7 +/-3.1	12
Irradiated	101.3+/-1.0	92.6+/-3.7	91.3+/-4.2	10
Irradiated/frozen	103.1 +/-2.2	104.1 +/-9.0	100.9 +/-10.6	5
Onyx C-18				
Untreated	100.7+/- 1.3	100.1 +/- 8	99.4 +/- 7.7	20
Heated	101.1 +/- 1.5	91.1 +/- 2.9	90.0+/- 4.2	4
Vacuumed	100.3 +/- 1.8	92.2 +/- 3.0	91.9 +/- 4.7	8
Sonicated/heated	100.4 +/- 1.4	95.3 +/- 5.5	95.0 +/- 6.6	8
Frozen	99.7 +/- 0.7	97.4 +/- 7.1	97.8 +/- 6.8	8
Irradiated	101.3 +/-0.4	102.2 +/-7.5	100.9 +/-7.4	12
Irradiated/frozen	77.2 +/-12.9	103.2 +/-11.6	126.0 +/-2.2	3

Table S2. Components in the multianalyte mixture

Analytes	
Tryptophan	Sodium octanoate
Tyrosine	Propylamine
Glycine	Iso-Butylamine
Histidine	Malic acid
Glutamic acid	Citric acid
Valine	Adenine
Methionine	Guanine