



Acrylamide by QuEChERS Extraction with LC/MS/MS Detection

UCT Product Number:

ECMSSC50CT-MP (4000 mg MgSO₄, 1000 mg NaCl, in Mylar pouch)

CUMPS15C18CT (150 mg, MgSO₄, 150 mg PSA and 50 mg endcapped C18, 2 mL centrifuge tube)

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Acrylamide is a neurotoxin and classified as a probable human carcinogen and genotoxicant

Procedure

1. Extraction

- a) Add 5 g of homogenized sample to a 50 mL centrifuge tube
- b) Fortify with ISTD
- c) Add 10 mL of reagent water, vortex
- d) Allow >15 minutes for hydration
- e) Add 10 mL of acetonitrile, vortex
- f) Add salts from Mylar pouch **ECMSSC50CT-MP**
- g) Shake vigorously for 1 min
- h) Centrifuge at 5000 rpm for 10 min
- i) Supernatant is ready for clean-up

2. Clean-up

- a) Add 1 mL of supernatant to the 2 mL centrifuge tube **CUMPS15C18CT**
- b) Vortex for 30 sec
- c) Centrifuge at 5000 rpm for 10 min
- d) Transfer 500 µL of extract into LC vial for analysis

LC/MS/MS Instrumentation

- **LC:** Thermo Accela 1250 pump
- **Column:** Sepax C18, 150 mm x 2.1 mm, 3µm
- **Guard:** Restek C18 2.1 x 20mm
- **Column Temperature:** Ambient
- **Injection:** 20 µL at 15° C
- **Mobile Phase:** A: water; B: methanol
- **Flow Rate:** 200 µL/min

Mobile Phase Program

Time	Mobile Phase
0 min	100% A
3 min	100% A
5 min	100% B
6 min	100% B
7 min	100% A
12 min	100% A*

* divert to waste for 0-1 min & 3-12 min

MS/MS: Thermo TSQ Vantage

- **Ion source:** APCI
- **Ion polarity:** positive mode
- **Discharge Current:** 22V
- **Declustering voltage:** 11 V
- **Sheath gas:** N₂ at 10 arbitrary units
- **Auxiliary gas:** N₂ at 15 arbitrary units
- **Vaporizer Temp:** 380 °C
- **Ion Transfer Cap. Temp:** 250 °C
- **Scan Type:** SRM
- **Dwell Time:** 150 ms
- **CID Pressure:** 0.5 mTorr

SRM Transitions				
Analyte	Parent ion	Product ion 1	Collision Energy	S-lens
Acrylamide	72.0	55.0	9	43
	72.0	27.0	20	43
¹³ C ₃ -Acrylamide	75.1	58.0	10	50

Acrylamide Recovery

Matrix n = 5	Analyte Conc. ng/mL	Recovery %	Mean Conc. ng/mL	SD (%)	RSD (%)
French Fries	50	106	53	6.1	11.56
	250	106	265	9.8	3.71
Potato Chips	50	111	56	9.4	16.84
	250	103	257	32.2	12.54
Multigrain Cereal	50	98	49	5.9	11.93
	250	93	232	9.2	3.97

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