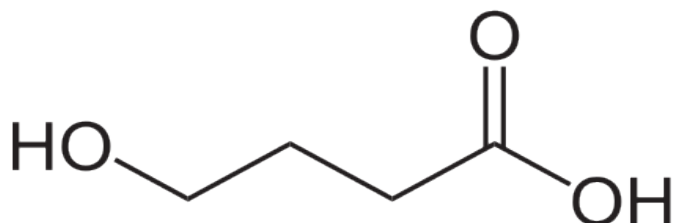


# Determination of Gamma Hydroxybutyrate (GHB) in Hair Samples Using Solid Phase Extraction and LC-MS/MS



## UCT Part Numbers

**CUQAX156**  
CLEAN-UP® Quaternary Amine w/  
Chloride Counter Ion  
500 mg/6 mL

## Procedure:

### 1. Sample Preparation

- To a clean glass tube add 100 mg of decontaminated hair sample.
- Add 1 mL of CH<sub>3</sub>OH and internal standard\*, vortex mix.
- Incubate at 40 °C for approx. 12 hours.
- Centrifuge sample at 3000 rpm for 10 minutes.
- Transfer organic phase to a clean glass tube.
- Evaporate to dryness < 40 °C.
- Dissolve residue in 3 mL of DI H<sub>2</sub>O (pH 7).
- Vortex Mix.

### 2. Condition Extraction Column

- 1 x 3 mL CH<sub>3</sub>OH.
- 1 x 3 mL D.I. H<sub>2</sub>O.

**Note:** Aspirate at < 3 inches Hg to prevent sorbent drying.

### 3. Apply Sample

- Load sample at 1-2 mL/minute.

### 4. Wash Column

- 1 x 3 mL D.I. H<sub>2</sub>O.
- 1 x 3 mL CH<sub>3</sub>OH.
- Dry column (10 minutes at > 10 inches Hg).

### 5. Elute GHB

- 2 x 3 mL CH<sub>3</sub>OH containing 6% Acetic Acid.
- Collect eluate at 1 to 2 mL / minute.

### 6. Dry Eluates

- Evaporate to dryness under nitrogen < 40 °C.
- Reconstitute in 100 µL of mobile phase.

## Instrument Conditions

Column	Thermo Fisher Gold C18; 50mm x 2.0 mm (1.9 µm)
Column Temp.	40 °C
Mobile Phase	Acetonitrile w/ 0.1% Formic acid: D.I. H <sub>2</sub> O w/ 0.1% Formic acid; (50:50)
Injection Volume	10 µL
Flowrate	0.2 mL / minute
Detector	API 4000 MS/MS
Ion Source	ESI
Ion Mode	Negative
Ion Spray Voltage	- 4500V
Curtain Gas	10
Gas 1	40
Gas 2	40
CAD Gas	Medium
Source Temp	650 °C
Mode	Positive

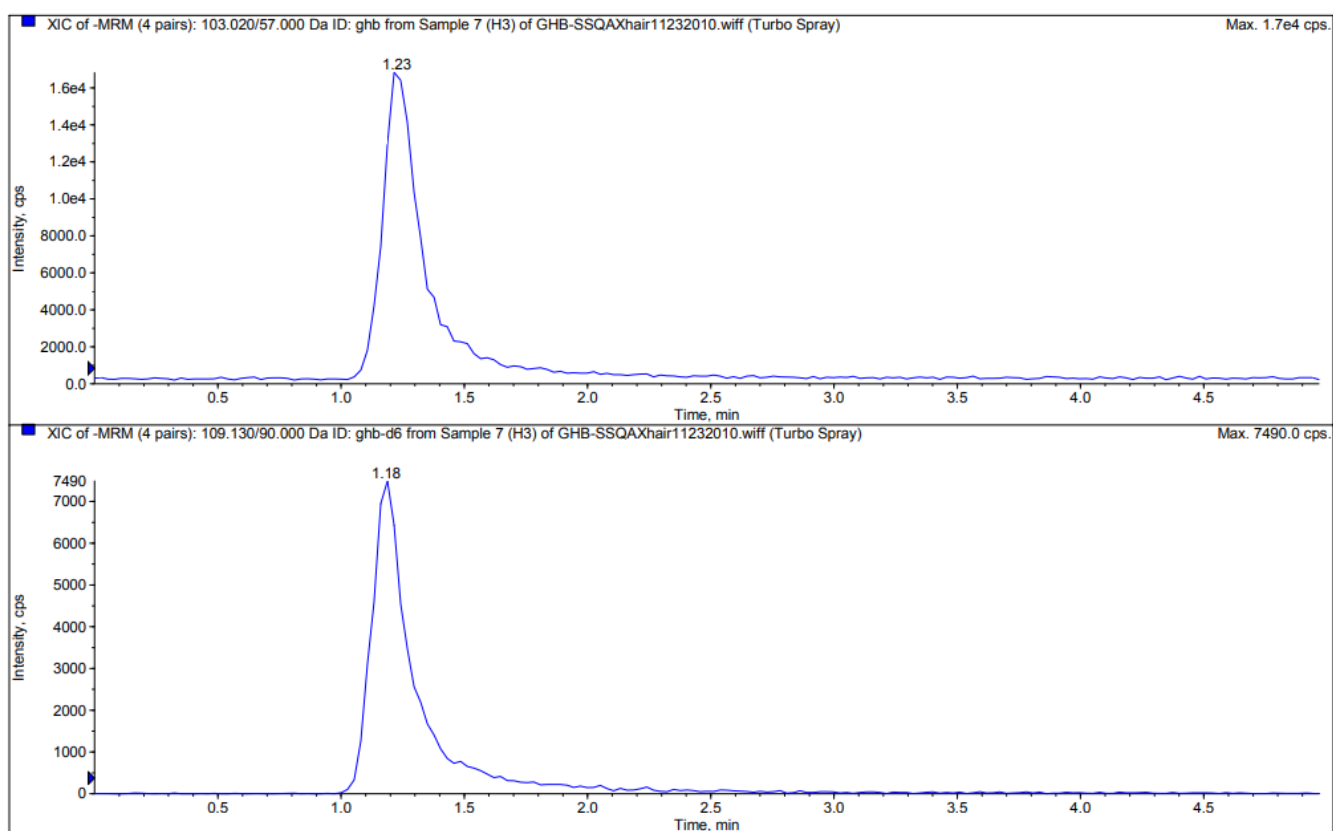


## Mass Spec Table

Compound	RT (min)	Q1	Q3	DP	EP	CE	CXP
GHB (1)	1.23	103.0	57.0	-20	-8	-18	-8
GHB (2)	1.23	103.0	84.0	-20	-8	-14	-8
GHB-D6 (1)	1.18	109.1	90.0	-20	-8	-18	-4
GHB-D6 (2)	1.18	109.1	60.9	-20	-8	-18	-4

Note: Q1 = Precursor Ion; Q3= Product Ion; DP= Declustering Potential; EP= Entrance Potential;  
CEP= Collision Entrance Potential; CE= Collision Energy; CXP= Collision Exit Potential.

## Chromatogram of GHB (upper trace) and GHB-D6



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