

Beta Blockers in Blood, Urine For GC/MS Confirmations Using: 200 mg Clean Screen® Extraction Column



UCT Part Numbers

ZSDAU020
Clean Screen® DAU
10 mL, 200 mg sorbent
Without Tips

Or

ZCDAU020
Clean Screen® DAU
10 mL, 200 mg sorbent
With CLEAN-THRU® Tips

Procedure:

1. Prepare Sample

- To 1 mL of Acetate buffer (pH= 4.5) add 1 mL of blood or urine. Add 2 mL of Acetate buffer (pH= 4.5).
- Mix/Vortex.
- Centrifuge as appropriate.

2. Condition Clean Screen® Extraction Column

- 1 x 3 mL CH₃OH.
- 1 x 3 mL D.I. H₂O.
- 1 x 3 mL 100 mM Acetate Buffer (pH= 4.5).

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

3. Apply Sample

- Load at 1-2 mL/minute.

4. Wash Column

- 2 x 1 mL Acetone/ Methanol (1:1) aspirate.
- Dry column (5 minutes at > 10 inches Hg).

5. Elute Beta Blockers

- 1 x 1 mL Dichloromethane/ Isopropanol/Ammonium Hydroxide(78:20:2).
- Collect the eluate by gravity.

Note: Prepare elution solvent fresh daily. Add IPA/NH₄OH, mix, then add CH₂Cl₂ (pH 11-12).

6. Dry Eluate

- Evaporate to dryness at < 40°C.

7. Derivatize

- Derivatization Solution: Methaneboronic acid at 5 mg/mL prepared in dry ethyl acetate (use molecular sieve).
- Store this solution at -20°C (freezer conditions) until use.

Reaction Mixture

- Add 100 µL of the Methaneboronic acid solution (see above).
- Mix/vortex.
- React 15 minutes at 70°C. Remove from heat source to cool.

Note: Do not evaporate this solution.

8. Analysis

- Inject 1 to 2 µL sample.



References:

[1] Branum G, Sweeney S, Palmeri A, Haines L and Huber C

[2] The Feasibility of the Detection and Quantitation of β Adrenergic Blockers By Solid Phase Extraction and Subsequent Derivatization with Methaneboronic Acid. Journal of Analytical Toxicology 22: 135-141 (1998)

UCT, LLC • 2731 Bartram Road • Bristol, PA 19007 800.385.3153 • 215.781.9255

www.unitedchem.com Email: methods@unitedchem.com

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