



**BETA BLOCKERS IN BLOOD, URINE FOR
GC/MS CONFIRMATIONS USING: 200 mg
CLEAN SCREEN[®] EXTRACTION COLUMN**

Part #: ZSDAU020 without Tips or ZCDAU020 with CLEAN-THRU[®] Tips

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 to 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.

Reference:

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

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)