

# Extraction of Basic Compounds Using Strata Screen C Mixed Mode Solid Phase Extraction Cartridges

## **SPE Cartridge:**

Strata Screen C, 150 mg / FST (20 ml funnel shape), Phenomenex Part Number 8C-S016-SEH  
Strata Screen C, 150 mg / 3 ml (straight wall), Phenomenex Part Number 8B-S016-SBJ

**Note:** Method is suitable for both larger and smaller mass SPE products ( ie, 96-well plate products) . Please refer to the Phenomenex document entitled “Suggested Solvent Volumes” for solvent volume suggestions.

## **Introduction:**

Basic/cationic compounds are retained in the Screen C cartridge by a combination of strong cation exchange and secondary non-polar interactions. Non-polar and anionic compounds are effectively removed from the sample by washes with water and MeOH.. The bases are then eluted by a mixture of water miscible organic solvent with base modifier in order to neutralize their charged functional groups.

## **Specimen Preparation:**

Urine: Dilute 1 –5 ml of urine with 5 ml of 0.1 M phosphate buffer, pH 6.0.  
Plasma / Serum: 0.5 – 2.0 ml. Dilute 1:1 with 0.1 M phosphate buffer, pH 6.0.

## **Condition:**

1. 2 ml methanol
2. 2 ml DI Water
3. 2 ml 0.1 M phosphate buffer, pH 6.0

## **Load:**

Apply the sample at a rate not to exceed 2 ml / minute.

## **Wash / Dry:**

1. 2 ml DI Water
2. 2 ml 100 mM HCl
3. 3 ml MeOH
4. Dry column at full vacuum to remove all traces of wash solvents. ( Typically 1 – 4 minutes at 15 in. Hg. ). Release vacuum

## **Elute Basic Drugs:**

With the vacuum turned off, apply 2 ml MeOH/NH<sub>4</sub>OH (98:2). Allow to flow by gravity using vacuum at end only to draw off the last few drops.

**Alternate elution solvent:** CH<sub>2</sub>CL<sub>2</sub>/IPA/NH<sub>4</sub>OH ( 78:20:2) may be used if there is no objection to halogenated solvent usage. This is commonly regarded as the strongest elution solvent for Screen C type of mixed phases.

## **Analysis:**

The extract of this method is volatile making it easy evaporate and reconstitute in a solvent compatible with the analytical system. Be aware that volatile bases such as amphetamine/ methamphetamine can be lost during evaporation if not careful.