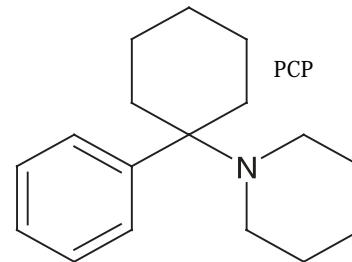


Extraction of Phencyclidine from Urine using StrataTM Screen-C

This method is optimized for the extraction and clean-up of the hallucinogenic drug phencyclidine (PCP) from urine using Strata Screen-C, a mixed-mode sorbent (C8 + SCX). PCP, the parent compound, is analyzed for SAMSHA drug confirmation. The urine sample is loaded at pH 6. PCP is initially retained by hydrophobic interactions with the C8 portion of the sorbent. Urinary salts and water-soluble contaminants are effectively removed by an aqueous wash. The amine group is charged by the acidic wash step. PCP is now retained by both hydrophobic and ionic interactions allowing for an aggressive organic wash to remove any remaining organic contaminants (without a nitrogen group). A basic organic solution elutes the target analyte. The result is a very clean, concentrated PCP extract.



Specimen preparation:

To 5mL of urine add internal standard + 2mL 100mM phosphate buffer (pH 6). Mix/Vortex. Add 1M potassium hydroxide to adjust pH to 6.

Suggested internal standard for GC/MS: d₅-PCP.

SPE method:

- | Condition |
|--|
| 1) 2mL methanol |
| 2) 2mL 100mM phosphate buffer (pH 6) |
| Load |
| 1) Apply the sample at a rate ≤2mL/min. |
| Wash/Dry |
| 1) 3mL DI water |
| 2) 3mL 1M acetic acid |
| 3) 3mL methanol |
| 4) Dry column 2-5 min at full vacuum (>10 ⁻³ Hg). |
| Elute PCP |
| 1) With the vacuum turned off, apply 2mL dichloromethane/isopropanol/ammonium hydroxide (78:20:2). Allow solvent to slowly soak into sorbent for 15-30 sec before applying vacuum. Optimal flow rate of elution solvent is ≤2mL/min. |

(Important: The volumes shown are for 150mg sorbent mass. The method can be optimized for smaller or larger bed masses, by adjusting the solvent volumes.)



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Extraction of Phencyclidine from Urine using Strata™ Screen-C

Analysis:

Evaporate to dryness at $\leq 40^{\circ}\text{C}$. Remove immediately upon completion. Add 50 μL ethyl acetate. Mix/vortex. Inject 1 to 2 μL onto GC column. (recommended: Zebron ZB-5, 15m x 0.25mm x 0.25 μm)

Monitor the following ions (MSD):

PCP	d_5 -PCP
200	205 ▲ quantification ions
91	96
242	247

Extraction Tips!

1. Preparing solutions

100mM phosphate buffer (pH 6)

Add 13.6g of monobasic potassium phosphate to an empty 1L volumetric flask. Add 900mL DI water to dissolve the solid. Adjust the pH to 6 with 1M potassium hydroxide while stirring. Bring the volume up to the mark with DI water.

1M potassium hydroxide

Add 5.6g of potassium hydroxide to an empty 100mL volumetric flask. Add 90mL DI water to dissolve the solid. Bring the volume up to the mark with DI water.

1M acetic acid

Add 28.6mL glacial acetic acid to 400mL DI water in 500mL volumetric flask. Bring the volume up to the mark with DI water.

Dichloromethane/isopropanol/ammonium hydroxide (78:20:2)

Combine 20mL isopropanol with 2mL concentrated ammonium hydroxide. Mix. Add 78mL dichloromethane. Mix.

- Do not allow the sorbent to dry between the conditioning steps or prior to loading the sample. Excessive drying of the sorbent causes "deconditioning" which may lead to significantly lower and erratic recoveries. To ensure a properly solvated sorbent, apply each solvent immediately after the previous solvent.
- Always condition the sorbent with the strongest solvent used in the method to ensure the cleanest extraction of the target analytes. In this method, 100mM phosphate buffer (pH 6) is used after methanol.
- During the wash step, drying the sorbent removes any residual water and will ensure optimal analyte recovery.
- Prepare the elution solvent daily, as the ammonium hydroxide rapidly dissipates in air.

Questions? Please contact your Phenomenex Technical Representative.

This method is designed as a convenient starting point for further investigation. Phenomenex makes no guarantee regarding the accuracy or completeness of the method.

Ordering Information:

Order No.	Description	Unit
8B-S016-EAK	Screen-C Tubes (100mg/1mL)	100/Box
8B-S016-EBJ	Screen-C Tubes (100mg/3mL)	50/Box
8B-S016-SBJ	Screen-C Tubes (150mg/3mL)	50/Box
8B-S016-RBJ	Screen-C Tubes (300mg/3mL)	50/Box
8B-S016-SCH	Screen-C Tubes (150mg/6mL)	30/Box
8B-S016-HCH	Screen-C Tubes (500mg/6mL)	30/Box
8E-S016-CGB	Screen-C 96-Well Plate (25mg/well)	2/Box
8E-S016-DGB	Screen-C 96-Well Plate (50mg/well)	2/Box
7EG-G002-11	Zebtron ZB-5 (15m x 0.25m x 0.25 μm)	1/Box