

# Extraction of THC-COOH from Urine on RapidTrace<sup>®</sup> using ISOLUTE<sup>®</sup> C8 Columns

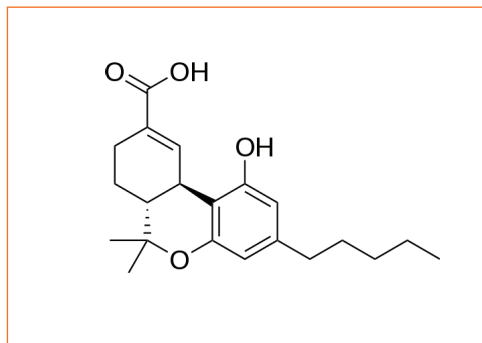


Figure 1. Structure THC-COOH

## Introduction

This method demonstrates the automated extraction of THC-COOH from urine using ISOLUTE<sup>®</sup> C8 columns and the RapidTrace<sup>®</sup> SPE workstation.

Due to the presence of a carboxylic acid group, this compound will require hydrolysis prior to the analytical determination.

## Extraction Procedure

- ISOLUTE<sup>®</sup> SPE Column:** ISOLUTE C8 100 mg, 1 mL (Part number 290-0010-A) or 100 mg, 3 mL (Part number 290-0010-B)
- Matrix:** The analyte is being extracted from an aqueous matrix of high ionic strength.
- Pre-treatment:** Add 100  $\mu$ L of internal standard standard to 3 mL of urine. Hydrolyze with 0.25 mL of NaOH, 10 M. Heat for 15 minutes at 60 °C. Cool. Add 1 mL of glacial acetic acid.
- Condition:** Condition column with 2 mL of methanol at 6 mL/min.
- Equilibration:** Rinse column with 2 mL of water at 6 mL/min
- Sample loading:** Load sample volume of 4.4 mL at 1.5 mL/min
- Interference elution:** Rinse column with 1 mL of water at 6 mL/min.  
Purge cannula with 4 mL of water at 30 mL/min.  
Rinse column with 2 mL of acetonitrile/acetone/0.01 M HCl, (v/v, 15:15:70), at 6 mL/min  
Dry under 20 psig nitrogen for 0.2 min.
- Analyte elution:** Collect sample with 1 mL methanol/ethyl acetate 50:50 at 1.5 mL/min.  
Purge cannula with 5 mL of methanol at 30 mL/min.  
Purge cannula with 5 mL of deionized water at 30 mL/min.  
Evaporate eluate to dryness.  
Derivatize with 50  $\mu$ L BSTFA at 60 °C for 15 min.  
Inject into GC.
- Analytical method:** GC-MS
- Reagents:**
- 0.01 M HCl. Add 2 mL of concentrated HCL to 200 mL of deionized water in a 250 mL volumetric flask. Dilute to mark with deionized water.
  - Acetonitrile/acetone/0.01 M HCl (v/v, 15:15:70). Add 15 mL of ethyl acetate and 15 mL of acetone to a 100 mL volumetric flask. Dilute to mark with 0.01 M HCl.
  - Methanol/ethyl acetate 50:50. Add 50 mL of ethyl acetate to 50 mL of methanol.

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