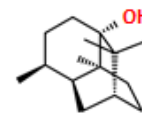


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🌐 (-)-patchoulol GC sample preparation



Forked from [\(-\)-α-Bisabolol GC sample preparation](#)



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Protocol status: Working

We use this protocol and it's working

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Keywords: GC, patchoulol, patchouli alcohol, dodecane, sesquiterpene, cyanobacterial strain, direct analysis of dodecane, external standards in dodecane, gc analysis, quick guide for the preparation, fresh external standard series, following gc protocol

Abstract

This is a quick guide for the preparation of (-)--patchoulol samples and external standards in dodecane for GC analysis. This protocol has been established in the Lindberg lab at Ångström laboratory (Uppsala University) for direct analysis of dodecane-based *ex-situ* extracts from cyanobacterial strains producing (-)-patchoulol. The protocol includes the preparation of stock solutions for the internal standard β -caryophyllene (BCP) and the external standard. The preparation of a fresh external standard series is suggested for each sample analysis. The calibration curve is required for quantification of (-)-patchoulol in the samples of interest.

This protocol is used in combination with the following GC protocol:

[dx.doi.org/10.17504/protocols.io.kj2cuqe](https://doi.org/10.17504/protocols.io.kj2cuqe)

Materials

MATERIALS

⊗ β -Caryophyllene $\geq 80\%$, FCC, FG Merck MilliporeSigma (Sigma-Aldrich) Catalog #W225207

⊗ HPLC/GC Vials 1.5 mL clear glass VWR International (Avantor) Catalog #548-1488

⊗ Dodecane Reagent Grade $\geq 99\%$ Catalog #D221104

⊗ Patchouli alcohol primary reference standard Merck MilliporeSigma (Sigma-Aldrich) Catalog #5986-55-0

Preparation of BCP (β -caryophyllene) internal standard (IS) stocks

1

		BCP Stan dard		
	Stoc k A	1: 10 Dilut ion from Origi nal BCP Stoc k ($\Rightarrow$ 89 mg *mL ⁻¹)		
		↓		
	Stoc k B	281 μ L S tock A + 719 μ L dod ecan e ($\Rightarrow$ 25 mg *mL ⁻¹)	$\Rightarrow$	1: 100 to sam ples (2 μ L + 198 μ L sam ple)
		↓		
	Stoc k C	200 μ L Stoc k B ad 19,8 mL Dod ecan e	$\Rightarrow$	use for prep arati on of α - bisa bole ne e

		($\Rightarrow$ 250 $\mu\text{g} \cdot \text{mL}^{-1}$)		external standard (ES) series
--	--	--	--	--

Store Stocks in the fridge at $\sim 4\text{ }^{\circ}\text{C}$

Safety information

Dodecane is toxic! Wear protective gloves and goggles. Work under the fume hood, or use a respirator!

<https://pubchem.ncbi.nlm.nih.gov/compound/dodecane#section=Handling-and-Storage>

Preparation of (-)-patchoulol standard stocks

2

	Patchoulol standard	
	Resuspend 10 mg stock powder in 100 μL Dodecane	10 mg/ 100 μL $= 100\text{ }\mu\text{g}/\mu\text{L}$
	Stock P-I 200 μL	20.57 μL Stock solution (100 $\mu\text{g}/\mu\text{L}$) + 179.43 μL Stock C $\Rightarrow 10.284\text{ }\mu\text{g}/\mu\text{L}$
		$\Downarrow$
	Stock P-II 2 mL	155.6 μL Stock P-I + 1844.4 μL Stock C ($\Rightarrow 800\text{ }\mu\text{g} \cdot \text{mL}^{-1}$)

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Preparation of patchoulol calibration curve

3 Example: Patchoulol external standard (ES) dilution series:

0; 25; 50; 100; 200; 400; 800 $\mu\text{g} * \mu\text{L}^{-1}$

High Range Dilution Series:				
		Vol. Stock P-II	Vol. Stock C	Transfer to vial (3 x)
800 $\mu\text{g} * \text{mL}^{-1}$	600	0	200	
400 $\mu\text{g} * \text{mL}^{-1}$	325	325	200	
200 $\mu\text{g} * \text{mL}^{-1}$	162,5	487,5	200	
100 $\mu\text{g} * \text{mL}^{-1}$	81,25	568,75	200	
50 $\mu\text{g} * \text{mL}^{-1}$	40,625	600	200	
25 $\mu\text{g} * \text{mL}^{-1}$	20,3125	629,6875	200	



12.5 µg* mL-1	10,15 625	639, 843 75	200
0 µg* mL-1	0,0	600	200
Sum	1218, 75	2581 ,2	

Safety information

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Preparation of biological patchoulol samples (in dodecane)

- 4
 - pipette 198 µL sample to GC vial
 - add each 2 µL **Stock B**

Safety information

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<https://pubchem.ncbi.nlm.nih.gov/compound/dodecane#section=Handling-and-Storage>