

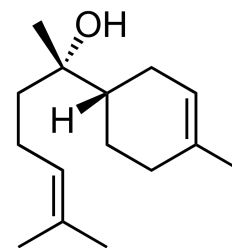
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## 🌐 (-)- $\alpha$ -Bisabolol GC sample preparation

🔗 Forked from [\(E\)- \$\alpha\$ -bisabolene GC sample preparation](#)

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**Protocol status:** Working

We use this protocol and it's working

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**Keywords:** GC, bisabolol, dodecane, gas chromatography, terpenoids

## Abstract

This is a quick guide for the preparation of (-)- $\alpha$ -bisabolol 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 (-)- $\alpha$ -bisabolol. The protocol includes the preparation of stock solutions for the internal standard  $\beta$ -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 (-)- $\alpha$ -bisabolol 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

⊗  $\beta$ -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 ( $\beta$ -caryophyllene) internal standard (IS) stocks

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		<b>BCP Stan dard</b>		
	<b>Stock A</b>	1: 10 Diluti on from Origin al BCP Stock ( $\Rightarrow 89$ $\text{mg} \cdot \text{mL}^{-1}$ )		
		↓		
	<b>Stock B</b>	281 $\mu\text{L}$ St ock A + 719 $\mu\text{L}$ dode cane ( $\Rightarrow 25$ $\text{mg} \cdot \text{mL}^{-1}$ )	$\Rightarrow$	1: 100 to sampl es (2 $\mu\text{L}$ + 198 $\mu\text{L}$ sampl e)
		↓		
	<b>Stock C</b>	200 $\mu\text{L}$ Stock B ad 19,8 $\text{mL}$ Dode cane ( $\Rightarrow 250$ $\mu\text{g} \cdot \text{mL}^{-1}$ )	$\Rightarrow$	use for prepa ration of $\alpha$ - bisab olene exter nal stand ard (ES) series

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

### 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 (-)- $\alpha$ -Bisabolol standard stocks

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	<b>(-)-<math>\alpha</math>- bisabolol standard</b>
<b>Stock L-I</b> <b>200 <math>\mu</math>L</b>	1:100 dilution from original Stock ( $\Rightarrow$ 9.2 $\mu$ g/ $\mu$ L in Stock C)
	$\Downarrow$
<b>Stock L-II</b> <b>2 mL</b>	174 $\mu$ L <b>Stock L-I</b> + 1826 $\mu$ L <b>Stock C</b> ( $\Rightarrow$ 800 $\mu$ g * mL <sup>-1</sup> )

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## Preparation of (-)- $\alpha$ -Bisabolol calibration curve

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**Example: (-)- $\alpha$ -bisabolol external standard (ES) dilution series:**

0; 12.5; 25; 50; 100; 200; 400; 800  $\mu$ g \*  $\mu$ L<sup>-1</sup>

<b>High Range Dilution Series:</b>			
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	Vol. <b>Stock L-II</b>	Vol. <b>Stock C</b>	Trans fer to vial (3 x)
800 $\mu\text{g} \cdot \text{mL}^{-1}$	600	0	200
400 $\mu\text{g} \cdot \text{mL}^{-1}$	325	325	200
200 $\mu\text{g} \cdot \text{mL}^{-1}$	162,5	487,5	200
100 $\mu\text{g} \cdot \text{mL}^{-1}$	81,25	568,7 5	200
50 $\mu\text{g} \cdot \text{mL}^{-1}$	40,62 5	600	200
25 $\mu\text{g} \cdot \text{mL}^{-1}$	20,31 25	629,6 875	200
12.5 $\mu\text{g} \cdot \text{mL}^{-1}$	10,156 25	639,8 4375	200
0 $\mu\text{g} \cdot \text{mL}^{-1}$	0,0	600	200
Sum	1229, 6875	2610, 9375	

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### Preparation of biological (-)- $\alpha$ -Bisabolol samples (in dodecane)

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  - pipette 198  $\mu\text{L}$  sample to GC vial
  - add each 2  $\mu\text{L}$  **Stock B**



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