

## Supporting Information

for

# Regioselective hydration of geraniol by *Escherichia coli* fumarases in whole-cell biotransformations

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<sup>1</sup> These authors contributed equally to this work.

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## 1. Supplementary Figures

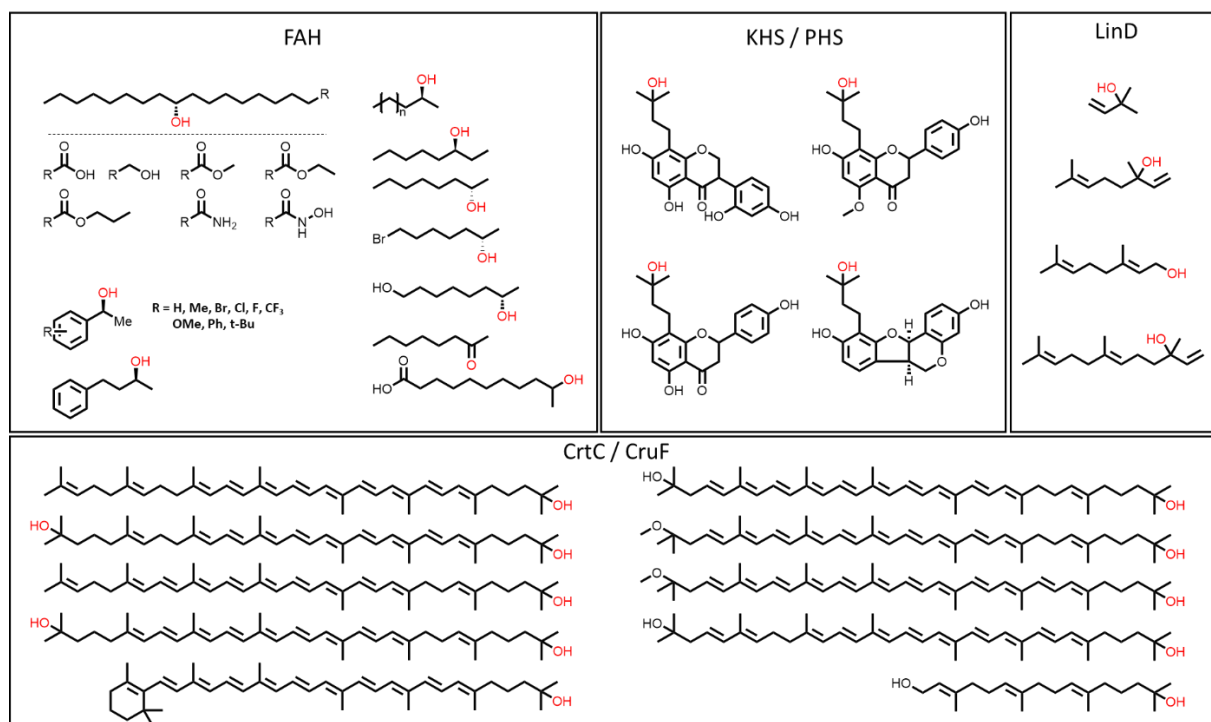


Figure S1: Product panel of different hydratases following the Markovnikov-rule: Carotenoid hydratases (CrtC/CruF), kievitone hydratase (KHS) and phaseollidine hydratase (PHS), linalool dehydratase isomerase (LinD) and fatty acid hydratases (FAH).

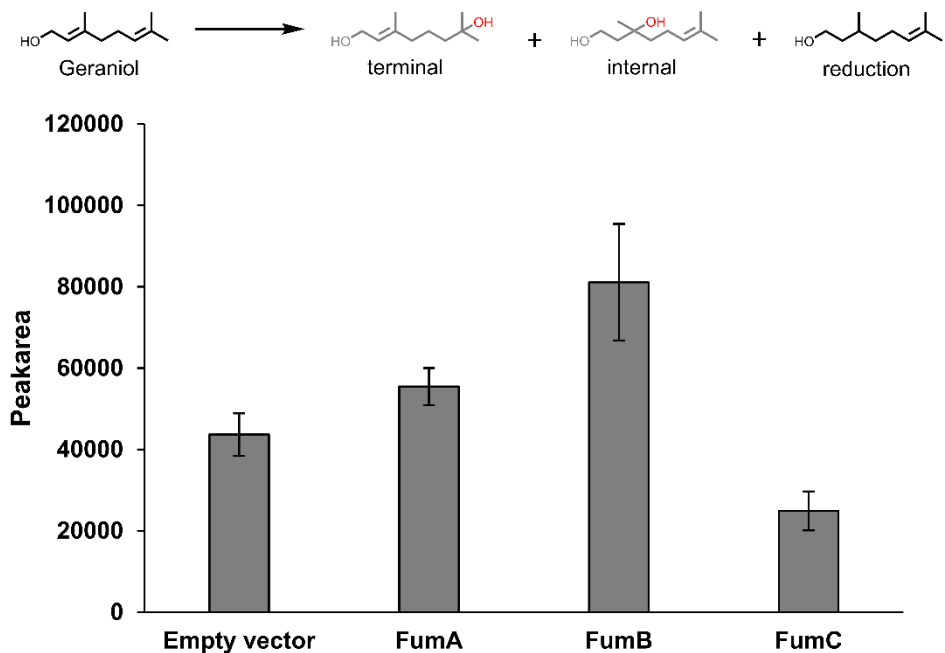


Figure S2: Formation of reduction product citronellol during the biotransformations of geraniol using *E. coli* whole cells with different fumarases (FumA, FumB, FumC) overexpressed. The values were measured on GC-FID and are mean values from triplicates, the error bars show the standard deviation. Reaction conditions: 10 mM substrate, 1 %(*V/V*) DMSO, 30 °C, 24 h, 300 rpm, extraction with 500  $\mu$ L cyclohexane/ethylacetate 1:1.

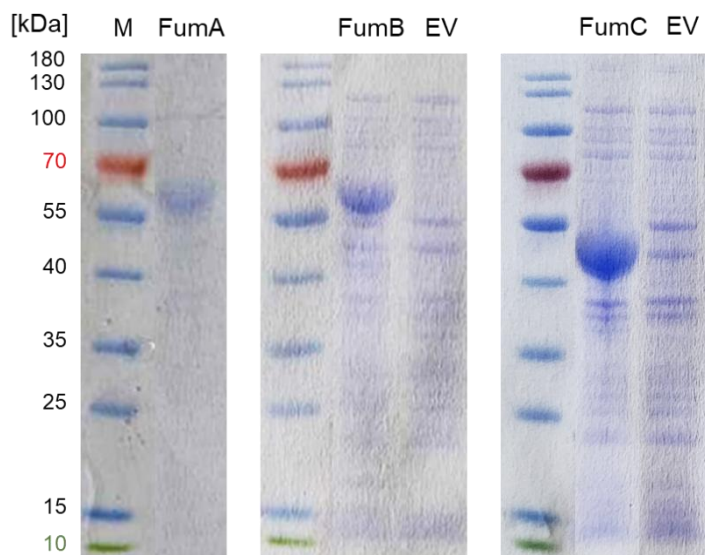


Figure S3: SDS-PAGE of different fumarases (FumA, left, 60.3 kDa; FumB, middle, 60.1 kDa, FumC, right, 50.5 kDa) overexpressed in *E. coli*. M=Marker EV=empty vector expression.

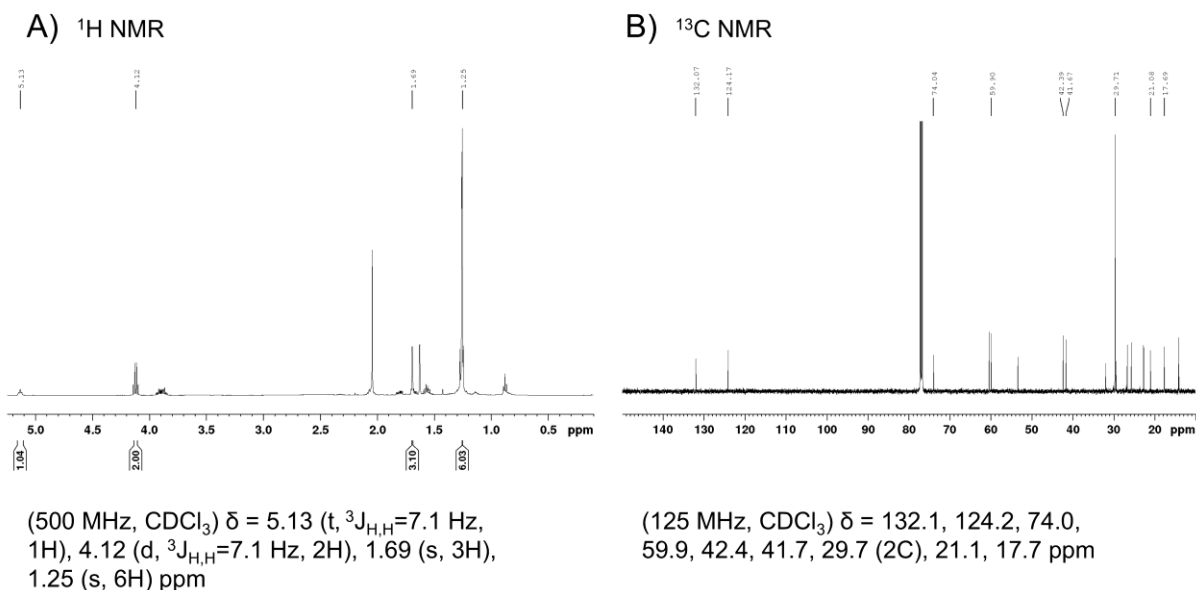
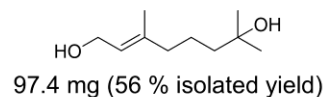


Figure S4: A) <sup>1</sup>H-NMR of terminal hydration product of geraniol in CDCl<sub>3</sub>. B) <sup>13</sup>C-NMR of terminal hydration product of geraniol in CDCl<sub>3</sub>.

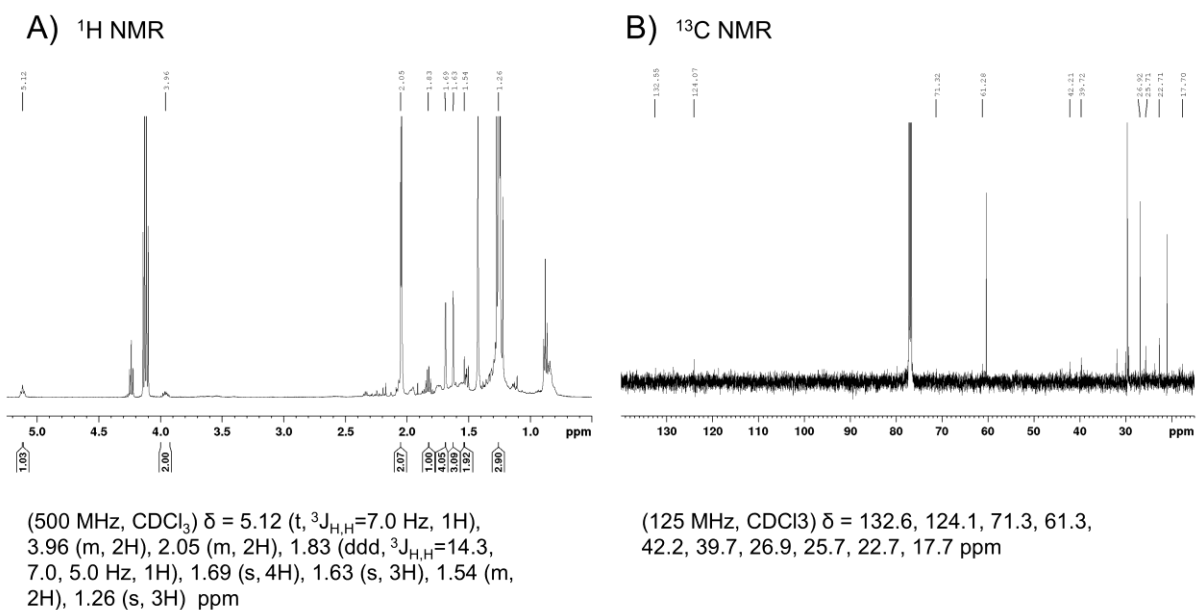
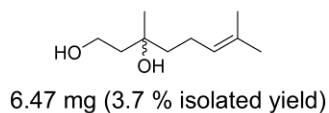


Figure S5: A) <sup>1</sup>H-NMR of internal hydration product of geraniol in CDCl<sub>3</sub>. B) <sup>13</sup>C-NMR of internal hydration product of geraniol in CDCl<sub>3</sub>.

## 2. DNA and protein sequences

### **FumA**

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## FumB

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## FumC

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