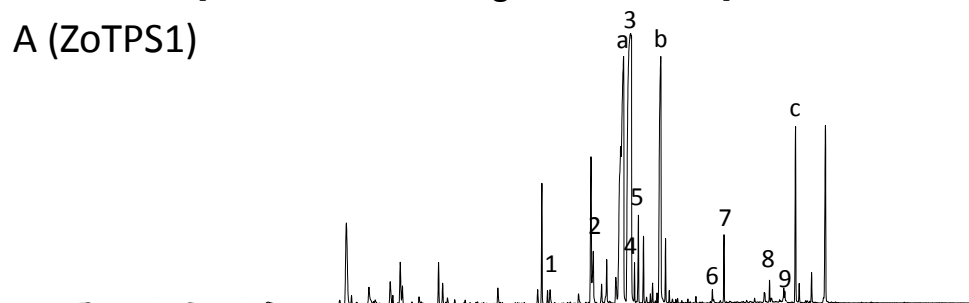


Fig. S18.

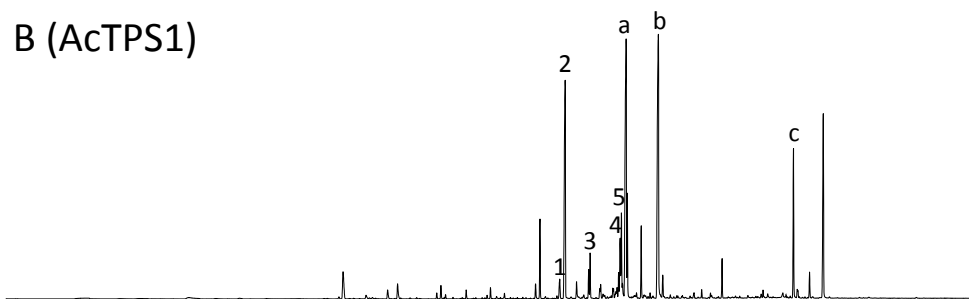
Total ion chromatograms and mass spectra obtained from GC-MS analysis of TPS products extracted from *E. coli* carrying the *Tps* gene and the mevalonate pathway gene cluster. *Tps* genes introduced are as follows: *ZoTps1* (A), *AcTps1* (B), *AcTps2* (C), *AeTps1* (D). Numbers in the figure indicate the sesquiterpene peaks. The name and its peak area percent of each sesquiterpene are listed in supplemental tables (S1-S4). More than 20 sesquiterpene peaks were detected in the product of AeTPS1, thus the peaks exceeding 1.00 area % are numbered in (D). The peaks of geranyl acetate, geraniol and farnesol are marked with alphabet because these compounds would be produced by the non-enzymatic mechanisms from geranyl or farnesyl diphosphate. a: geranyl acetate, b: geraniol, c: farnesol. Mass spectra of the peaks of which the structure was analyzed by NMR (Fig. 3) are as follows: peak 3 in A, β -bisabolene (E), peak 2 in B, β -elemene which was transformed from germacrene A by heat during GC-MS analysis (F), peak 2 in C, β -elemene (G), peak 1 in C, β -panasinsene (H), peak 3 in C, β -caryophyllene (I), peak 6 in C, α -humulene (J), peak 2 in D, α -copaene (K), peak 7 in D, δ -cadinene (L), peak 3 in D, β -cubebene (M), peak 5 in D, germacrene D (N). As for the GC-MS analysis methods, see ref. [2].

[Total ion chromatogram of GC-MS]

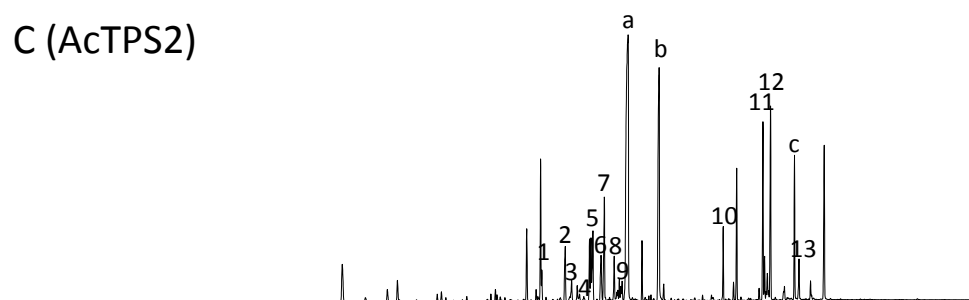
A (ZoTPS1)



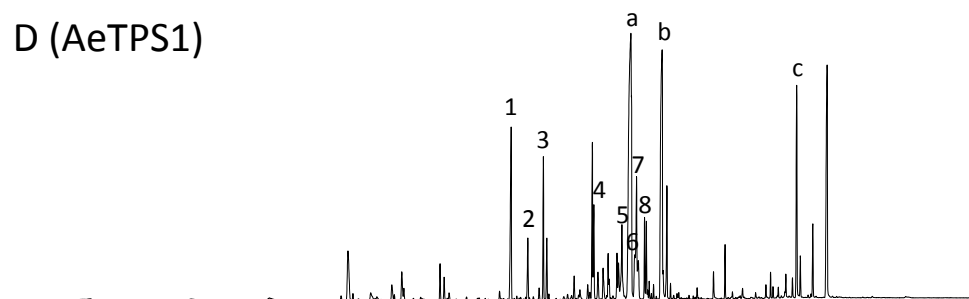
B (AcTPS1)



C (AcTPS2)



D (AeTPS1)



Retention time (min)

Table S1. Sesquiterpene contents in the ZoTPS1 product

No.	Sesquiterpene	area %
1	zingiberene	0.39
2	β -farnesene	1.64
3	β -bisabolene	14.00
4	γ -bisabolene	0.57
5	β -sesquiphellandrene	1.62
6	α -trans-sesquicyclogeraniol	0.20
7	nerolidol	1.10
8	2-(1,5-dimethyl-4-hexenyl)-4-methyl-3-cyclohexen-1-ol	0.27
9	levomenol	0.28

Table S2. Sesquiterpene contents in the AcTPS1 product

No.	Sesquiterpene	area %
1	2,4-diisopropenyl-1-methyl-1-vinyl-, (1S,2R,4R)- (-)- cyclohexane	1.03
2	β -elemene (germacrene A)	13.50
3	β -farnesene	1.51
4	β -selinene	2.29
5	γ -selinene	3.89

Table S3. Sesquiterpene contents in the AcTPS2 product

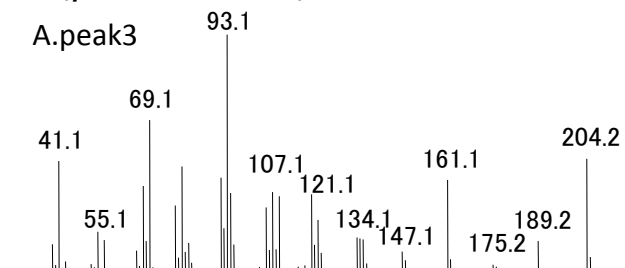
No.	Sesquiterpene	area %
1	β -panasinsene	0.79
2	β -elemene (Germacrene A)	2.14
3	β -caryophyllene	0.79
4	4,11,11-trimethyl-8-methylene-bicyclo[7.2.0]undec-4-ene	0.21
5	α -neoclovene	2.55
6	α -humulene	1.98
7	trans-caryophyllene	3.47
8	β -neoclovene	1.34
9	α -selinene	0.54
10	nerolidol	1.74
11	neointermedeol	4.99
12	3,3,7,11-tetramethyltricyclo[5.4.0.0(4,11)]undecan-1-ol	6.11
13	2s,6s-2,6,8,8-tetramethyltricyclo[5.2.2.0(1,6)]undecan-2-ol	1.18

Table S4. Sesquiterpene contents in the AeTPS1 product

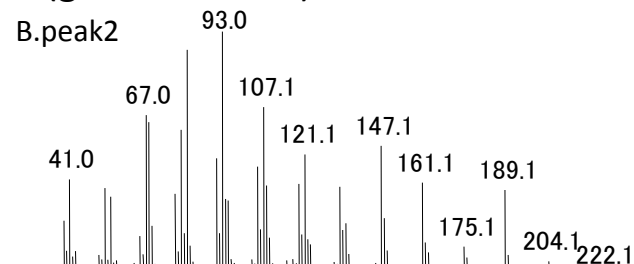
No.	Sesquiterpene (more than 1%)	area %
1	α -cubebene	5.12
2	α -copaene	1.39
3	β -cubebene	1.33
4	β -farnesene	2.23
5	germacrene D	1.06
6	γ -bisabolene	1.30
7	δ -cadinene	3.51
8	1,2,3,4,4a,7-hexahydro-1,6-dimethyl-4-(1-methylethyl)- naphthalene	1.44

[MS (EI) spectrum of GC-MS peak]

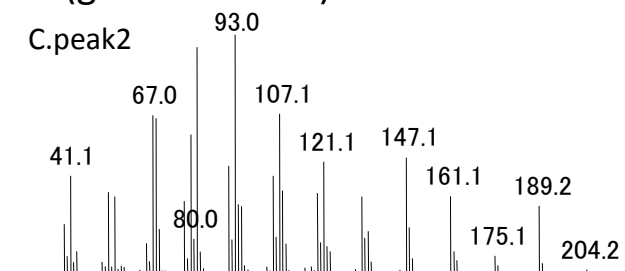
E (β -bisabolene)



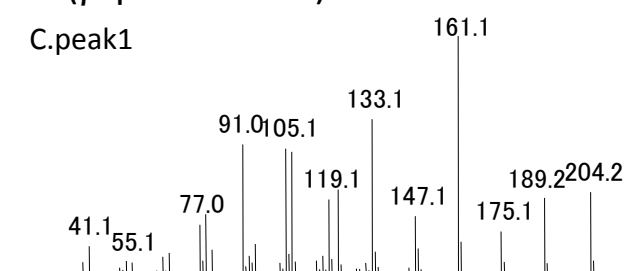
F (germacrene A)



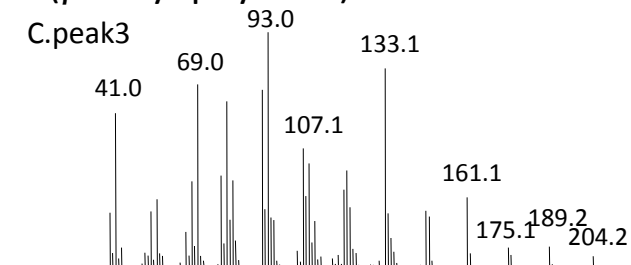
G (germacrene A)



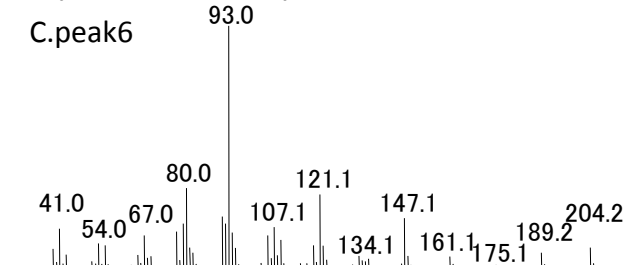
H (β -panasinene)



I (β -caryophyllene)



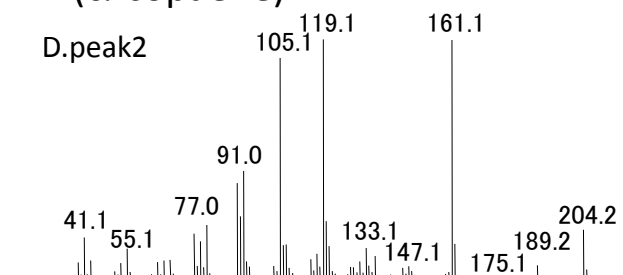
J (α -humulene)



[MS (EI) spectrum of GC-MS peak]

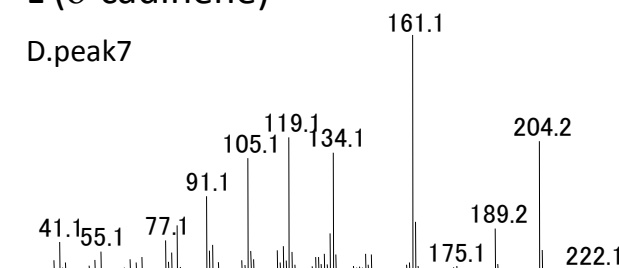
K (α -copaene)

D.peak2



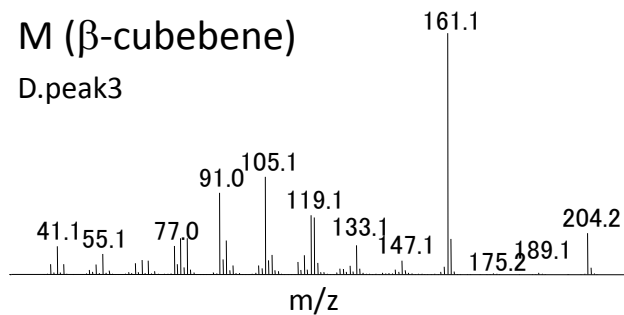
L (δ -cadinene)

D.peak7



M (β -cubebene)

D.peak3



N (germacrene D)

D.peak5

