Supplementary Figures

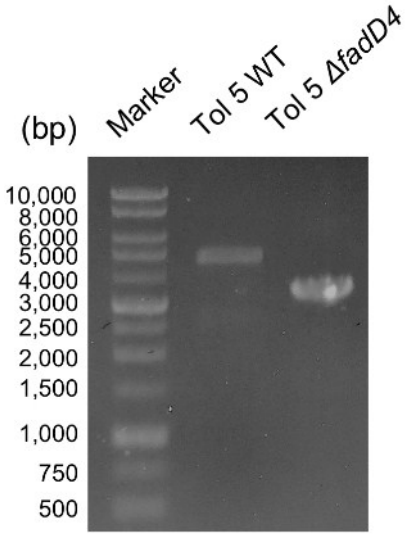

Figure S1. PCR confirmation of *fadD4* disruption in *Acinetobacter* sp. Tol 5. PCR was performed using the primers scofadD4-Fw and scofadD4-Re. The nucleotide sequences of these primers are shown in Table 2. From the genome sequence information for Tol 5, the lengths of PCR amplicons from the wild type (WT) and the Δ*fadD4* mutant are estimated to be 5,110 bp, and 3,516 bp, respectively.

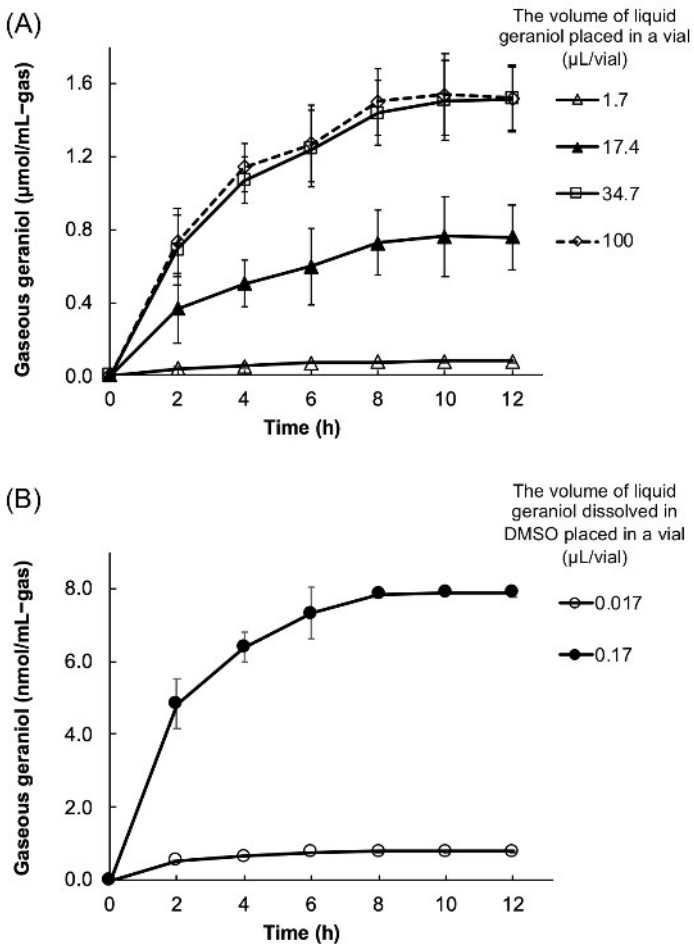

Figure S2. Time courses of geraniol vaporization in a 125 mL cylindrical vial. A drop of liquid geraniol (A) or DMSO solution containing geraniol (B) was placed on the bottom of the vial. The vial was incubated at 28 °C. Gaseous geraniol in the headspace of the vial was quantified by direct headspace GC-MS (A) or HS-SPME-GC-MS (B). Data are expressed as the mean ± standard deviation (SD) from three independent experiments.

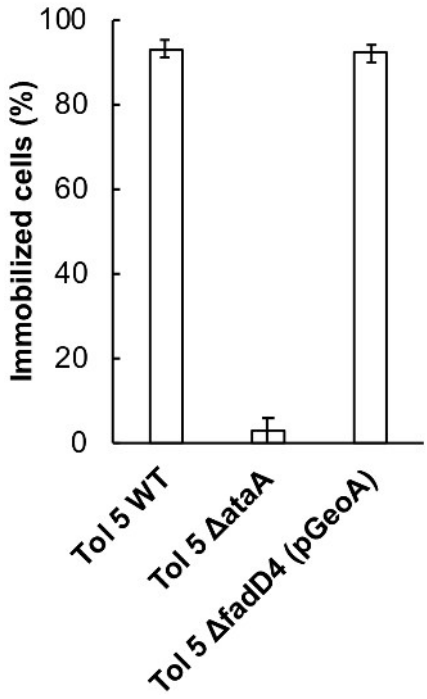

Figure S3. The immobilization ratios of *Acinetobacter* sp. Tol 5 and its derivative cells onto a polyurethane foam support. The cells were immobilized onto four pieces of polyurethane (PU) foam support in 20 mL BS medium in a flask with shaking and the immobilization ratio was calculated from a decrease in the OD_{660} of the cell suspension. Data are expressed as the mean ± SD from three independent experiments.

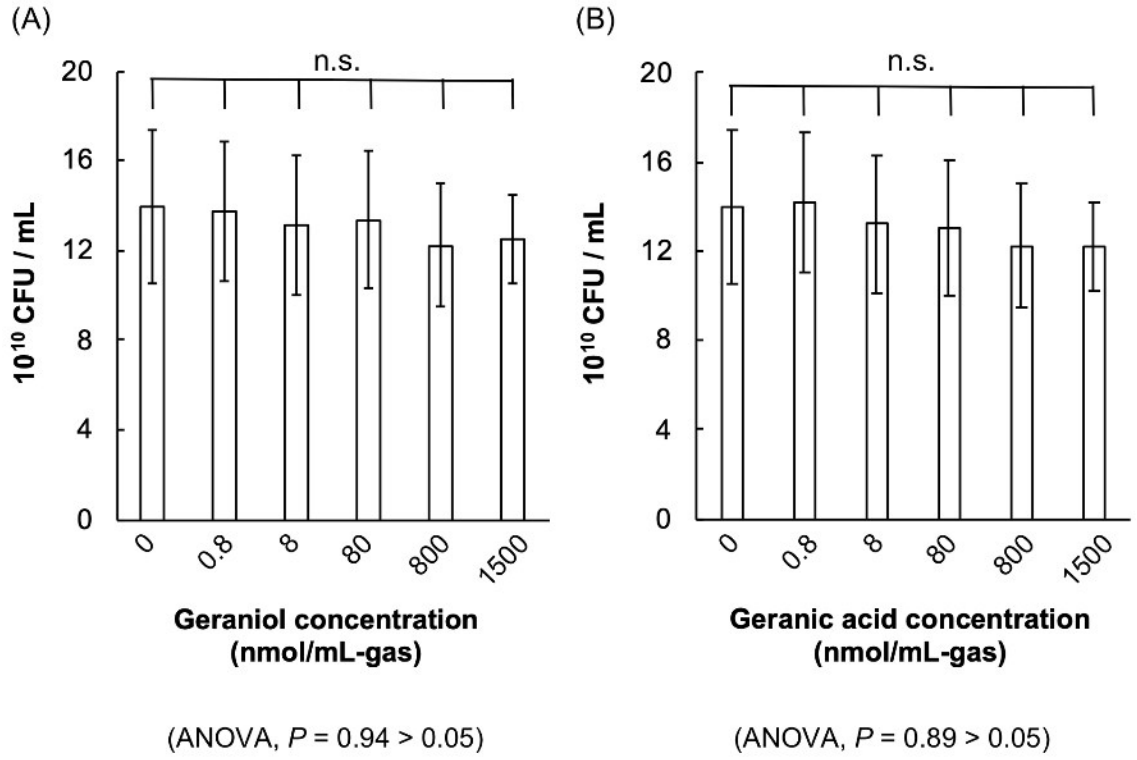

Figure S4. The toxicity of gaseous geraniol (A) and geranic acid (B) to *Acinetobacter* sp. Tol 5. Data are expressed as the mean ± SD from three independent cultivations.

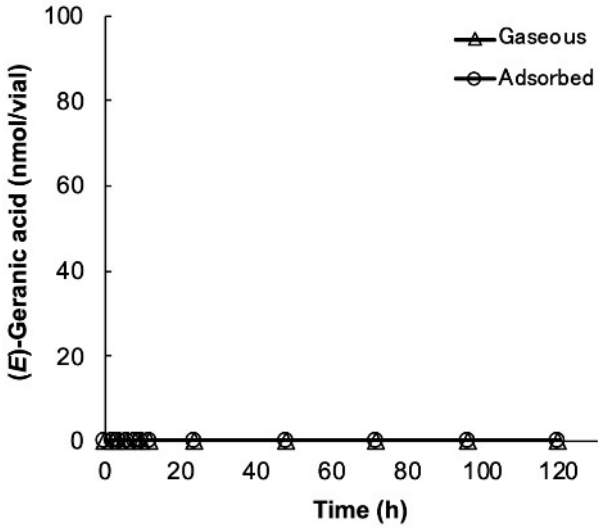

Figure S5. Confirmation of the lack of autoxidation of geraniol into (*E*)-GA and no catalytic activity of the PU support in the absence of bacterial cells. Four pieces of the PU support without cells were suspended from the top of a 125 mL cylindrical vial. A drop of the liquid geraniol (200 μmol/vial) was placed on the bottom of the vial. Gaseous and adsorbed (*E*)-GA was measured but could not be detected. Data are expressed as the mean ± SD from three independent experiments.

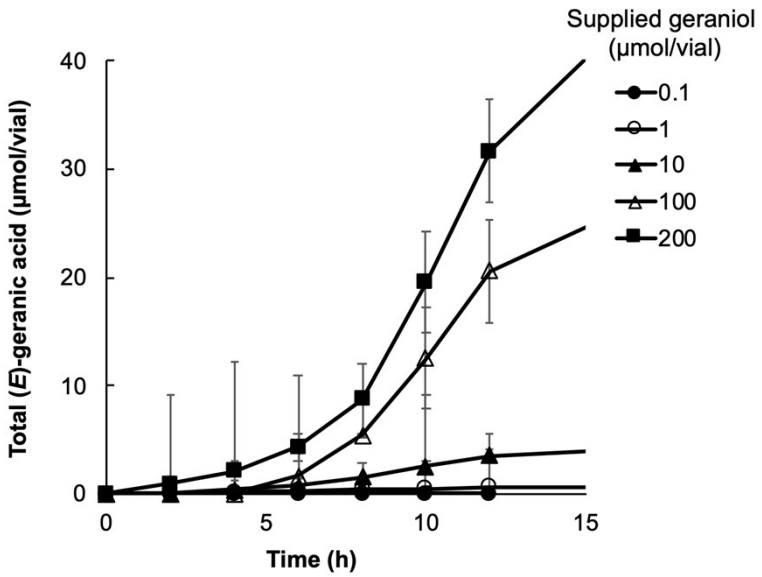

Figure S6. Time courses of the total produced (*E*)-GA, the sum of Figures 7B and 7C during the initial 15-h incubation. Data are expressed as the mean ± SD from three independent reactions.

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Table S1. Gas chromatography-mass spectrometry parameters for quantitation of geraniol and (*E*)-geranic acid by headspace-solid phase microextraction[a]

Compound	quantifier ion (*m/z*)	qualifier ion (*m/z*)	R^2	slope	linear range (nmol/vial)	LOD (nmol/vial)	LOQ (nmol/vial)
Geraniol	136	121	0.995	2.8×10^5	1–100	0.3	1.0
(*E*)-Geranic acid	123	168, 100	0.999	4.0×10^4	1–400	0.4	1.1

[a]LOD, limit of detection; LOQ, limit of quantification. LOD and LOQ were estimated as three and ten times the standard error of the intercept divided by the slope of the calibration equation[36]

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