**Supplementary materials**

**Supplementary methods**

Fifty mg $L^{-1}$ n-hexadecanoic acid on *Pseudomonas stutzeri* NRCB010 responding to NaCl, pH, and $Cu^{2+}$ stresses were evaluated with a 96-well microplate. 188 μL one-fifth NBNS medium with different pH, NaCl, and $Cu^{2+}$, 10 μL NRCB010 suspension, and 2 μL 5 g $L^{-1}$ n-hexadecanoic acid were added into a well, mixed thoroughly, and then incubation at 30℃, 100 rpm shaker for 48 h. OD600 was measured by a microplate analyzer to indicating NRCB010 biomass.

**Supplementary figures**

**Figure S1.**

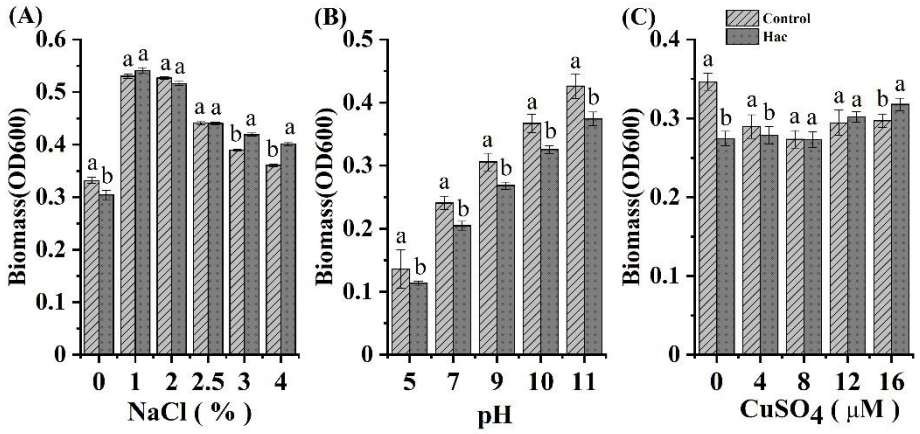


**Figure S1**. Effects of n-hexadecanoic acid (Hac) on *Pseudomonas stutzeri* NRCB010 responding to (A) NaCl, (B) pH, and (C) $Cu^{2+}$ stresses. Bars are means ± standard error (n = 16). Different letter above the bars at the same stress's condition denote significant differences between treatments by Duncan's post-hoc test ($p < 0.05$)

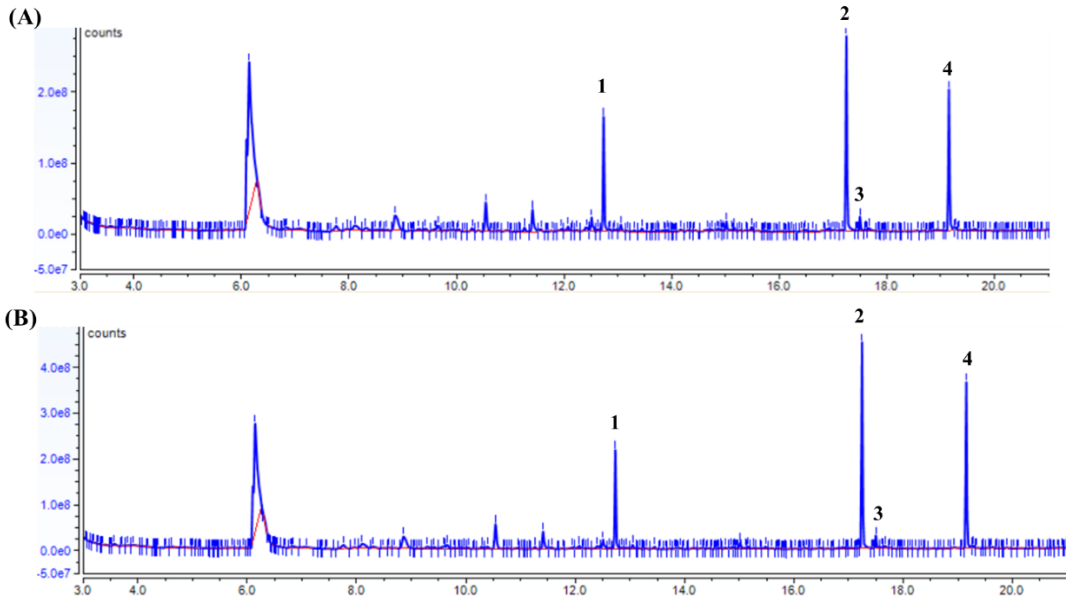


**Figure S2.** Ion chromatogram of root exudates of tomato (A), and tomato inoculated with NRCB010 (B). 1. 2,4-Di-tert-butylphenol (12.738 min), 2. Methyl hexadecanoate (17.248 min), 3. n-Hexadecanoic acid (17.503 min), 4. Methyl stearate (19.152 min).

**Supplementary table**

**Table S1** Compositions of tomato root exudates (RE/ NRCB010−) and induced by *Pseudomonas stutzeri* NRCB010 (RE/ NRCB010+)

| No. | Retention Time (min) | Compounds | Relative area (%) | |
|---|---|---|---|---|
| | | | RE/ NRCB010− | RE/ NRCB010+ |
| 1 | 3.572 | t-Butyl-(2-[3-(2,2-dimethyl-6-methylene-cyclohexyl)-propyl]- [1,3] dithian-2-yl)-dimethyl-silane | 0.24 | 0.29 |
| 2 | 4.599 | Cystine | 0.16 | 0.13 |
| 3 | 6.150 | 2-Pyrrolidinone, 1-methyl- | 29.11 | 23.27 |
| 4 | 6.850 | Mannosamine | 0.21 | 0.29 |
| 5 | 7.776 | Aziridine, 2-methyl-2-phenyl- | 0.76 | 0.75 |
| 6 | 7.973 | 12,15-Octadecadiynoic acid, methyl ester | 0.35 ** | 0.16 |
| 7 | 8.160 | 2,6-Xylidine | 0.62 | 1.14 |
| 8 | 8.323 | 6,9,12-Octadecatrienoic acid, phenylmethyl ester, (Z, Z, Z)- | 0.37 | 0.38 |
| 9 | 8.605 | Dodecanoic acid, 3-hydroxy- | 0.16 | 0.17 |
| 10 | 8.864 | Benzaldehyde, 3,5-dimethyl- | 2.88 | 2.75 |
| 11 | 9.303 | Pterin-6-carboxylic acid | 0.47 | 0.38 |
| 12 | 9.432 | Octadecane, 6-methyl- | 0.50 | 0.26 |
| 13 | 9.599 | Nonanal dimethyl acetal | 0.33 | 0.44 * |
| 14 | 9.663 | 2,3,5,8-tetramethyl-Decane | 0.89 | 0.56 |
| 15 | 9.980 | l-Gala-l-ido-octose | 0.24 | 0.30 |
| 16 | 10.299 | Octadecane, 6-methyl- | 0.48 | 0.29 |
| 17 | 10.425 | Octaethylene glycol monododecyl ether | 0.22 | 0.30 * |
| 18 | 10.544 | 3,4-Dimethylbenzamide | 1.96 | 3.00 * |
| 19 | 10.918 | 5-Dimethyl (dichloromethyl) silyloxypentadecane | 0.20 | 0.22 |
| 20 | 11.275 | Octadecane, 6-methyl- | 0.37 * | 0.28 |
| 21 | 11.418 | Dodecanal | 1.70 | 1.86 |
| 22 | 11.578 | Octadecane, 6-methyl- | 0.40 | 0.28 |
| 23 | 11.952 | Octadecane, 6-methyl- | 0.41 | 0.26 |
| 24 | 12.071 | Heptadecane, 2,6,10,14-tetramethyl- | 0.75 ** | 0.46 |
| 25 | 12.401 | Tetradecane, 2,6,10-trimethyl- | 0.80 | 0.50 |
| 26 | 12.517 | 2,6-dimethyl-Heptadecane | 1.47 | 0.96 |
| 27 | 12.738 | 2,4-Di-tert-butylphenol | 6.23 | 7.60 * |
| 28 | 12.857 | Cyclopropanedodecanoic acid, 2-octyl-, methyl ester | 0.20 | 0.16 |
| 29 | 13.058 | Eicosane, 2-methyl- | 0.61 | 0.41 |
| 30 | 13.445 | Dodecane, 1,1-dimethoxy- | 0.29 | 0.32 |
| 31 | 14.741 | Octadecane, 6-methyl- | 0.33 | 0.22 |
| 32 | 15.020 | Decane, 2,3,5,8-tetramethyl- | 0.79 | 0.50 |
| 33 | 15.163 | Tetradecanoic acid, 12-methyl-, methyl ester | 0.27 | 0.24 |
| 34 | 15.489 | Heptadecane, 2,6,10,15-tetramethyl- | 0.44 | 0.28 |
| 35 | 17.248 | Methyl hexadecanoate | 8.50 | 13.59 ** |
| 36 | 17.503 | n-Hexadecanoic acid | 0.51 | 0.88 ** |
| 37 | 17.670 | Heptadecane, 2,6,10,15-tetramethyl- | 0.35 | 0.32 |

| | | | | |
|---|---|---|---|---|
| 38 | 18.928 | Ethyl iso-allocholate | 0.24 | 0.31 ** |
| 39 | 19.152 | Methyl stearate | 5.24 | 11.45 * |
| 40 | 19.282 | Tetradecane, 2,6,10-trimethyl- | 0.29 | 0.20 |
| 41 | 19.646 | 2-Myristynoyl pantetheine | 0.25 | 0.20 |

Note: the more asterisks after the data of the same component means more significant differences between RE/ NRCB010− and RE/ NRCB010+ treatments by *t* test. *$p < 0.05$, ** $p < 0.01$.