Fig. S1 Screening of quorum sensing inhibitor for *S. marcescens* NJ01.

Fig. S2 Screening of differential metabolites (A) Score scatter plot of PCA model of group 3-PPA vs control; (B) Permutation test of OPLS-DA model for group 3-PPA vs control; (C) VIP and S-plot of OPLS-DA for group 3-PPA vs control; (D) volcano plot for group 3-PPA vs control.
Fig. S3 Heatmap of hierarchical clustering analysis for group 3-PPA treatment vs control.

Table S1 Effects of hordenine analogues on quorum sensing in *S. marcescens* NJ01

| Drug                                    | QS inhibition |
|-----------------------------------------|---------------|
| 3-phenylpropan-1-amine (3-PPA)          | +             |
| 4-(2-aminoethyl)-phenol                 | -             |
| 4-(2-(methylamino)-ethyl)-phenol        | -             |
| N-methyl-2-phenylethananime             | -             |
| 2-phenylethananime                      | -             |
| (E)-N-methyl-3-phenylprop-2-en-1-amine  | -             |
| N-methyl-3-phenylpropanamide            | -             |
| Compound                        | Activity |
|--------------------------------|----------|
| L-phenylalanine                | -        |
| 3-phenylpropanamide            | -        |
| cinnamamide                    | -        |
| N-methyl-3-phenylpropan-1-amine| +        |

* represents QS inhibitory activity, - is inactive
## Table S2 Identified and changes involved in intracellular metabolites

| No. | Metabolites                                      | FC\(^a\) | Log\(^2\) (FC)\(^b\) | P       |
|-----|-------------------------------------------------|-----------|-----------------------|---------|
| 1   | 2-Pyrrolidinone                                 | 2.9303    | 1.551                 | 6.83E-16|
| 2   | Acetylhydrazine                                  | 0.3075    | -1.7013               | 3.04E-18|
| 3   | 1-deoxy-1-(N6-lysino)-D-fructose                 | 2.1085    | 1.0762                | 1.27E-17|
| 4   | Dimethylglycine                                  | 0.28008   | -1.8361               | 4.51E-16|
| 5   | Sarcosine                                        | 0.27694   | -1.8524               | 9.34E-19|
| 6   | Aminoadipic acid                                 | 0.32447   | -1.6239               | 7.55E-19|
| 7   | Sphinganine                                      | 0.30482   | -1.714                | 1.45E-17|
| 8   | 2-Ethoxy-5-methylpyrazine                        | 0.45301   | -1.1424               | 1.06E-15|
| 9   | Kynurenic acid                                   | 0.12554   | -2.9937               | 5.52E-17|
| 10  | Glycyl-Valine                                    | 0.136     | -2.8783               | 5.31E-16|
| 11  | Propylpyrazine                                   | 2.4329    | 1.2827                | 2.35E-15|
| 12  | 5-Ethyl-2-(1-pyrrolidinyl)-2-cyclopenten-1-one   | 0.18227   | -2.4559               | 1.56E-14|
| 13  | N-Acetylcadaverine                               | 0.48119   | -1.0553               | 3.82E-17|
| 14  | Methamphetamine                                  | 96.227    | 6.5884                | 5.78E-18|
| 15  | 7-Aminonitrazepam                                | 2.1735    | 1.12                  | 9.13E-15|
| 16  | L-Arginine                                       | 2.5136    | 1.3297                | 3.86E-19|
| 17  | 3-Ethylidenhexahydropyrrolo[1,2-al]pyrazine-1,4-dione | 0.41573    | -1.2663               | 3.52E-16|
| 18  | Amphetamine                                      | 705.7     | 9.4629                | 2.69E-25|
| 19  | N-Ethylglycine                                   | 0.43449   | -1.2026               | 3.48E-15|
| 20  | (23S,24S)-17,23-Epoxy-24,29-dihydroxy-27-norlanost-8-ene-3,15-dione | 12.096 | 3.5964               | 4.56E-15|
| 21  | 3-Methylhistidine                                | 2.5949    | 1.3757                | 5.35E-16|
| 22  | Prostaglandin I2                                 | 0.4326    | -1.2089               | 1.31E-15|
| 23  | Pyridoxal                                        | 2.6095    | 1.3838                | 8.96E-15|
| 24  | 5-Methyl-2-propyloxazole                         | 0.35363   | -1.4997               | 7.19E-16|
| 25  | Acrimarine N                                     | 23.002    | 4.5237                | 1.20E-16|
| 26  | Dodecyl gallate                                  | 3.5401    | 1.8238                | 1.58E-14|
| 27  | 4-(Hydroxymethyl) benzenediazonium               | 595.41    | 9.2177                | 2.65E-25|
| 28  | N-Nitroso-pyrrolidine                            | 0.24758   | -2.014                | 2.07E-15|
| 29  | Xanthurenic acid                                 | 0.29822   | -1.7456               | 3.70E-15|
| 30  | Methionine sulfoxide                             | 0.41202   | -1.2792               | 5.92E-16|
| 31  | Isoleucyl-Alanine                                | 0.44521   | -1.1674               | 4.69E-16|
| 32  | Seryltyrosine                                    | 0.34348   | -1.5417               | 4.51E-15|
| 33  | Octadecylamine                                   | 0.39055   | -1.3564               | 2.17E-15|
| 34  | Polyoxyethylene dioleate                         | 0.05944   | -4.0724               | 9.89E-15|
| 35  | gamma-Aminobutyric acid                          | 0.21581   | -2.2121               | 5.04E-15|
| 36  | Arginyl-Methionine                               | 5.0007    | 2.3221                | 5.43E-16|
| 37  | Aspartyl-Leucine                                 | 0.25858   | -1.9513               | 1.47E-19|
| Compound                                                                 | pKa   | Ki    | pIC50  |
|------------------------------------------------------------------------|-------|-------|--------|
| Gibberellin A70                                                        | 0.010804 | -6.5323 | 4.50E-15 |
| Hydroxyproply-Leucine                                                  | 0.41678  | -1.2626 | 1.12E-14 |
| Vinylacetylglycine                                                     | 0.34844  | -1.521  | 2.55E-16 |
| Isopentyl beta-D-glucoside                                             | 5.0439   | 2.3345  | 9.84E-19 |
| N-Methylcalystegine B2                                                 | 14.254   | 3.8333  | 1.72E-16 |
| Pipereicosalidine                                                     | 5.001    | 2.3222  | 2.65E-15 |
| 1-(2,3-Dihydro-5,6-dimethyl-1H-pyrrolizin-7-yl)ethanone                | 459.05   | 8.8425  | 1.30E-20 |
| 1-(Methylsulfanyl)-1-oxopropan-2-yl acetate                           | 6.0907   | 2.6066  | 6.48E-15 |
| Cohibin A                                                             | 0.27244  | -1.876  | 6.70E-15 |
| N, N-Diethylbenzeneacetamide                                          | 89.251   | 6.4798  | 1.07E-15 |
| Brevianamide B                                                        | 82.145   | 6.3601  | 4.99E-16 |
| 2-Methoxy-3-(1-methylpropyl) pyrazine                                  | 4.4824   | 2.1643  | 2.32E-15 |
| Dibutyl malate                                                        | 0.013345  | -6.2275 | 1.47E-14 |
| Cohibin C                                                             | 5.4702   | 2.4516  | 2.94E-17 |
| 8-Hydroxyxantineol                                                    | 2.1899   | 1.1309  | 1.58E-14 |
| Nor-psiotropine                                                       | 4.5901   | 2.1985  | 3.93E-15 |
| PE (15:0/15:0)                                                        | 0.31522  | -1.6656 | 4.90E-15 |
| PE (20:1(11Z)/15:0)                                                   | 0.41603  | -1.2652 | 5.93E-15 |
| PE (20:1(11Z)/14:0)                                                   | 0.017563  | -5.8314 | 6.78E-15 |
| PC(P-18:1(11Z)/16:0)                                                  | 0.33521  | -1.5769 | 5.03E-16 |
| 3'-Deoxydihydrostreptomycin 6,3"-bisphosphate                         | 0.3481   | -1.5224 | 6.34E-14 |
| 4,11-Dichloro-5,12-dihydroquinol[2,3-b]acridine-7,14-dione            | 2.5658   | 1.3594  | 1.80E-16 |
| [2,6-dihydroxy-3-(3-phenylpropanoyl)phenyl]oxidanesulfonic acid       | 0.24655  | -2.0201 | 3.89E-14 |
| 1-Methyladenosine                                                     | 0.48677  | -1.0387 | 6.57E-16 |
| 3-(ADP)-glycerate                                                     | 29.492   | 4.8823  | 1.05E-14 |
| Caffeoyl aspartic acid                                                | 0.041094  | -4.6049 | 9.12E-16 |
| Pyrifenox                                                             | 2.8643   | 1.5182  | 2.04E-15 |
| Clomeprop                                                             | 12.238   | 3.6133  | 1.13E-16 |
| 2-amino-4-[(1-[(carboxymethyl)-C-hydroxycarbonimidoyl]-2-[(2,4-dihydroxy-5-[(2E)-3-(4-hydroxyphenyl)prop-2-enoyl]-3,6-dioxycyclohexa-1,4-dien-1-yl)sulfanyl ethyl]-C-hydroxycarbonimidoyl]butanoic acid | 0.10049 | -3.3149 | 3.61E-15 |
| Chloramphenicol 3-acetate                                             | 5.0011   | 2.3222  | 3.82E-15 |
| Iridin                                                                | 0.038429  | -4.7017 | 1.67E-16 |
| CMP                                                                   | 2.3715   | 1.2458  | 5.43E-14 |
| Kolaflavanone                                                         | 4.9384   | 2.304   | 3.61E-14 |
| Debromohymenialdisine                                                | 0.44037  | -1.1832 | 7.92E-16 |
|    | Compound                                           | Value     | Standard Error | p-Value    |
|----|----------------------------------------------------|-----------|----------------|------------|
| 72 | Isopentenyl phosphate                              | 0.36896   | -1.4385        | 8.42E-12   |
| 73 | Puerarin xyloside                                  | 3.699     | 1.8871         | 1.85E-14   |
| 74 | Pradimicinone I                                    | 4.7563    | 2.2498         | 3.38E-13   |
| 75 | Succinic anhydride                                 | 0.16831   | -2.5708        | 1.36E-12   |
| 76 | 2-Maleylacetate                                    | 0.1714    | -2.5446        | 5.09E-20   |
| 77 | Iridin                                             | 8.6228    | 3.1082         | 4.72E-16   |
| 78 | 5''-Phosphoribostamycin                            | 7.9657    | 2.9938         | 1.00E-13   |
| 79 | Nitrofen                                           | 0.29169   | -1.7775        | 8.37E-13   |
| 80 | 2-((2-[4-(1,2-dihydroxyethyl)-5,11,12,13-tetrahydroxy-8-oxo-3,7-dioxatricyclo[7.4.0.0trideca-1(13),9,11-trien-10-y1]-3,4,8,9,10-pentahydroxy-6-oxo-6H-benzo[c]chromen-1-yl]formamid) acetic acid | 0.33717   | -1.2977        | 2.91E-12   |
| 81 | Dihydrostreptomycin 3’alpha,6-bisphosphate         | 0.40676   | -1.2977        | 2.91E-12   |
| 82 | CMP                                                | 5.9041    | 2.5617         | 4.65E-15   |
| 83 | ADP                                                | 17.995    | 4.1695         | 4.14E-13   |
| 84 | Oxolinic acid                                      | 3.1264    | 1.6445         | 4.71E-13   |
| 85 | Se-Propenylseeleocysteine Se-oxide                 | 3.4801    | 1.7991         | 3.22E-14   |
| 86 | 2-((2-[4-(1,2-dihydroxyethyl)-5,11,12,13-tetrahydroxy-8-oxo-3,7-dioxatricyclo[7.4.0.0trideca-1(13),9,11-trien-10-y1]-3,4,8,9,10-pentahydroxy-6-oxo-6H-benzo[c]chromen-1-yl]formamid) acetic acid | 0.33717   | -1.5685        | 4.20E-14   |
| 87 | Calcium propiote                                   | 675.96    | 9.4008         | 4.79E-14   |
| 88 | 1,1-Dichloro-2,2-diphenylethane                    | 4.8759    | 2.2857         | 1.01E-12   |
| 89 | Trinitrotoluene                                    | 0.13945   | -2.8422        | 1.38E-13   |
| 90 | 3-Phosphoglycerol-glutathione                      | 7.1661    | 2.8412         | 7.79E-13   |
| 91 | Maysin 3’-methyl ether                             | 0.043961  | -4.5076        | 1.18E-13   |
| 92 | 2-amino-4-((1-[(carboxymethyl)-C-hydroxycarbonimidoyl]-2-((2,4-dihydroxy-5-[(2E)-3-(4-hydroxyphenyl)prop-2-enoyl]-3,6-dioxocyclohexa-1,4-dien-1-y1)sulfonyl)ethyl)-C-hydroxycarbonimidoyl)butanoic acid | 0.04352   | -4.5222        | 8.45E-12   |
| 93 | 2,5-Furandicarboxylate                             | 0.29774   | -1.7479        | 3.06E-12   |
| 94 | Proanthocyanidin A2                                | 0.37264   | -1.4241        | 1.31E-13   |
| 95 | CMP                                                | 8.4089    | 3.0719         | 3.78E-14   |
| 96 | 2-((2-[4-(1,2-dihydroxyethyl)-5,11,12,13-tetrahydroxy-8-oxo-3,7-dioxatricyclo[7.4.0.0trideca-1(13),9,11-trien-10-y1]-3,4,8,9,10-pentahydroxy-6-oxo-6H-benzo[c]chromen-1-yl]formamid) acetic acid | 9.7154    | 3.2803         | 1.06E-14   |
|   | Chemical Name | MW | LogP | pIC50  |
|---|----------------|----|------|--------|
| 97 | Kolaflavanone   | 0.12126 | -3.0439 | 1.07E-12 |
| 98 | Iridin          | 0.077792 | -3.6842 | 2.83E-13 |
| 99 | Apigenin 7-O-[beta-D-apiosyl-(1->2)-beta-D-glucoside] | 0.197778 | -2.3381 | 4.87E-12 |
| 100 | Maysin 3'-methyl ether | 0.029994 | -5.0592 | 4.83E-15 |
| 101 | 2-amino-4-({[carboxymethyl]-C-hydroxycarbonimidoyl}2-{(2,4-dihydroxy-5-{(2E)-3-(4-hydroxyphenyl)prop-2-enoyl}-3,6-dioxocyclohexa-1,4-dien-1-yl} sulfanyl) ethyl}-C-hydroxycarbonimidoyl) butanoic acid | 0.02496 | -5.3242 | 1.76E-13 |
| 102 | Amaroswerin     | 0.056244 | -4.1522 | 1.31E-13 |
| 103 | Trimethylselenonium | 2.6529 | 1.4075 | 2.86E-13 |
| 104 | Chloropropylate | 3.6111 | 1.8525 | 5.71E-13 |
| 105 | Tetracozole     | 7.8972 | 2.9813 | 6.62E-15 |
| 106 | Amaroswerin     | 0.025042 | -5.3195 | 3.86E-12 |
| 107 | 2-amino-4-({[carboxymethyl]-C-hydroxycarbonimidoyl}2-{(2,4-dihydroxy-5-{(2E)-3-(4-hydroxyphenyl)prop-2-enoyl}-3,6-dioxocyclohexa-1,4-dien-1-yl} sulfanyl) ethyl}-C-hydroxycarbonimidoyl) butanoic acid | 0.035499 | -4.8161 | 2.58E-12 |
| 108 | Melizame        | 0.43433 | -1.2031 | 5.17E-13 |
| 109 | Dihydrostreptomycin 3'alpha,6-bisphosphate | 0.47374 | -1.0778 | 9.93E-14 |
| 110 | Threote         | 4.3653 | 2.1261 | 1.30E-18 |
| 111 | 2-{(2-4-(1,2-dihydroxyethyl)-5,11,12,13-tetrahydroxy-8-oxo-3,7-dioxatricyclo[7.4.0.0trideca-1(13),9,11-trien-10-yl]-3,4,8,9,10-pentahydroxy-6-oxo-6H-benzo[c]chromen-1-yl} formamido) acetic acid | 0.014755 | -6.0827 | 4.94E-13 |
| 112 | Dihydrostreptomycin 3'alpha,6-bisphosphate | 0.011762 | -6.4097 | 3.47E-13 |
| 113 | Melizame        | 0.26565 | -1.9124 | 9.74E-13 |
| 114 | Chlorofenson    | 6.6832 | 2.7405 | 2.42E-16 |
| 115 | 3,8-Diglucosyldiosmetin | 0.21748 | -2.201 | 4.47E-13 |
| 116 | Gallocatechin-(4alpha->8)-epigallocatechin | 0.1981 | -2.3357 | 2.15E-12 |
| 117 | 6-{4-[(1E)-3-[6-{3,4-dihydroxy-2,5-bis(hydroxymethyl)oxolan-2-yl} oxy]-3,4,5-trihydroxyoxan-2-yl} methoxy]-3-} | 0.17907 | -2.4814 | 6.37E-13 |
oxoprop-1-en-1-yl]-2-hydroxyphenoxy)-3,4,5-trihydroxyoxane-2-carboxylic acid

| 118 | Hypoxanthine         | 242.73 | 7.9232 | 2.09E-17 |
| 119 | 4-(3-methylbut-2-en-1-yl)-8,17-dioxatetracyclo[8.7.0.0.3.7]heptadeca-1(10),2(7),3,5,11(16),12,14-heptaene-3,5,14-triol | 0.24325 | -2.0395 | 7.51E-12 |
| 120 | Angustine             | 0.18734 | -2.4162 | 2.92E-12 |
| 121 | 2-[(2-[4-(1,2-dihydroxyethyl)-5,11,12,13-tetrahydroxy-8-oxo-3,7-dioxatricyclo[7.4.0.0trideca-1(13),9,11-trien-10-yl]-3,4,8,9,10-pentahydroxy-6-oxo-6H-benzoc[chromen-1-yl]-formamido)acetic acid | 0.045936 | -4.4442 | 3.88E-12 |
| 122 | 3-(Uracil-1-yl)-L-alanine | 0.47989 | -1.0592 | 2.99E-14 |
| 123 | Monomethyl phenylphosphonate | 0.19032 | -2.3935 | 9.96E-14 |
| 124 | Succinic anhydride     | 0.48771 | -1.0359 | 6.96E-12 |
| 125 | 4-Bromo-3,5-cyclohexadiene-1,2-dione | 0.38098 | -1.3922 | 3.06E-14 |
| 126 | 2-Oxoadipate           | 0.21349 | -2.2278 | 2.89E-12 |
| 127 | 2-Hydroxymucone semialdehyde | 0.34831 | -1.5216 | 1.85E-12 |
| 128 | 2-Oxoadipate           | 0.36786 | -1.4428 | 7.39E-16 |
| 129 | Monodehydroascorbate   | 3.4591 | 1.7904 | 4.54E-14 |
| 130 | 4-Methylene-L-glutamate | 0.20089 | -2.3155 | 2.51E-12 |

Multiple changes of intracellular metabolites of *Serratia marcescens* NJ01 after 3-phenylpropan-1-amine action.

Red (+) and blue (-) represent the increased and decreased metabolites, respectively, in 3-phenylpropan-1-amine-treated group.

Table S3 Key metabolic pathways for comparison of 3-PPA treatment

| Pathway name                                | Total | Hits | Raw p     | Holm adjust | FDR   | Impact   |
|---------------------------------------------|-------|------|-----------|-------------|-------|----------|
| Alanine, aspartate and glutamate metabolism | 22    | 3    | 0.35736   | 1           | 1     | 0.45324  |
| Butanoate metabolism                        | 14    | 2    | 0.39736   | 1           | 1     | 0.4      |
| Sphingolipid metabolism                     | 13    | 2    | 0.36126   | 1           | 1     | 0.35715  |
| beta-Alanine metabolism                      | 11    | 2    | 0.28709   | 1           | 1     | 0.33333  |
| Arginine biosynthesis                        | 18    | 3    | 0.24699   | 1           | 1     | 0.29     |
| Lysine biosynthesis                          | 16    | 3    | 0.19408   | 1           | 1     | 0.27906  |
| Vitamin B6 metabolism                        | 11    | 1    | 0.67418   | 1           | 1     | 0.20513  |
| Purine metabolism                            | 62    | 5    | 0.73466   | 1           | 1     | 0.19205  |
| Cysteine and methionine metabolism           | 41    | 3    | 0.77616   | 1           | 1     | 0.13706  |
| Pantothenate and CoA biosynthesis            | 20    | 2    | 0.59      | 1           | 1     | 0.12467  |
| Glycerophospholipid metabolism               | 32    | 1    | 0.96328   | 1           | 1     | 0.11329  |
| Arginine and proline metabolism              | 25    | 5    | 0.08372   | 1           | 1     | 0.1118   |
| Pathway                                      | Nodes | Edges | p-value | FDR   |
|----------------------------------------------|-------|-------|---------|-------|
| Pyrimidine metabolism                        | 34    | 1     | 0.97026 | 1     | 0.01998 |
| Glycosylphosphatidylinositol (GPI)-anchor biosynthesis | 14    | 1     | 0.76065 | 1     | 0.00399  |