

## Electronic Supplementary Information for:

### Rapid Cloning and Expression of a Fungal Polyketide Synthase Gene Involved in Squalestatin Biosynthesis.

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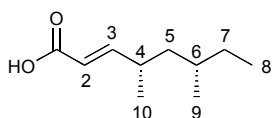
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(4*S*,6*S*,2*E*)-4,6-dimethyloct-2-enoic acid **2**.<sup>i</sup>



*Aspergillus oryzae* pTaex3-phpk1 was first grown in CDG medium (Czapek-Dox medium 35g, glucose 20g in deionised water 1L) at 25°C, 200rpm for 4 days, then transferred to CDS medium (Czapek-Dox medium 35g, soluble starch 20g in deionised water 1L) and grown for a further 2 days under the same conditions. Mycelia was filtered off, and the supernatant was acidified and extracted with EtOAc. Solvent was removed *in vacuo* and the organic residue dissolved in methanol. Purification was effected by repeated HPLC using a Phenomenex Luna RP-18 column (4.6 × 250mm, 5μ) at 1mLmin<sup>-1</sup>. Solvent A: 0.05% trifluoroacetic acid in degassed H<sub>2</sub>O. Solvent B: 0.04% trifluoroacetic acid in degassed CH<sub>3</sub>CN. Solvents were filtered through 0.4μ filters prior to use. Method: 0-5 min, 5%B; 5-42 min, 5-75%B; 42-45 min, 75-95%B; 45-50 min, 95%B; 50-55min 95-5%B. (4*S*,6*S*,2*E*)-4,6-Dimethyloct-2-enoic acid **2** was eluted at 35.3 min and collected manually. Removal of solvent *in vacuo* afforded **2** as a pale brown oil (21mg from 25L after purification); δ<sub>H</sub>(400MHz, CD<sub>3</sub>OD) 6.94 (1H, dd, *J* 8.8, 15.6, H-3), 5.80 (1H, d, *J* 15.6, H-2), 2.44 (1H, m, H-4), 1.35 (3H, m), 1.15 (2H, m), 1.05 (3H, d, *J* 6.8, H-10), 0.85 (3H, t, *J* 8.4, H-8), 0.84 (3H, d, *J* 6.0, H-9); δ<sub>C</sub>(100MHz, CD<sub>3</sub>OD) 169.6 (C-1), 155.8 (C-3), 120.3 (C-2), 43.3 (C-5 or C-7), 34.9 (C-4), 32.7 (C-6), 30.3 (C-7 or C-5), 20.2 (C-10), 18.6 (C-9), 10.9 (C-8); [α]<sub>D</sub> + 57.1 (c 0.21, CHCl<sub>3</sub>), lit<sup>1</sup> + 46.4 (c 0.06, CHCl<sub>3</sub>); ν<sub>max</sub>/cm<sup>-1</sup> 2961, 2915, 2875, 2680, 1692, 1647, 1461, 1418, 1284; *m/z* (CI) 171 (100%, [M]<sup>+</sup>), 153 (40, [M-H<sub>2</sub>O]<sup>+</sup>), 109 (20, [M-H<sub>2</sub>O-CO<sub>2</sub>]<sup>+</sup>), 57 (43, [CH<sub>3</sub>CH<sub>2</sub>CHCH<sub>3</sub>]<sup>+</sup>); HRMS *m/z* (CI) calcd for C<sub>10</sub>H<sub>19</sub>O<sub>2</sub> ([M]<sup>+</sup>) 171.1385, found 171.1380.

## Notes and references

- i. Synthetic material has been reported as a mixture of diastereomers (92% *d.e.*): K. C. Nicolaou, E. W. Yue, S. Lagreca, A. Nadin, Z. Yang, J. E. Leresche, T. Tsurii, Y. Naniwa and F. Dericcardis, *Chem. Eur. J.*, 1995, **1**, 467-494.