SUPPLEMENTARY MATERIAL

Two new sesquiterpenoids from the marine-sediment-derived fungus

Trichoderma harzianum P1-4

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Three cyclonerane sesquiterpenoids, including the known cyclonerodiol (1), together with its new derivatives, (10E)-12-acetoxy-10-cycloneren-3,7-diol (2) and 12-acetoxycyclonaran-3,7-diol (3) were isolated from the cultures of marine-sediment-derived fungus Trichoderma harzianum P1-4. The structures of the new compounds (2 and 3) were elucidated based on extensive spectroscopic methods (1D/2D NMR and HR-MS) and optical rotation analysis.

Keywords: Trichoderma harzianum; sesquiterpenoid; marine fungus; cyclonerodiol
List of Supporting Information

Table S1. Nuclear magnetic resonance data for compounds 2 and 3 (in CDCl₃, δ in ppm, J in Hz)

Figure S1. Key COSY (bold line) and HMBC (arrow) correlations of 2 and 3.

Figure S2. Key NOE correlations (double-headed arrow) of 2 and 3.

Figure S3. ¹H NMR spectrum of compound 2.

Figure S4. ¹³C NMR and DEPT spectra of compound 2.

Figure S5. ¹H, ¹H COSY spectrum of compound 2.

Figure S6. HSQC spectrum of compound 2.

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Figure S11. ¹H NMR spectrum of compound 3.

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Figure S13. ¹H, ¹H COSY spectrum of compound 3.

Figure S14. HSQC spectrum of compound 3.

Figure S15. HMBC spectrum of compound 3.

Figure S16. NOESY spectrum of compound 3.

Figure S17. EI-MS of compound 3.

Figure S18. HR-EI-MS of compound 3.
Table S1. Nuclear magnetic resonance data for compounds 2 and 3 (in CDCl$_3$, δ in ppm, J in Hz)

| No. | 2          |            | 3          |            |
|-----|------------|------------|------------|------------|
|     | δ$_H$      | δ$_C$      | δ$_H$      | δ$_C$      |
| 1   | 1.07 (d, 6.9) | 14.5 (CH$_3$) | 1.07 (d, 6.9) | 14.5 (CH$_3$) |
| 2   | 1.63 (m)   | 44.3 (CH)  | 1.63 (m)   | 44.2 (CH)  |
| 3   |           | 81.3 (C)   |            | 81.3 (C)   |
| 4   | 1.71 (m), 1.58(m) | 40.4 (CH$_2$) | 1.70 (m), 1.58(m) | 40.4 (CH$_2$) |
| 5   | 1.88 (m), 1.58 (m) | 24.3 (CH$_2$) | 1.87 (m), 1.57 (m) | 24.3 (CH$_2$) |
| 6   | 1.88 (m)   | 54.3 (CH)  | 1.86 (m)   | 54.2 (CH)  |
| 7   |           | 74.7 (C)   |            | 74.8 (C)   |
| 8   | 1.55 (t, 8.4) | 39.9 (CH$_2$) | 1.46 (m)   | 40.8 (CH$_2$) |
| 9   | 2.15 (m)   | 22.4 (CH$_2$) | 1.45(m), 1.33(m) | 21.1 (CH$_2$) |
| 10  | 5.49 (td, 7.1, 1.0) | 129.6 (CH) | 1.40 (m), 1.18 (m) | 34.0 (CH$_2$) |
| 11  |           | 130.2 (C)  | 1.81 (m)   | 32.6 (CH)  |
| 12  | 4.48 (s)   | 70.2 (CH$_2$) | 3.98 (dd, 10.7, 6.0) | 69.4 (CH$_2$) |
|     |            |            | 3.89 (dd, 10.7, 6.8) |            |
| 13  | 1.29 (s)   | 26.1 (CH$_3$) | 1.29 (s)   | 26.1 (CH$_3$) |
| 14  | 1.20 (s)   | 25.1 (CH$_3$) | 1.18 (s)   | 25.2 (CH$_3$) |
| 15  | 1.70 (s)   | 14.0 (CH$_3$) | 0.96 (d, 6.8) | 16.8 (CH$_3$) |
| 1'  |           | 171.0 (C)  |            | 171.3 (C)  |
| 2'  | 2.10 (s)   | 21.0 (CH$_3$) | 2.08 (s)   | 21.0 (CH$_3$) |
**Figure S1.** Key COSY (bold line) and HMBC (arrow) correlations of 2 and 3.

**Figure S2.** Key NOE correlations (double-headed arrow) of 2 and 3.
Figure S3. $^1$H NMR spectrum of compound 2.

Figure S4. $^{13}$C NMR and DEPT spectra of compound 2.
Figure S5. $^1$H,$^1$H COSY spectrum of compound 2.

Figure S6. HSQC spectrum of compound 2.
Figure S7. HMBC spectrum of compound 2.

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