Supporting Information

Lignans and Neolignans with Antioxidant and Human Cancer Cell Proliferation Inhibitory Activities from *Cinnamomum bejolghota* Confirm its Functional Food Property

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S1. ECD Calculations.

Figure S1. $^{1}H^{-1}H$ COSY (—), Selected HMBC (H \rightarrow C) and key ROESY (H \leftrightarrow H) correlations of 2

Figure S2. ¹H–¹H COSY (—), Selected HMBC (H \rightarrow C) and key ROESY (H \leftrightarrow H) correlations of 3

Figure S3. $^{1}H^{-1}H$ COSY (—), Selected HMBC (H \rightarrow C) and key ROESY (H \leftrightarrow H) correlations of 4

Figure S4. $^{1}H^{-1}H$ COSY (—), Selected HMBC (H \rightarrow C) and key ROESY (H \leftrightarrow H) correlations of 10

For bejolghotin A (1)

Figure S5. ¹H NMR spectrum (600 MHz) of bejolghotin A (1) in CDCl₃

Figure S6. ¹³C NMR spectrum (150 MHz) of bejolghotin A (1) in CDCl₃

Figure S7. ¹H–¹H COSY spectrum (600 MHz) of bejolghotin A (1) in CDCl₃

Figure S8. HSQC spectrum (600 MHz) of bejolghotin A (1) in CDCl₃

Figure S9. HMBC spectrum (600 MHz) of bejolghotin A (1) in CDCl₃

Figure S10. ROESY spectrum (600 MHz) of bejolghotin A (1) in CDCl₃

Figure S11. HRESIMS spectrum of bejolghotin A (1)

Figure S12. UV spectrum of bejolghotin A (1)

Figure S13. IR spectrum (KBr disc) of bejolghotin A (1)

For bejolghotin B (2)

Figure S14. ¹H NMR spectrum (600 MHz) of bejolghotin B (2) in CDCl₃

Figure S15. ¹³C NMR spectrum (150 MHz) of bejolghotin B (2) in CDCl₃

Figure S16. ¹H–¹H COSY spectrum (600 MHz) of bejolghotin B (2) in CDCl₃

Figure S17. HSQC spectrum (600 MHz) of bejolghotin B (2) in CDCl₃

Figure S18. HMBC spectrum (600 MHz) of bejolghotin B (2) in CDCl₃

Figure S19. ROESY spectrum (600 MHz) of bejolghotin B (2) in CDCl₃

Figure S20. HRESIMS spectrum of bejolghotin B (2)

Figure S21. UV spectrum of bejolghotin B (2)

Figure S22. IR spectrum (KBr disc) of bejolghotin B (2)

For bejolghotin C (3)

- Figure S23. ¹H NMR spectrum (600 MHz) of bejolghotin C (3) in CDCl₃
- Figure S24. ¹³C NMR spectrum (150 MHz) of bejolghotin C (3) in CDCl₃
- Figure S25. ¹H–¹H COSY spectrum (600 MHz) of bejolghotin C (3) in CDCl₃
- Figure S26. HSQC spectrum (600 MHz) of bejolghotin C (3) in CDCl₃
- Figure S27. HMBC spectrum (600 MHz) of bejolghotin C (3) in CDCl₃
- Figure S28. ROESY spectrum (600 MHz) of bejolghotin C (3) in CDCl₃
- Figure S29. HRESIMS spectrum of bejolghotin C (3)
- Figure S30. UV spectrum of bejolghotin C (3)
- Figure S31. IR spectrum (KBr disc) of bejolghotin C (3)
- For bejolghotin D (4)
- Figure S32. ¹H NMR spectrum (600 MHz) of bejolghotin D (4) in CDCl₃
- Figure S33. ¹³C NMR spectrum (150 MHz) of bejolghotin D (4) in CDCl₃
- Figure S34. ¹H–¹H COSY spectrum (600 MHz) of bejolghotin D (4) in CDCl₃
- Figure S35. HSQC spectrum (600 MHz) of bejolghotin D (4) in CDCl₃
- Figure S36. HMBC spectrum (600 MHz) of bejolghotin D (4) in CDCl₃
- Figure S37. ROESY spectrum (600 MHz) of bejolghotin D (4) in CDCl₃
- Figure S38. HRESIMS spectrum of bejolghotin D (4)
- Figure S39. UV spectrum of bejolghotin D (4)
- Figure S40. IR spectrum (KBr disc) of bejolghotin D (4)
- For bejolghotin E (9)
- Figure S41. ¹H NMR spectrum (600 MHz) of bejolghotin E (9) in CDCl₃
- Figure S42. ¹³C NMR spectrum (150 MHz) of bejolghotin E (9) in CDCl₃
- Figure S43. ¹H–¹H COSY spectrum (600 MHz) of bejolghotin E (9) in CDCl₃
- Figure S44. HSQC spectrum (600 MHz) of bejolghotin E (9) in CDCl₃
- Figure S45. HMBC spectrum (600 MHz) of bejolghotin E (9) in CDCl₃
- Figure S46. ROESY spectrum (600 MHz) of bejolghotin E (9) in CDCl₃
- Figure S47. HRESIMS spectrum of bejolghotin E (9)
- Figure S48. UV spectrum of bejolghotin E (9)
- Figure S49. IR spectrum (KBr disc) of bejolghotin E (9)
- For bejolghotin F (10)

- Figure S50. ¹H NMR spectrum (600 MHz) of bejolghotin F (10) in CDCl₃
- Figure S51. ¹³C NMR spectrum (150 MHz) of bejolghotin F (10) in CDCl₃
- Figure S52. ¹H–¹H COSY spectrum (600 MHz) of bejolghotin F (10) in CDCl₃
- Figure S53. HSQC spectrum (600 MHz) of bejolghotin F (10) in CDCl₃
- Figure S54. HMBC spectrum (600 MHz) of bejolghotin F (10) in CDCl₃
- Figure S55. ROESY spectrum (600 MHz) of bejolghotin F (10) in CDCl₃
- Figure S56. HRESIMS spectrum of bejolghotin F (10)
- Figure S57. UV spectrum of bejolghotin F (10)
- Figure S58. IR spectrum (KBr disc) of bejolghotin F (10)
- For bejolghotin G (11)
- Figure S59. ¹H NMR spectrum (600 MHz) of bejolghotin G (11) in CDCl₃
- Figure S60. ¹³C NMR spectrum (150 MHz) of bejolghotin G (11) in CDCl₃
- Figure S61. ¹H–¹H COSY spectrum (600 MHz) of bejolghotin G (11) in CDCl₃
- Figure S62. HSQC spectrum (600 MHz) of bejolghotin G (11) in CDCl₃
- Figure S63. HMBC spectrum (600 MHz) of bejolghotin G (11) in CDCl₃
- Figure S64. ROESY spectrum (600 MHz) of bejolghotin G (11) in CDCl₃
- Figure S65. HRESIMS spectrum of bejolghotin G (11)
- Figure S66. UV spectrum of bejolghotin G (11)
- Figure S67. IR spectrum (KBr disc) of bejolghotin G (11)

S1. ECD Calculations.

Conformational search was carried out by CONFLEX using the Merck molecular force field (MMFF) with standard parameters.¹ Next, they were subjected to geometry optimization at the B3LYP/6-31G(d) level of DFT calculations. Based on the DFT energies, conformers with a Boltzmann distribution $\geq 1\%$ were chosen for ECD calculations. The conformers were imported into Gaussian 09 package.² The ECD curves of the conformers were calculated by the TDDFT method at the B3LYP/6-311++G (2d, p) level with the CPCM model in a methanol solution.



Fig. 1. B3LYP/6-311+G(d,p) optimized lowest energy conformers for compound 1.



Fig. 2. B3LYP/6-311+G(d,p) optimized lowest energy conformers for compound **2**.



Fig. 3. B3LYP/6-311+G(d,p) optimized lowest energy conformers for compound **3**.



Fig. 4. B3LYP/6-311+G(d,p) optimized lowest energy conformers for compound **4**.



Fig. 5. B3LYP/6-311+G(d,p) optimized lowest energy conformers for compound **9**.



Fig. 6. B3LYP/6-311+G(d,p) optimized lowest energy conformers for compound **10**.



Fig. 7. B3LYP/6-311+G(d,p) optimized lowest energy conformers for compound **11**.

Reference:

(1) Jagannadh, B.; Reddy, S. S.; Thangavelu, R. P. Conformational preferences of 1,4,7-trithiacyclononane: a molecular mechanics and density functional theory study. *J. Mol. Model.* **2004**, *10*, 55–59.

(2) Frisch, M. J.; Trucks, G. W.; Schlegel, H. B.; Scuseria, G. E.; Robb, M. A.; Cheeseman, J. R.; Scalmani, G.; Barone, V.; Petersson, G. A.; Nakatsuji, H.; Li, X.; Caricato, M.; Marenich, A.; Bloino, J.; Janesko, B. G.; Gomperts, R.; Mennucci, B.; Hratchian, H. P.; Ortiz, J. V.; Izmaylov, A. F.; Sonnenberg, J. L.; Williams-Young, D.; Ding, F.; Lipparini, F.; Egidi, F.; Goings, J.; Peng, B.; Petrone, A.; Henderson, T.; Ranasinghe, D.; Zakrzewski, V. G.; Gao, J.; Rega, N.; Zheng, G.; Liang, W.; Hada, M.; Ehara, M.; Toyota, K.; Fukuda, R.; Hasegawa, J.; Ishida, M.; Nakajima, T.; Honda, Y.; Kitao, O.; Nakai, H.; Vreven, T.; Throssell, K.; Montgomery, Jr., J. A.; Peralta, J. E.; Ogliaro, F.; Bearpark, M.; Heyd, J. J.; Brothers, E.; Kudin, K. N.; Staroverov, V. N.; Keith, T.; Kobayashi, R.; Normand, J.; Raghavachari, K.; Rendell, A.; Burant, J. C.; Iyengar, S. S.; Tomasi, J.; Cossi, M.; Millam, J. M.; Klene, M.; Adamo, C.; Cammi, R.; Ochterski, J. W.; Martin, R. L.; Morokuma, K.; Farkas, O.; Foresman, J. B.; Fox, D. J. Gaussian, Inc.: Wallingford CT, 2016.

Figure S1. $^{1}H^{-1}H$ COSY (—), Selected HMBC (H \rightarrow C) and key ROESY (H \leftrightarrow H) correlations of 2



Figure S2. $^{1}H^{-1}H$ COSY (—), Selected HMBC (H \rightarrow C) and key ROESY (H \leftrightarrow H) correlations of 3



Figure S3. $^{1}H^{-1}H$ COSY (—), Selected HMBC (H \rightarrow C) and key ROESY (H \leftrightarrow H) correlations of 4



Figure S4. ${}^{1}H{-}^{1}H$ COSY (—), Selected HMBC (H \rightarrow C) and key ROESY (H \leftrightarrow H) correlations of 10





Figure S5. ¹H NMR spectrum (600 MHz) of bejolghotin A (1) in CDCl₃



Figure S6. ¹³C NMR spectrum (150 MHz) of bejolghotin A (1) in CDCl₃



Figure S7. ¹H–¹H COSY spectrum (600 MHz) of bejolghotin A (1) in CDCl₃



Figure S8. HSQC spectrum (600 MHz) of bejolghotin A (1) in CDCl₃



Figure S9. HMBC spectrum (600 MHz) of bejolghotin A (1) in CDCl₃



Figure S10. ROESY spectrum (600 MHz) of bejolghotin A (1) in CDCl₃

f1 (ppm)

Figure S11. HRESIMS spectrum of bejolghotin A (1)



Mass Spectrum SmartFormula Report

Figure S12. UV spectrum of bejolghotin A (1)



Figure S13. IR spectrum (KBr disc) of bejolghotin A (1)



Transmittance [%)



Figure S14. ¹H NMR spectrum (600 MHz) of bejolghotin B (2) in CDCl₃



Figure S15. ¹³C NMR spectrum (150 MHz) of bejolghotin B (2) in CDCl₃



Figure S16. ¹H–¹H COSY spectrum (600 MHz) of bejolghotin B (2) in CDCl₃



Figure S17. HSQC spectrum (600 MHz) of bejolghotin B (2) in CDCl₃



Figure S18. HMBC spectrum (600 MHz) of bejolghotin B (2) in CDCl₃



Figure S19. ROESY spectrum (600 MHz) of bejolghotin B (2) in CDCl₃

Figure S20.	HRESIMS	spectrum	of bejo	lghotin B	(2))
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Figure S21. UV spectrum of bejolghotin B (2)





Transmittance [%)

Figure S22. IR spectrum (KBr disc) of bejolghotin B (2)



Figure S23. ¹H NMR spectrum (600 MHz) of bejolghotin C (3) in CDCl₃



Figure S24. ¹³C NMR spectrum (150 MHz) of bejolghotin C (3) in CDCl₃



Figure S25. ¹H–¹H COSY spectrum (600 MHz) of bejolghotin C (3) in CDCl₃



Figure S26. HSQC spectrum (600 MHz) of bejolghotin C (3) in CDCl₃



Figure S27. HMBC spectrum (600 MHz) of bejolghotin C (3) in CDCl₃



Figure S28. ROESY spectrum (600 MHz) of bejolghotin C (3) in CDCl₃

Figure S29. HRESIMS spectrum of bejolghotin C (3)

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Figure S30. UV spectrum of bejolghotin C (3)





Transmittance [%]

Figure S31. IR spectrum (KBr disc) of bejolghotin C (3)



Figure S32. ¹H NMR spectrum (600 MHz) of bejolghotin D (4) in CDCl₃



Figure S33. ¹³C NMR spectrum (150 MHz) of bejolghotin D (4) in CDCl₃



Figure S34. ¹H–¹H COSY spectrum (600 MHz) of bejolghotin D (4) in CDCl₃



Figure S35. HSQC spectrum (600 MHz) of bejolghotin D (4) in CDCl₃



Figure S36. HMBC spectrum (600 MHz) of bejolghotin D (4) in CDCl₃



Figure S37. ROESY spectrum (600 MHz) of bejolghotin D (4) in CDCl₃

Figure S38. HRESIMS spectrum of bejolghotin D (4)



Figure S39. UV spectrum of bejolghotin D (4)



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Transmittance [%]

Figure S40. IR spectrum (KBr disc) of bejolghotin D (4)



Figure S41. ¹H NMR spectrum (600 MHz) of bejolghotin E (9) in CDCl₃



Figure S42. ¹³C NMR spectrum (150 MHz) of bejolghotin E (9) in CDCl₃



Figure S43. ¹H–¹H COSY spectrum (600 MHz) of bejolghotin E (9) in CDCl₃



Figure S44. HSQC spectrum (600 MHz) of bejolghotin E (9) in CDCl₃



Figure S45. HMBC spectrum (600 MHz) of bejolghotin E (9) in CDCl₃



Figure S46. ROESY spectrum (600 MHz) of bejolghotin E (9) in CDCl₃

Figure S47. HRESIMS spectrum of bejolghotin E (9)



Figure S48. UV spectrum of bejolghotin E (9)





Transmittance [%]

Figure S49. IR spectrum (KBr disc) of bejolghotin E (9)



Figure S50. ¹H NMR spectrum (600 MHz) of bejolghotin F (10) in CDCl₃



Figure S51. ¹³C NMR spectrum (150 MHz) of bejolghotin F (10) in CDCl₃



Figure S52. ¹H–¹H COSY spectrum (600 MHz) of bejolghotin F (10) in CDCl₃



Figure S53. HSQC spectrum (600 MHz) of bejolghotin F (10) in CDCl₃



Figure S54. HMBC spectrum (600 MHz) of bejolghotin F (10) in CDCl₃



Figure S55. ROESY spectrum (600 MHz) of bejolghotin F (10) in CDCl₃

Figure S56. HRESIMS spectrum of bejolghotin F (10)

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Figure S57. UV spectrum of bejolghotin F (10)



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Transmittance [%]

Figure S58. IR spectrum (KBr disc) of bejolghotin F (10)



Figure S59. ¹H NMR spectrum (600 MHz) of bejolghotin G (11) in CDCl₃



Figure S60. ¹³C NMR spectrum (150 MHz) of bejolghotin G (11) in CDCl₃



Figure S61. ¹H–¹H COSY spectrum (600 MHz) of bejolghotin G (11) in CDCl₃



Figure S62. HSQC spectrum (600 MHz) of bejolghotin G (11) in CDCl₃



Figure S63. HMBC spectrum (600 MHz) of bejolghotin G (11) in CDCl₃



Figure S64. ROESY spectrum (600 MHz) of bejolghotin G (11) in CDCl₃

Figure S65. HRESIMS spectrum of bejolghotin G (11)

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Figure S66. UV spectrum of bejolghotin G (11)





Figure S67. IR spectrum (KBr disc) of bejolghotin G (11)

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