Supplemental Data

Molecular-Targeted Antitumor Agents 19: Furospongiolide from a Marine *Lendenfeldia* sp. Sponge Inhibits Hypoxia-Inducible Factor-1 (HIF-1) Activation in Breast Tumor Cells

Yang Liu,[†,⊥] Rui Liu,[†,⊥] Shui-Chun Mao,[†] J. Brian Morgan,[†] Mika B. Jekabsons,[‡] Yu-Dong Zhou,[*†] and Dale G. Nagle[*†]

Department of Pharmacognosy and Research Institute of Pharmaceutical Sciences, School of Pharmacy, University of Mississippi, University, MS 38677-1848; Department of Biology, University of Mississippi, University, MS 38677

[⊥]*These authors contributed equally to this research.*

****Joint Corresponding Authors to whom correspondence should be addressed:***
(Y.-D.Z) Tel: (662) 915-7026. Fax: (662) 915-6975. E-mail: ydzhou@olemiss.edu
(D.G.N.) Tel: (662) 915-7026. Fax: (662) 915-6975. E-mail: dnagle@olemiss.edu

Furospongolide; 4-[(4*E*,8*E*)-11-(3-furanyl)-4,8-dimethyl-4,8-undecadienyl]-2(5H)-furanone (ACS Registry No. 76343-80-1) (6): Pale yellow oil; ^{1}H NMR ($CDCl_3$, 600 MHz): δ_H = 7.20 (1H, s), 7.07 (1H, s), 6.15 (1H, s), 5.68 (1H, s), 5.05 (1H, brs), 5.00 (1H, brs), 4.59 (2H, s), 2.32 (2H, s), 2.23 (2H, s), 2.13 (2H, s), 1.99 (2H, d, J = 6.0), 1.91 (2H, t, J = 6.0), 1.56 (2H, t, J = 6.0), 1.48 (6H, s). ^{13}C NMR ($CDCl_3$, 150 MHz): δc = 173.5 (qC), 170.7 (qC), 142.2 (CH), 138.5 (CH), 135.1 (qC), 133.3 (qC), 125.2 (CH), 124.6 (qC), 123.7 (CH), 114.8 (CH), 110.8 (CH), 72.8 (CH_2), 39.3 (CH_2), 38.6 (CH_2), 28.1 (CH_2), 27.5 (CH_2), 26.2 (CH_2), 24.9 (CH_2), 24.7 (CH_2), 15.7 (CH_3), 15.4 (CH_3); ESIMS *m/z* 329 $[M+H]^+$.

Methyl 24-methyl-12,24,25-trioxoscalar-16-en-22-oate (ACS Registry No. 81575-81-7) (8): Pink powder; $[\alpha]_D^{23}$ +55.20 (*c* 0.25, CH_2Cl_2); ^{13}C NMR ($CDCl_3$, 400 MHz): δc = 213.4 (qC), 202.1 (CH), 198.4 (qC), 179.9 (qC), 140.7 (CH), 140.6 (qC), 57.6 (CH), 56.1 (CH), 54.6 (CH), 54.3 (CH), 53.3 (qC), 50.7 (CH_3), 48.7 (qC), 42.0 (CH_2), 41.3 (CH_2), 38.3 (CH_2), 37.3 (qC). 36.9 (CH_2), 33.8 (qC), 33.4 (CH_3), 25.1 (CH_3), 23.1 (CH_3), 22.5 (CH_3), 20.0 (CH_2), 18.4 (CH_2), 15.0 (CH_3), 14.0 (CH_3).

22-Hydroxy-24-methyl-12,24-dioxoscalar-16-en-25-al (ACS Registry No. 75587-67-6) (9): White oil; $[\alpha]_D^{23}$ +84.75 (*c* 0.51, $CHCl_3$); ^{13}C NMR ($CDCl_3$, 400 MHz): δc = 210.4 (qC), 202.4 (CH), 198.4 (qC), 140.9 (CH), 62.6 (CH2), 59.5 (CH), 56.7 (CH), 55.0 (CH), 54.7 (CH), 53.2 (qC), 42.4 (CH_2), 42.0 (CH_2), 41.6 (qC), 38.5 (CH_2), 37.6 (qC), 33.9 (qC), 33.8 (CH_2), 33.0 (CH_3), 25.2 (CH_3), 23.2 (CH_2), 21.8 (CH_3), 18.3 (CH_2), 17.8 (CH_2), 15.9 (CH_3), 15.0 (CH_3).