Supporting Information

Preparation of Compound 3: To a cooled solution of 7-diethylaminocoumarin-3-carboxylic acid **2** (265 mg, 1.018 mmol), 1-hydroxybenzotriazole (14 mg, 0.103 mmol) and (1*R*,2*R*)-1,2-cyclohexanediamine (58 mg, 0.508 mmol) in CH_2Cl_2 (10 mL) were added triethylamine (108 mg, 1.067 mmol) and 1-(3-dimethylaminopropyl)-3-ethyl-carbodiimide hydrochloride (EDCI) (205 mg, 1.069 mmol). The reaction mixture was stirred at rt for 13 h, then concentrated to the residue, which was purified by silica gel column chromatography eluted with CH_2Cl_2/ethyl acetate (3/2) to give the desired product **3** (272 mg, 89%). mp 244-246 °C, R_f = 0.46 (CH_2Cl_2/ethyl acetate = 1/1). IR (neat) 3329, 1705, 1621, 1585, 1515, 1420, 1354 cm^{-1}. ^1H NMR (300 MHz, $CDCl_3$) δ 8.82 (*bs*, 2 H), 8.63 (*s*, 2 H), 7.34 (*d*, *J* = 9.0 Hz, 2 H), 6.55 (*dd*, *J* = 9.0, 2.1 Hz, 2 H), 6.41 (*d*, *J* = 2.1 Hz, 2 H), 4.05 (*bs*, 2 H), 3.39 (*q*, *J* = 7.0 Hz, 8 H), 2.15 (*bs*, 2 H), 1.74 (*bs*, 2 H), 1.42 (*bs*, 4 H), 1.18 (*t*, *J* = 7.0 Hz, 12 H). ^{13}C NMR (75 MHz, $CDCl_3$) δ 162.9, 162.3, 157.5, 152.2, 147.9, 131.0, 110.8, 109.6, 108.4, 96.6, 52.7, 45.0, 32.3, 24.6, 12.4. FAB-HRMS for $C_{34}H_{41}N_4O_6$ (M^++1) calcd 601.3011, found 601.3026.

Preparation of Compound 4: To a solution of (1*R*,2*R*)-*trans*-1,2-cyclohexanediol (11.6 mg, 0.1 mmol) and imidazolide **1** (79 mg, 0.254 mmol) in CH_3CN (5 mL) was added a 0.5 M solution of 1,8-diazabicyclo[5.4.0]undec-7-ene (DBU) (0.5 mL, 0.25 mmol) in CH_3CN at rt. The reaction mixture was stirred for 5 h. It was then concentrated and subjected to silica gel column chromatography. The desired product **4** was obtained (48 mg, 80%) by eluting with CH_2Cl_2/ethyl acetate (1/1). mp 96-98 °C, R_f = 0.49 (CH_2Cl_2/ethyl acetate = 1/1). IR (neat) 1761, 1622, 1588, 1515, 1224, 1192 cm^{-1}. ^1H NMR (400 MHz, $CDCl_3$) δ 8.28 (*s*, 2 H), 7.35 (*d*, *J* = 9.0 Hz, 2 H), 6.53 (*dd*, *J* = 9.0, 2.4 Hz, 2 H), 6.32 (*d*, *J* = 2.4 Hz, 2 H), 5.12 (*t*, *J* = 4.3 Hz, 2 H), 3.36 (*q*, *J* = 7.1 Hz, 8 H), 2.22-2.18 (*m*, 2 H), 1.82-1.70 (*m*, 2 H), 1.60-1.48 (*m*, 2 H), 1.42-1.36 (*m*, 2 H), 1.15 (*t*, *J* = 7.1 Hz, 12 H). ^{13}C NMR (100 MHz, $CDCl_3$) δ 162.6, 158.2, 152.8, 148.8, 131.5, 109.5, 108.1, 107.5, 96.5, 74.2, 45.0, 30.3, 23.6, 12.3. FAB-HRMS for $C_{34}H_{39}N_2O_8$ (M^++1) calcd 603.2706, found 603.2690.

Preparation of Compound 5: To a solution of methyl 4,6-*O*-benzylidene-α-D-glucopyranoside (29 mg, 0.102 mmol) and imidazolide **1** (79 mg, 0.254 mmol) in CH_3CN (5 mL) was added a 0.5 M solution of DBU (0.5 mL, 0.25 mmol) in CH_3CN at rt. The reaction mixture was stirred for 12 h. It was then concentrated and subjected to silica gel column chromatography. The desired product **5** was obtained (61 mg, 78%) by eluting with hexane/ethyl acetate (2/3). mp 154-156 °C, R_f = 0.18 (hexane/ethyl acetate = 2/3). IR (neat) 1764, 1622, 1589, 1516, 1224, 1194 cm^{-1}. ^1H NMR (400 MHz, $CDCl_3$) δ 8.39 (*s*, 1

H), 8.25 (*s*, 1 H), 7.48-7.38 (*m*, 3 H), 7.28-7.18 (*m*, 4 H), 6.51 (*dd*, *J* = 9.0, 2.4 Hz, 1 H), 6.45 (*dd*, *J* = 9.0, 2.4 Hz, 1 H), 6.26 (*d*, *J* = 2.4 Hz, 1 H), 6.23 (*d*, *J* = 2.4 Hz, 1 H), 5.94 (*t*, *J* = 9.7 Hz, 1 H), 5.57 (*s*, 1 H), 5.18 (*d*, *J* = 3.6 Hz, 1 H), 5.05 (*dd*, *J* = 9.7, 3.6 Hz, 1 H), 4.30 (*dd*, *J* = 10.2, 4.6 Hz, 1 H), 3.98 (*dd*, *J* = 10.2, 4.6 Hz, 1 H), 3.90 (*t*, *J* = 9.5 Hz, 1 H), 3.82 (*t*, *J* = 10.2 Hz, 1 H), 3.38 (*s*, 3 H), 3.36-3.20 (*m*, 8 H), 1.16-1.00 (*m*, 12 H). ^{13}C NMR (100 MHz, $CDCl_3$) δ 162.4, 162.4, 158.4, 158.4, 158.3, 157.9, 153.3, 153.0, 150.2, 148.9, 137.0, 132.3, 131.3, 129.0, 128.2, 126.3, 109.8, 109.6, 107.7, 107.4, 107.4, 106.3, 101.7, 97.9, 96.4, 96.3, 79.0, 72.7, 69.2, 68.9, 62.6, 55.4, 45.1, 45.1, 12.4, 12.4. FAB-HRMS for $C_{42}H_{45}N_2O_{12}$ (M^++1) calcd 769.2973, found 769.2927.

Preparation of Compound 6: Ponasterone A (3.0 mg, 6.4 μmol) was first dissolved in 2 drops of pyridine, then added imidazolide **1** (56 mg) in CH_3CN (5 mL). After the addition of 0.5 M DBU solution (0.32 mL), the reaction mixture was stirred at rt for 1.5 h. It was then concentrated and purified by silica gel column chromatography eluted with CH_2Cl_2/MeOH (19/1). It gave compound **6** as the major product (2.5 mg, 58%). R_f = 0.20 (CH_2Cl_2/MeOH = 19/1). ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.43 (*s*, 1 H), 8.40 (*s*, 1 H), 7.47 (*d*, *J* = 9.0 Hz, 1 H), 7.41 (*d*, *J* = 9.0 Hz, 1 H), 6.61 (*dd*, *J* = 9.0, 2.3 Hz, 1 H), 6.56 (*dd*, *J* = 9.0, 2.3 Hz, 1 H), 6.45 (*d*, *J* = 2.3 Hz, 1 H), 6.38 (*d*, *J* = 2.3 Hz, 1 H), 5.90 (*d*, *J* = 2.0 Hz, 1 H), 5.68 (*s*, 1 H), 5.36 (*m*, 1 H), 3.47-3.37 (*m*, 9 H), 3.26 (*t*, *J* = 8.0 Hz, 1 H), 2.58 (*dd*, *J* = 12.6, 3.8 Hz, 1 H), 2.35 (*m*, 1 H), 2.18-1.41 (*m*, 19 H), 1.08 (*s*, 12 H), 0.92-0.86 (*m*, 9 H). ^{13}C NMR (100 MHz, $CDCl_3$) δ 164.9, 163.2, 162.7, 158.5, 158.4, 158.2, 153.0, 152.9, 150.0, 148.8, 132.0, 131.3, 121.6, 109.6, 109.0, 108.0, 107.8, 107.7, 96.8, 96.5, 84.7, 69.6, 68.1, 51.3, 49.0, 47.4, 45.1, 45.1, 38.7, 36.4, 34.4, 33.7, 31.9, 31.0, 29.4, 28.0, 23.8, 23.1, 22.3, 20.8, 20.4, 20.3, 17.5, 12.4, 12.4. FAB-HRMS for $C_{55}H_{71}N_2O_{13}$ (M^++1) calcd 951.5007, found 951.4977. A minor product was also observed during the reaction, which has R_f = 0.28 (CH_2Cl_2/MeOH = 19/1) and was considered as the 2,3,22-trichromophoric derivative. But we didn't secure enough material for its characterization.

Microscale reaction of imidazolide 1 and (1*R*,2*R*)-*trans*-1,2-cyclohexanediol: To a solution of (1*R*,2*R*)-*trans*-1,2-cyclohexanediol (50 μg) and imidazolide **1** (0.9 mg) in anhydrous acetonitrile (0.5 mL) was added DBU solution (0.5 M in MeCN, 5 μL). The mixture was stirred at rt for 2.5 h, then concentrated. The residue was pre-purified with a C_{18} cartridge (70% MeOH → MeOH) before subjected to preparative HPLC purification and analysis. Its normal phase HPLC profile is shown in figure 4. The major peak is the desired product **4**. Its CD spectrum is identical to that of the authentic sample.