Supporting Information

Discovery of Naturally Occurring Aurones that are Potent Allosteric Inhibitors of Hepatitis C Virus RNA-Dependent RNA Polymerase

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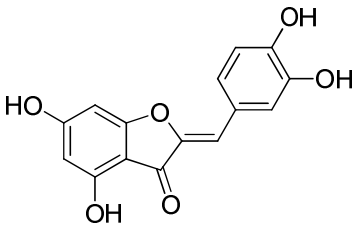
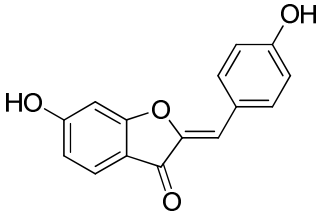
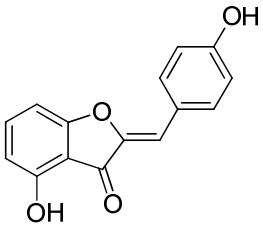
Compounds purification and characterization



(*Z*)-2-(3,4-dihydroxybenzylidene)-4,6-dihydroxybenzofuran-3(2*H*)-one (1).
The crude product was prepared according to general procedure D starting from (*Z*)-2-(3,4-dimethoxy-benzylidene)-4,6-dimethoxybenzofuran-3(2*H*)-one (**52**), and was washed three times with distilled water to yield a yellow solid, which was analytically pure and used without further purification (61%). m.p. > 260 °C (decomposition). ^{1}H NMR (400 MHz, MeOD) δ 7.47 (d, 1H, *J* = 1.4 Hz, $H_{2'}$), 7.18 (dd, 1H, *J* = 8.2 Hz, *J* = 1.4 Hz, $H_{6'}$), 6.82 (d, 1H, *J* = 8.2 Hz, $H_{5'}$), 6.56 (s, 1H, -CH=), 6.19 (s, 1H, H_7), 6.01 (s, 1H, H_5). ^{13}C NMR (100 MHz, MeOD) δ 178.9, 167.4, 166.9, 158.1, 147.4, 145.8, 145.4, 123.9, 123.6, 117.5, 115.9, 109.5, 102.8, 97.5, 90.2. MS (ESI) *m/z* 287 $(M+H)^+$, 309 $(M+Na)^+$. Anal. Calcd for $C_{15}H_{10}O_6 \cdot 1.3H_2O$: C, 57.57, H, 4.05. Found: C, 57.12, H, 3.81.

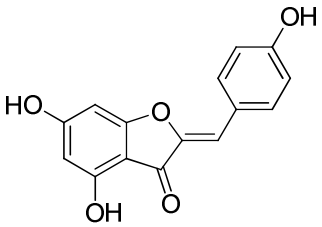


(*Z*)-2-(4-hydroxybenzylidene)-6-hydroxybenzofuran-3(2*H*)-one (10).
The crude product was prepared according to general procedure A starting from 6-hydroxybenzofuran-3(2*H*)-one (**2**) and 4-hydroxybenzaldehyde, and was recrystallized from acetonitrile to yield pure bright yellow crystals (77%). m.p. 294-296 °C. ^{1}H NMR (400 MHz, d_6-DMSO) δ 11.14 (br s, 1H, OH), 10.14 (br s, 1H, OH), 7,82 (d, 2H, *J* = 8.7 Hz, $H_{2',6'}$), 7.60 (d, 1H, *J* = 8.4 Hz, H_4), 6.88 (d, 2H, *J* = 8.7 Hz, $H_{3',5'}$), 6.78 (d, 1H, *J* = 1.9 Hz, H_7), 6.73 (s, 1H, -CH=), 6.70 (dd, 1H, J_1 = 8.4 Hz, J_2 = 1.9 Hz, H_5). ^{13}C NMR (100 MHz, d_6-DMSO) δ 181.2, 167.4, 166.0, 159.2, 145.6, 133.2, 125.6, 123.0, 116.0, 113.1, 112.8, 111.3, 98.4. MS (ESI) *m/z* 255 $(M+H)^+$, 277 $(M+Na)^+$. Anal. Calcd for $C_{15}H_{10}O_4 \cdot ½H_2O$: C, 68.44, H, 4.18. Found: C, 68.28, H, 4.11.



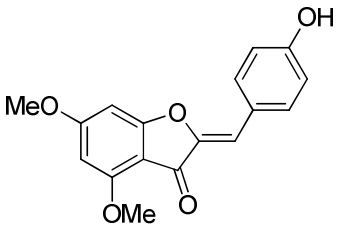
(*Z*)-2-(4-hydroxybenzylidene)-4-hydroxybenzofuran-3(2*H*)-one (11).
The crude product was prepared according to general procedure A starting from 4-hydroxybenzofuran-3(2*H*)-one (**5**) and 4-hydroxybenzaldehyde, and was recrystallized from acetonitrile to yield pure orange crystals (37%). m.p. 245-247 °C. ^{1}H NMR (400 MHz, d_6-DMSO) δ 11.05 (s, 1H, OH), 10.13 (s, 1H, OH), 7.81 (d, 2H, *J* = 8.4 Hz, $H_{2',6'}$), 7.51 (t, 1H, *J*

= 8.1 Hz, H_6), 6.88 (d, 2H, *J* = 8.4 Hz, $H_{3',5'}$), 6.84 (d, 1H, *J* = 8.1 Hz, H_7), 6.70 (s, 1H, -CH=), 6.61 (d, 1H, *J* = 8.1 Hz, H_5). ^{13}C NMR (100 MHz, d_6-DMSO) δ 181.1, 165.7, 159.2, 156.9, 144.9, 138.2, 133.2, 123.1, 116.0, 110.9, 110.3, 109.4, 102.4. MS (ESI) *m/z* 255 $(M+H)^+$, 277 $(M+Na)^+$. Anal. Calcd for $C_{15}H_{10}O_4 \cdot 0.1H_2O$: C, 70.37, H, 3.99. Found: C, 70.10, H, 3.96.



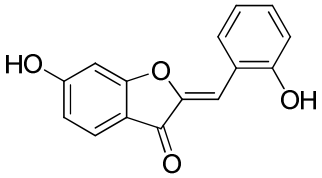
(*Z*)-2-(4-hydroxybenzylidene)-4,6-dihydroxybenzofuran-3(2*H*)-one (12).

To a solution of 4-hydroxybenzaldehyde (147 mg, 1.21 mmol) in methanol (10 mL) was added concentrated sulfuric acid (64.2 µL, 1.21 mmol), and the solution was stirred at room temperature for 30 minutes. 4,6-Dihydroxybenzofuran-3(2*H*)-one (**3**, 200 mg, 1.21 mmol) was then added, and the solution was refluxed for 4 hours. After cooling, the mixture was concentrated under reduced pressure, then the residue was diluted in water (100 mL), extracted with ethyl acetate and washed with water and brine. The combined organic layers were dried over magnesium sulfate and filtered, and the filtrate was concentrated under reduced pressure to give the crude compound, which was purified by column chromatography on silica gel (eluent: ethyl acetate 3 / cyclohexane 2) to yield a pure yellow solid (17%). m.p. > 295 °C (decomposition). ^{1}H NMR (400 MHz, d_6-DMSO) δ 10.84 (br s, 1H, OH), 10.03 (br s, 1H, OH), 7.75 (d, 2H, *J* = 8.7 Hz, $H_{2',6'}$), 6.86 (d, 2H, *J* = 8.7 Hz, $H_{3',5'}$), 6.54 (s, 1H, -CH=), 6.20 (d, 1H, *J* = 1.6 Hz, H_7), 6.06 (d, 1H, *J* = 1.6 Hz, H_5). ^{13}C NMR (100 MHz, d_6-DMSO) δ 179.1, 167.6, 167.1, 158.8, 158.2, 146.0, 132.8, 123.4, 116.0, 109.1, 102.9, 97.7, 90.5. MS (ESI) *m/z* 271 $(M+H)^+$, 293 $(M+Na)^+$. Anal. Calcd for $C_{15}H_{10}O_5$: C, 66.67, H, 3.73. Found: C, 66.43, H, 3.83.

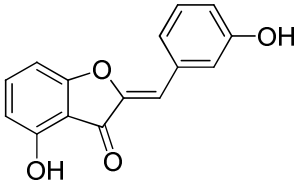


(*Z*)-2-(4-hydroxybenzylidene)-4,6-dimethoxybenzofuran-3(2*H*)-one (13).

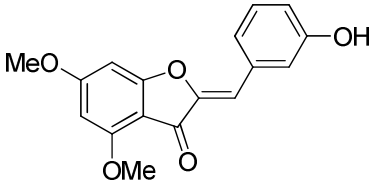
The crude product was prepared according to general procedure A starting from 4,6-dimethoxy-benzofuran-3(2*H*)-one (**6**) and 4-hydroxybenzaldehyde, and was recrystallized from methanol to yield pure yellow crystals (63%). m.p. > 275 °C (decomposition). ^{1}H NMR (400 MHz, d_6-DMSO) δ 10.11 (s, 1H, OH), 7.79 (d, 2H, *J* = 8.6 Hz, $H_{2',6'}$), 6.87 (d, 2H, *J* = 8.6 Hz, $H_{3',5'}$), 6.68 (d, 1H, *J* = 1.1 Hz, H_7), 6.65 (s, 1H, -CH=), 6.33 (d, 1H, *J* = 1.1 Hz, H_5), 3.91 (s, 3H, OMe), 3.88 (s, 3H, OMe). ^{13}C NMR (100 MHz, d_6-DMSO) δ 178.9, 168.6, 167.9, 159.1, 158.8, 145.6, 133.0, 123.1, 116.0, 110.4, 104.3, 94.3, 89.7, 56.4, 56.1. MS (ESI) *m/z* 299 $(M+H)^+$, 321 $(M+Na)^+$. Anal. Calcd for $C_{17}H_{14}O_5$: C, 68.46, H, 4.74. Found: C, 68.13, H, 4.78.



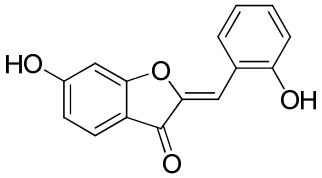
(*Z*)-2-(3-hydroxybenzylidene)-6-hydroxybenzofuran-3(2*H*)-one (14).
The crude product was prepared according to general procedure A starting from 6-hydroxybenzofuran-3(2*H*)-one (**2**) and 3-hydroxybenzaldehyde, and was recrystallized from acetonitrile to yield pure yellow crystals (86%). m.p. 272-274 °C. ^{1}H NMR (400 MHz, *d*$_6$-DMSO) δ 11.27 (br s, 1H, OH), 9.69 (br s, 1H, OH), 7.63 (d, 1H, *J* = 8.4 Hz, H_4), 7.36 (m, 2H, $H_{2',6'}$), 7.28 (t, 1H, *J* = 7.6 Hz, $H_{5'}$), 6.84 (d, 1H, *J* = 7.6 Hz, $H_{4'}$), 6.78 (s, 1H, H_7), 6.72 (d, 1H, *J* = 8,4 Hz, H_5), 6.69 (s, 1H, -CH=). ^{13}C NMR (100 MHz, *d*$_6$-DMSO) δ 181.5, 167.9, 166.6, 157.6, 147.3, 133.1, 129.9, 126.1, 122.4, 117.3, 117.1, 113.1, 112.8, 110.7, 98.5. MS (ESI) *m/z* 255 $(M+H)^+$, 277 $(M+Na)^+$. Anal. Calcd for $C_{15}H_{10}O_4 \cdot ¼H_2O$: C, 69.63, H, 4.06. Found: C, 69.47, H, 3.94.



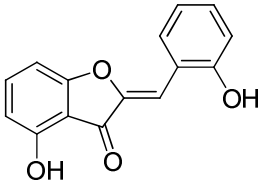
(*Z*)-2-(3-hydroxybenzylidene)-4-hydroxybenzofuran-3(2*H*)-one (15).
The crude product was prepared according to general procedure A starting from 4-hydroxybenzofuran-3(2*H*)-one (**5**) and 3-hydroxybenzaldehyde, and was recrystallized from acetonitrile to yield pure yellow crystals (55%). m.p. 207-209 °C. 11.21 (br s, 1H, OH), 9.69 (br s, 1H, OH), 7.54 (t, 1H, *J* = 8.2 Hz, H_6), 7.36 (m, 2H, $H_{2',6'}$), 7.28 (t, 1H, *J* = 7.8 Hz, $H_{5'}$), 6.84 (m, 2H, $H_{4',7}$), 6.66 (s, 1H, -CH=), 6.64 (d, 1H, *J* = 8.2 Hz, H_5). ^{13}C NMR (100 MHz, *d*$_6$-DMSO) δ 181.4, 166.0, 157.6, 157.2, 146.5, 138.7, 133.2, 129.9, 122.3, 117.2, 117.0, 110.7, 110.2, 109.0, 102.3. MS (ESI) *m/z* 255 $(M+H)^+$, 277 $(M+Na)^+$. Anal. Calcd for $C_{15}H_{10}O_4$: C, 70.87, H, 3.97. Found: C, 70.84, H, 4.74.



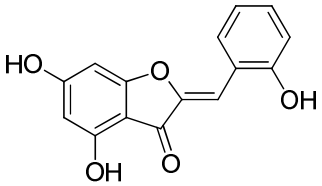
(*Z*)-2-(3-hydroxybenzylidene)-4,6-dimethoxybenzofuran-3(2*H*)-one (16).
The crude product was prepared according to general procedure A starting from 4,6-dimethoxy-benzofuran-3(2*H*)-one (**6**) and 3-hydroxybenzaldehyde, and was recrystallized from methanol to yield pure yellow crystals (76%). m.p. > 250 °C (decomposition). ^{1}H NMR (400 MHz, *d*$_6$-DMSO) δ 9.65 (s, 1H, OH), 7.34 (m, 2H, $H_{2',6'}$), 7.27 (t, 1H, *J* = 8.0 Hz, $H_{5'}$), 6.83 (d, 1H, *J* = 8.0 Hz, $H_{4'}$), 6.67 (d, 1H, *J* = 1.2 Hz, H_7), 6.61 (s, 1H, -CH=), 6.35 (d, 1H, *J* = 1.2 Hz, H_5), 3.92 (s, 3H, OMe), 3.89 (s, 3H, OMe). ^{13}C NMR (100 MHz, *d*$_6$-DMSO) δ 179.0, 169.0, 168.3, 159.0, 157.6, 147.2, 133.2, 129.9, 122.1, 117.3, 116.9, 109.8, 104.0, 94.4, 89.8, 56.5, 56.2. MS (ESI) *m/z* 299 $(M+H)^+$, 321 $(M+Na)^+$. Anal. Calcd for $C_{17}H_{14}O_5 \cdot H_2O$: C, 64.56, H, 5.06. Found: C, 64.31, H, 5.06.



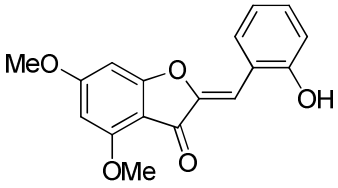
(*Z*)-2-(2-hydroxybenzylidene)-6-hydroxybenzofuran-3(2*H*)-one (17).
cThe crude product was prepared according to general procedure A starting from 6-hydroxybenzofuran-3(2*H*)-one (**2**) and 2-hydroxybenzaldehyde, and was recrystallized from acetonitrile to yield pure yellow crystals (25%). m.p. > 250 °C (decomposition). ^{1}H NMR (400 MHz, d_6-DMSO) δ 11.21 (br s, 1H, OH), 10.35 (br s, 1H, OH), 8.09 (d, 1H, J = 7.0 Hz, $H_{6'}$), 7.62 (d, 1H, J = 8.4 Hz, H_4), 7.26 (t, 1H, J = 7.0 Hz, $H_{4'}$), 7.09 (s, 1H, -CH=), 6.94 (m, 2H, $H_{3',5'}$), 6.79 (d, 1H, J = 1.5 Hz, H_7), 6.72 (dd, 1H, J = 8.4 Hz, J = 1.5 Hz, H_5). ^{13}C NMR (100 MHz, d_6-DMSO) δ 181.4, 167.7, 166.3, 157.0, 146.8, 131.3, 130.9, 125.8, 119.6, 118.8, 115.6, 112.9, 104.6, 98.5. MS (ESI) *m/z* 255 $(M+H)^+$, 277 $(M+Na)^+$. Anal. Calcd for $C_{15}H_{10}O_4 \cdot ¼\ H_2O$: C, 69.63, H, 4.06. Found: C, 69.81, H, 4.05.



(*Z*)-2-(2-hydroxybenzylidene)-4-hydroxybenzofuran-3(2*H*)-one (18).
The crude product was prepared according to general procedure A starting from 4-hydroxybenzofuran-3(2*H*)-one (**5**) and 2-hydroxybenzaldehyde, and was recrystallized from acetonitrile to yield pure yellow crystals (28%). m.p. > 250 °C. ^{1}H NMR (400 MHz, d_6-DMSO) δ 11.10 (br s, 1H, OH), 10.35 (s, 1H, OH), 8.08 (d, 1H, J = 7.2 Hz, $H_{6'}$), 7.52 (t, 1H, J = 7.6 Hz, H_6), 7.24 (t, 1H, J = 7.2 Hz, $H_{4'}$), 7.06 (s, 1H, -CH=), 6.94 (m, 2H, $H_{3',5'}$), 6.86 (d, 1H, J = 7.6 Hz, H_7), 6.62 (d, 1H, J = 7.6 Hz, H_5). ^{13}C NMR (100 MHz, d_6-DMSO) δ 181.2, 165.8, 157.0, 157.0, 146.0, 138.4, 131.2, 130.8, 119.6, 118.9, 115.6, 110.4, 109.1, 104.1, 102.4. MS (ESI) *m/z* 255 $(M+H)^+$, 277 $(M+Na)^+$. Anal. Calcd for $C_{15}H_{10}O_4 \cdot ¼H_2O$: C, 69.63, H, 4.06. Found: C, 69.19, H, 3.89.

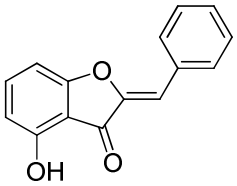


(*Z*)-2-(2-hydroxybenzylidene)-4,6-dihydroxybenzofuran-3(2*H*)-one (19). The crude product was prepared according to general procedure D starting from (*Z*)-2-(2-hydroxybenzylidene)-4,6-dimethoxybenzofuran-3(2*H*)-one (**20**), and was purified by column chromatography on silica gel (eluent: ethyl acetate 1 / cyclohexane 1) to yield a pure yellow solid (66%). m.p. 262-264 °C. ^{1}H NMR (400 MHz, d_6-acetone) δ 8.12 (d, 1H, J = 7.2 Hz, $H_{6'}$), 7.17 (m, 1H, $H_{4'}$), 7.12 (s, 1H, -CH=), 6.90 (m, 2H, $H_{3'}$, $H_{5'}$), 6.29 (d, 1H, J = 2.0 Hz, H_7), 6.08 (d, 1H, J = 2.0 Hz, H_5). ^{13}C NMR (100 MHz, d_6-acetone) δ 180.9, 167.6, 167.5, 157.9, 156.7, 147.5, 131.2, 130.9, 120.0, 119.6, 115.5, 103.6, 103.4, 97.7, 91.2. MS (ESI) *m/z* 271 $(M+H)^+$. Anal. Calcd for $C_{15}H_{10}O_5 \cdot ⅓H_2O$: C, 65.22, H, 3.86. Found: C, 65.37, H, 4.61.



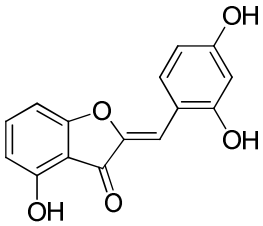
(*Z*)-2-(2-hydroxybenzylidene)-4,6-dimethoxybenzofuran-3(2*H*)-one (20).

The crude product was prepared according to general procedure A starting from 4,6-dimethoxy-benzofuran-3(2*H*)-one (**6**) and 2-hydroxybenzaldehyde, and was recrystallized from methanol to yield pure yellow crystals (51%). m.p. > 250 °C (decomposition). ^{1}H NMR (400 MHz, d_6-DMSO) δ 10.31 (s, 1H, OH), 8.06 (d, 1H, J = 7.8 Hz, $H_{6'}$), 7.24 (t, 1H, J = 7.8 Hz, $H_{4'}$), 7.01 (s, 1H, -CH=), 6.94 (d, 1H, J = 7.8 Hz, $H_{3'}$), 6.92 (t, 1H, J = 7.8 Hz, $H_{5'}$), 6.71 (d, 1H, J = 1.4 Hz, H_7), 6.34 (d, 1H, J = 1.4 Hz, H_5), 3.91 (s, 3H, OMe), 3.89 (s, 3H, OMe). ^{13}C NMR (100 MHz, d_6-DMSO) δ 179.0, 168.7, 168.0, 158.8, 156.9, 146.7, 131.1, 130.6, 119.4, 118.8, 115.6, 104.0, 103.6, 94.3, 89.8, 56.4, 56.0. MS (ESI) *m/z* 299 $(M+H)^+$, 321 $(M+Na)^+$. Anal. Calcd for $C_{17}H_{14}O_4$: C, 68.46, H, 4.74. Found: C, 68.39, H, 4.77.



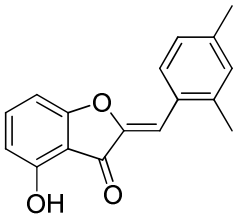
(*Z*)-2-benzylidene-4-hydroxybenzofuran-3(2*H*)-one (21).

The crude product was prepared according to general procedure A starting from 4-hydroxybenzofuran-3(2*H*)-one (**5**) and benzaldehyde, and was purified by column chromatography on silica gel (eluent: dichloromethane) to yield a pure yellow solid (72%). m.p. 148 °C. ^{1}H NMR (400 MHz, d_6-DMSO) δ 11.19 (s, 1H, OH), 7.95 (d, 2H, J = 7.2 Hz, $H_{2',6'}$), 7.54 (t, 1H, J = 8.1 Hz, H_6), 7.46 (m, 3H, $H_{3',4',5'}$), 6.87 (d, 1H, J = 8.1 Hz, H_7), 6.77 (s, 1H, -CH=), 6.64 (d, 1H, J = 8.1 Hz, H_5). ^{13}C NMR (100 MHz, d_6-DMSO) δ 181.4, 166.1, 157.2, 146.6, 138.8, 132.2, 131.0, 129.6, 129.0, 110.7, 109.9, 109.0, 102.5. MS (ESI) *m/z* 239 $(M+H)^+$, 261 $(M+Na)^+$. Anal. Calcd for $C_{15}H_{10}O_3 \cdot ⅔H_2O$: C, 72.00, H, 4.53. Found: C, 71.99, H, 4.15.



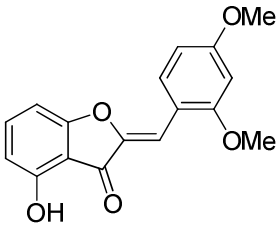
(*Z*)-2-(2,4-dihydroxybenzylidene)-4-hydroxybenzofuran-3(2*H*)-one (22).

The crude product was prepared according to general procedure D starting from (*Z*)-2-(2,4-dimethoxybenzylidene)-4-hydroxybenzofuran-3(2*H*)-one (**24**), and was washed three times with distilled water to yield a yellow solid, which was analytically pure and used without further purification (61%). m.p. > 230 °C (decomposition). ^{1}H NMR (400 MHz, d_6-DMSO) δ 10.94 (s, 1H, OH), 10.29 (s, 1H, OH), 10.02 (s, 1H, OH), 7.96 (d, 1H, J = 8.2 Hz, $H_{6'}$), 7.48 (t, 1H, J = 8.0 Hz, H_6), 7.03 (s, 1H, -CH=), 6.83 (d, 1H, J = 8.0 Hz, H_7), 6.59 (d, 1H, J = 8.0 Hz, H_5), 6.40 (m, 2H, $H_{3',5'}$). ^{13}C NMR (400 MHz, d_6-DMSO) δ 181.0, 165.6, 160.9, 159.1, 156.8, 144.3, 137.8, 132.4, 110.7, 110.1, 109.7, 108.3, 105.6, 102.5, 102.3. MS (ESI) *m/z* 271 $(M+H)^+$, 293 $(M+Na)^+$. Anal. Calcd for $C_{15}H_{10}O_5 \cdot H_2O$: C, 62.50, H, 4.17. Found: C, 62.64, H, 3.70.



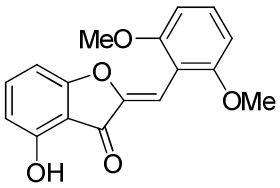
(*Z*)-2-(2,4-dimethylbenzylidene)-4-hydroxybenzofuran-3(2*H*)-one (23).

The crude product was prepared according to general procedure A starting from 4-hydroxybenzofuran-3(2*H*)-one (**5**) and 2,4-dimethylbenzaldehyde, and was recrystallized from methanol to yield pure yellow crystals (76%). m.p. 193-194 °C. ^{1}H NMR (400 MHz, *d*$_6$-DMSO) δ 11.14 (s, 1H, OH), 8.01 (d, 1H, *J* = 7.9 Hz, H$_{6'}$), 7.52 (t, 1H, *J* = 8.1 Hz, H$_6$), 7.12 (m, 2H, H$_{3',5'}$), 6.84 (d, 1H, *J* = 8.1 Hz, H$_7$), 6.78 (s, 1H, -CH=), 6.63 (d, 1H, *J* = 8.1 Hz, H$_5$), 2.40 (s, 3H, Me), 2.29 (s, 3H, Me). ^{13}C NMR (100 MHz, *d*$_6$-DMSO) δ 181.2, 166.0, 157.1, 146.2, 139.4, 138.5, 138.4, 131.3, 130.3, 127.6, 127.1, 110.6, 109.1, 106.5, 102.4, 21.0, 19.6. MS (ESI) *m/z* 267 (M+H)$^+$, 289 (M+Na)$^+$. Anal. Calcd for $C_{17}H_{14}O_3 \cdot \frac{1}{3}H_2O$: C, 75.00, H, 5.39. Found: C, 74.96, H, 5.35.



(*Z*)-2-(2,4-dimethoxybenzylidene)-4-hydroxybenzofuran-3(2*H*)-one (24).

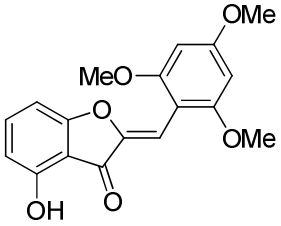
The crude product was prepared according to general procedure A starting from 4-hydroxybenzofuran-3(2*H*)-one (**5**) and 2,4-dimethoxybenzaldehyde, and was recrystallized from methanol to yield pure yellow crystals (76%). m.p. 234-235 °C. ^{1}H NMR (400 MHz, *d*$_6$-DMSO) δ 11.05 (s, 1H, OH), 8.11 (d, 1H, *J* = 8.6 Hz, H$_{6'}$), 7.51 (t, 1H, *J* = 8.0 Hz, H$_6$), 6.99 (s, 1H, -CH=), 6.84 (d, 1H, *J* = 8.0 Hz, H$_7$), 6.70 (d, 1H, *J* = 8.6 Hz, H$_{5'}$), 6.66 (s, 1H, H$_{3'}$), 6.62 (d, 1H, *J* = 8.0 Hz, H$_5$), 3.90 (s, 3H, OMe), 3.84 (s, 3H, OMe). ^{13}C NMR (100 MHz, *d*$_6$-DMSO) δ 181.2, 165.8, 162.4, 159.8, 157.0, 145.3, 138.3, 132.2, 113.2, 110.5, 109.4, 106.7, 103.9, 102.6, 98.3, 56.0, 55.6. MS (ESI) *m/z* 299 (M+H)$^+$, 321 (M+Na)$^+$, 619 (2M+Na)$^+$. Anal. Calcd for $C_{17}H_{14}O_5 \cdot \frac{1}{2}H_2O$: C, 66.44, H, 4.92. Found: C, 66.60, H, 4.88.



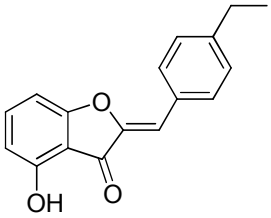
(*Z*)-2-(2,6-dimethoxybenzylidene)-4-hydroxybenzofuran-3(2*H*)-one (25).

The crude product was prepared according to general procedure A starting from 4-hydroxybenzofuran-3(2*H*)-one (**5**) and 2,6-dimethoxybenzaldehyde, and was purified by column chromatography on silica gel (eluent: dichloromethane) to yield pure yellow solid (34%). m.p. 152-153 °C. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.95 (br s, 1H, OH), 7.45 (t, 1H, *J* = 8.1 Hz, H$_6$), 7.34 (t, 1H, *J* = 8.4 Hz, H$_{4'}$), 7.09 (s, 1H, -CH=), 6.66 (d, 1H, *J* = 8.1 Hz, H$_7$), 6.61 (d, 2H, *J* = 8.4 Hz, H$_{3',5'}$), 6.58 (d, 1H, *J* = 8.1 Hz, H$_5$), 3.88 (s, 6H, OMe). ^{13}C NMR (100 MHz, $CDCl_3$) δ 185.5, 165.1, 159.1, 156.7, 147.5, 139.2, 131.5, 110.1, 109.9, 109.3,

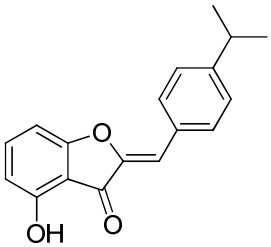
106.5, 104.0, 103.5, 56.0. MS (ESI) *m/z* 299 $(M+H)^+$, 321 $(M+Na)^+$, 619 $(2M+Na)^+$. Anal. Calcd for $C_{17}H_{14}O_5 \cdot \frac{1}{2}H_2O$: C, 66.45, H, 4.88. Found: C, 66.45, H, 4.78.



(*Z*)-2-(2,4,6-trimethoxybenzylidene)-4-hydroxybenzofuran-3(2*H*)-one (26).
The crude product was prepared according to general procedure A starting from 4-hydroxybenzofuran-3(2*H*)-one (**5**) and 2,4,6-trimethoxybenzaldehyde, and was recrystallized from methanol to yield pure yellow crystals (71%). m.p. 139-140 °C. ^{1}H NMR (400 MHz, d_6-DMSO) δ 11.00 (s, 1H, OH), 7.46 (t, 1H, J = 8.1 Hz, H_6), 6.68 (d, 1H, J = 8.1 Hz, H_7), 6.66 (s, 1H, -CH=), 6.57 (d, 1H, J = 8.1 Hz, H_5), 6.31 (s, 2H, $H_{3,5}$), 3.84 (s, 3H, OMe), 3.83 (s, 6H, OMe). ^{13}C NMR (100 MHz, d_6-DMSO) δ 181.1, 165.9, 162.8, 159.5, 156.9, 146.1, 138.4, 109.9, 109.5, 103.4, 102.2, 91.1, 55.9, 55.5. MS (ESI) *m/z* 329 $(M+H)^+$, 351 $(M+Na)^+$, 679 $(2M+Na)^+$. Anal Calcd for $C_{18}H_{16}O_6 \cdot \frac{1}{3}H_2O$: C, 64.67, H, 4.99. Found: C, 64.58, H, 5.03.

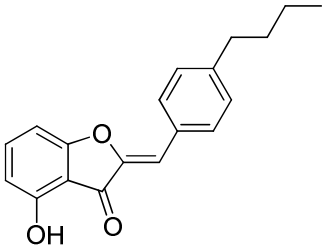


(*Z*)-2-(4-ethylbenzylidene)-4-hydroxybenzofuran-3(2*H*)-one (27).
The crude product was prepared according to general procedure A starting from 4-hydroxybenzofuran-3(2*H*)-one (**5**) and 4-ethylbenzaldehyde, and was recrystallized from methanol to yield pure yellow crystals (50%). m.p. 141-142 °C. ^{1}H NMR (400 MHz, d_6-DMSO) δ 11.16 (s, 1H, OH), 7.86 (d, 2H, J = 8.0 Hz, $H_{2',6'}$), 7.53 (t, 1H, J = 8.1 Hz, H_6), 7.32 (d, 2H, J = 8.0 Hz, $H_{3',5'}$), 6.86 (d, 1H, J = 8.1 Hz, H_7), 6.74 (s, 1H, -CH=), 6.64 (d, 1H, J = 8.1 Hz, H_5), 2.64 (q, 2H, J = 7.5 Hz, $PhCH_2CH_3$), 1.19 (t, 3H, J = 7.5 Hz, $PhCH_2CH_3$). ^{13}C NMR (100 MHz, d_6-DMSO) δ 181.3, 166.0, 157.1, 146.2, 145.8, 138.6, 131.1, 129.6, 128.4, 110.6, 110.1, 109.1, 102.4, 28.2, 15.3. MS (ESI) *m/z* 267 $(M+H)^+$, 289 $(M+Na)^+$. Anal. Calcd for $C_{17}H_{14}O_3 \cdot \frac{1}{8}H_2O$: C, 76.04, H, 5.31. Found: C, 75.93, H, 5.26.



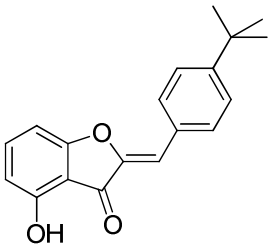
(*Z*)-2-(4-isopropylbenzylidene)-4-hydroxybenzofuran-3(2*H*)-one (28).
The crude product was prepared according to general procedure A starting from 4-hydroxybenzofuran-3(2*H*)-one (**5**) and 4-isopropylbenzaldehyde, and was recrystallized from methanol to yield pure yellow crystals (44%). m.p. 126-127 °C. ^{1}H NMR (400 MHz, d_6-DMSO) δ 11.16 (s, 1H, OH), 7.86 (d, 2H, J = 7.9 Hz, $H_{2',6'}$), 7.54 (t, 1H, J = 8.1 Hz, H_6), 7.36 (d, 2H, J = 7.9 Hz, $H_{3',5'}$), 6.86 (d, 1H, J = 8.1 Hz, H_7), 6.74 (s, 1H, -CH=), 6.64 (d, 1H, J =

8.1 Hz, H_5), 2.92 (sept., 1H, J = 6.8 Hz, PhC*H*$(CH_3)_2$), 1.21 (d, 6H, J = 6.8 Hz, PhCH$(CH_3)_2$). ^{13}C NMR (100 MHz, d_6-DMSO) δ 181.3, 166.0, 157.1, 150.4, 146.2, 138.6, 131.2, 129.8, 127.0, 110.6, 110.1, 109.1, 102.4, 33.5, 23.6. MS (ESI) *m/z* 281 $(M+H)^+$, 303 $(M+Na)^+$. Anal. Calcd for $C_{18}H_{16}O_3 \cdot ¼H_2O$: C, 75.92, H, 5.79. Found: C, 75.55, H, 5.62.



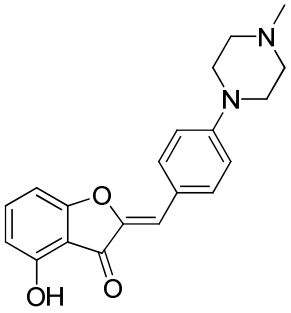
(*Z*)-2-(4-butylbenzylidene)-4-hydroxybenzofuran-3(2*H*)-one (29).

The crude product was prepared according to general procedure A starting from 4-hydroxybenzofuran-3(2*H*)-one (**5**) and 4-butylbenzaldehyde, and was recrystallized from methanol to yield pure yellow crystals (56%). m.p. 121-122 °C. ^{1}H NMR (400 MHz, d_6-DMSO) δ 11.15 (s, 1H, OH), 7.85 (d, 2H, J = 7.9 Hz, $H_{2',6'}$), 7.53 (t, 1H, J = 8.1 Hz, H_6), 7.30 (d, 2H, J = 7.9 Hz, $H_{3',5'}$), 6.86 (d, 1H, J = 8.1 Hz, H_7), 6.74 (s, 1H, -CH=), 6.63 (d, 1H, J = 8.0 Hz, H_5), 2.61 (t, 2H, J = 7.4 Hz, PhC*H*$_2$CH$_2$CH$_2$CH$_3$), 1.56 (quint., 2H, J = 7.4 Hz, PhCH$_2$C*H*$_2$CH$_2$CH$_3$), 1.30 (sext., 2H, J = 7.4 Hz, PhCH$_2$CH$_2$C*H*$_2$CH$_3$), 0.89 (t, 3H, J = 7.4 Hz, PhCH$_2$CH$_2$CH$_2$C*H*$_3$). ^{13}C NMR (100 MHz, d_6-DMSO) δ 181.3, 166.0, 157.1, 146.2, 144.5, 138.6, 131.1, 129.6, 129.0, 110.6, 110.2, 109.1, 102.4, 34.8, 32.9, 21.8, 13.8. MS (ESI) *m/z* 295 $(M+H)^+$, 317 $(M+Na)^+$. Anal. Calcd for $C_{19}H_{18}O_3$: C, 77.53, H, 6.17. Found: C, 77.32, H, 6.33.

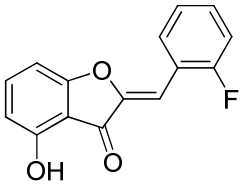


(*Z*)-2-(4-tertiobutylbenzylidene)-4-hydroxybenzofuran-3(2*H*)-one (30).

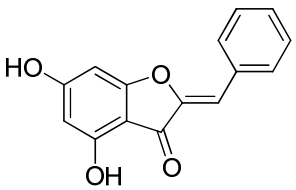
The crude product was prepared according to general procedure A starting from 4-hydroxybenzofuran-3(2*H*)-one (**5**) and 4-tertiobutylbenzaldehyde, and was recrystallized from methanol to yield pure yellow crystals (61%). m.p. 167-168 °C. ^{1}H NMR (400 MHz, d_6-DMSO) δ 11.16 (s, 1H, OH), 7.86 (d, 2H, J = 8.0 Hz, $H_{2',6'}$), 7.54 (t, 1H, J = 8.1 Hz, H_6), 7.49 (d, 2H, J = 8.0 Hz, $H_{3',5'}$), 6.85 (d, 1H, J = 8.1 Hz, H_7), 6.74 (s, 1H, -CH=), 6.64 (d, 1H, J = 8.1 Hz, H_5), 1.28 (s, 9H, Ph$(CH_3)_3$). ^{13}C NMR (100 MHz, d_6-DMSO) δ 181.3, 166.0, 157.2, 152.6, 146.3, 138.6, 130.9, 129.4, 125.8, 110.6, 110.0, 109.2, 102.4, 34.6, 30.9. MS (ESI) *m/z* 295 $(M+H)^+$, 317 $(M+Na)^+$. Anal. Calcd for $C_{19}H_{18}O_3$: C, 77.53, H, 6.17. Found: C, 77.22, H, 6.24.



(*Z*)-2-(4-(4-methylpiperazin-1-yl)benzylidene)-4-hydroxybenzofuran-3(2*H*)-one (31).
The crude product was prepared according to general procedure A starting from 4-hydroxybenzofuran-3(2*H*)-one (**5**) and 4-(4-methylpiperazin-1-yl)benzaldehyde, and was washed three times with distilled water to yield an orange solid, which was the analytically pure hydrochloride salt, used without further purification (71%). m.p. > 260 °C (decomposition). ^{1}H NMR (400 MHz, *d*$_6$-DMSO) δ 11.14 (s, 1H, OH), 11.14 (br s, 1H, NH$^+$) 7.85 (d, 2H, *J* = 8.4 Hz, H$_{2',6'}$), 7.51 (t, 1H, *J* = 8.1 Hz, H$_6$), 7.10 (d, 2H, *J* = 8.4 Hz, H$_{3',5'}$), 6.84 (d, 1H, *J* = 8.1 Hz, H$_7$), 6.72 (s, 1H, -CH=), 6.66 (d, 1H, *J* = 8.1 Hz, H$_5$), 4.02 (m, 2H, CH$_2$), 3.48 (m, 2H, CH$_2$), 3.24 (m, 2H, CH$_2$), 3.13 (m, 2H, CH$_2$), 2.80 (s, 3H, NMe). ^{13}C NMR (100 MHz, *d*$_6$-DMSO) δ 180.8, 165.5, 156.9, 149.9, 145.0, 137.9, 132.4, 122.8, 115.1, 110.6, 110.3, 109.3, 102.2, 51.7, 44.2, 41.8. MS (ESI) *m/z* 337 (M+H)$^+$. Anal. Calcd for C$_{15}$H$_{10}$O$_4$·HCl·1.75H$_2$O: C, 57.14, H, 5.83, N, 6.67. Found: C, 57.22, H, 5.95, N, 6.76.

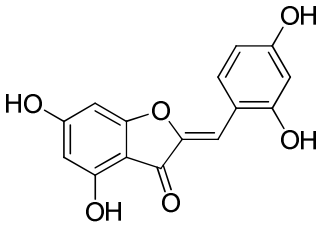


(*Z*)-2-(2-fluorobenzylidene)-4-hydroxybenzofuran-3(2*H*)-one (32).
The crude product was prepared according to general procedure A starting from 4-hydroxybenzofuran-3(2*H*)-one (**5**) and 2-fluorobenzaldehyde, and was recrystallized from methanol to yield pure yellow crystals (30%). m.p. 162-163 °C. ^{1}H NMR (400 MHz, *d*$_6$-DMSO) δ 11.29 (s, 1H, OH), 8.21 (m, 1H, H$_{6'}$), 7.56 (t, 1H, *J* = 8.1 Hz, H$_6$), 7.50 (m, 1H, H$_{3'}$), 7.35 (m, 2H, H$_{4',5'}$), 6.87 (d, 1H, *J* = 8.1 Hz, H$_7$), 6.75 (s, 1H, -CH=), 6.66 (d, 1H, *J* = 8.1 Hz, H$_5$). ^{13}C NMR (100 MHz, *d*$_6$-DMSO) δ 181.1, 166.1, 160.6 (d, *J* = 251.6 Hz), 157.4, 147.6, 139.1, 131.7 (d, *J* = 8.0 Hz), 131.1, 125.2, 119.9 (d, *J* = 11.5 Hz), 115.8 (d, *J* = 21.5 Hz), 111.0, 108.8, 102.5, 99.8 (d, *J* = 7.3 Hz). MS (ESI) *m/z* 257 (M+H)$^+$, 279 (M+Na)$^+$. Anal. Calcd for C$_{15}$H$_9$FO$_3$·⅔H$_2$O: C, 67.16, H, 3.85. Found: C, 66.80, H, 3.58.

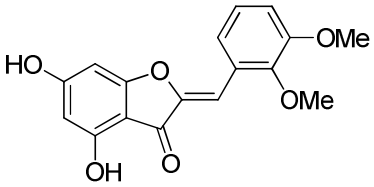


(*Z*)-2-benzylidene-4,6-dihydroxybenzofuran-3(2*H*)-one (33).
The crude product was prepared according to general procedure D starting from (*Z*)-2-benzylidene-4,6-dimethoxy-benzofuran-3(2*H*)-one (**54**), and was purified by column chromatography on silica gel (eluent: toluene 9 / methanol 1) to yield a pure yellow solid (33%). m.p. > 225 °C (decomposition). ^{1}H NMR (400 MHz, *d*$_6$-DMSO) δ 10.99 (br s, 2H, OH), 7.89 (d, 2H, *J* = 7.4 Hz, H$_{3',5'}$), 7.47 (m, 2H, H$_{2',6'}$), 7.39 (m, 1H, H$_{4'}$), 6.61 (s, 1H, -

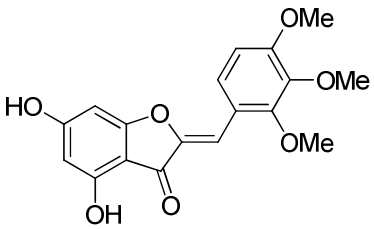
CH=), 6.23 (s, 1H, H_7), 6.08 (s, 1H, H_5). ^{13}C NMR (100 MHz, d_6-DMSO) δ 180.0, 167.8, 158.4, 147.7, 132.3, 130.6, 129.1, 128.9, 108.0, 102.4, 97.7, 90.6. MS (ESI) *m/z* 255 $(M+H)^+$, 277 $(M+Na)^+$. Anal. Calcd for $C_{15}H_{10}O_4 \cdot ⅔H_2O$: C, 67.67, H, 4.26. Found: C, 67.67, H, 4.15.



(*Z*)-2-(2,4-dihydroxybenzylidene)-4,6-dihydroxybenzofuran-3(2*H*)-one (34).
The crude product was prepared according to general procedure D starting from (*Z*)-2-(2,4-dimethoxy-benzylidene)-4,6-dimethoxybenzo-furan-3(2*H*)-one (**53**), and was washed three times with distilled water to yield an orange solid, which was analytically pure and used without further purification (58%). m.p. > 270 °C (decomposition). ^{1}H NMR (400 MHz, d_6-DMSO) δ 10.77 (s, 1H, OH), 10.74 (s, 1H, OH), 10.16 (s, 1H, OH), 9.90 (s, 1H, OH), 7.89 (d, 1H, J = 8.4 Hz, $H_{6'}$), 6.88 (s, 1H, -CH=), 6.37 (m, 2H, $H_{3',5'}$), 6.18 (d, 1H, J = 1.6 Hz, H_7), 6.05 (d, 1H, J = 1.6 Hz, H_5). ^{13}C NMR (100 MHz, d_6-DMSO) δ 179.1, 167.4, 166.7, 160.3, 158.6, 158.0, 145.4, 132.0, 110.8, 108.1, 103.6, 103.1, 102.3, 97.5, 90.4. MS (ESI) *m/z* 287 $(M+H)^+$, 309 $(M+Na)^+$. Anal. Calcd for $C_{15}H_{10}O_6 \cdot 1.1H_2O$: C, 58.86, H, 3.99. Found: C, 58.78, H, 3.98.

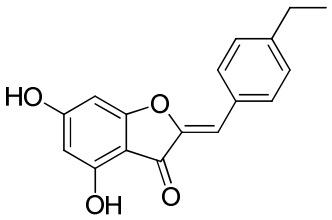


(*Z*)-2-(2,3-dimethoxybenzylidene)-4,6-dihydroxybenzofuran-3(2*H*)-one (35). The crude product was prepared according to general procedure B starting from 4,6-dihydroxybenzofuran-3(2*H*)-one (**3**) and 2,3-dimethoxybenzaldehyde, and was purified by column chromatography on silica gel (eluent: cyclohexane 2 / ethyl acetate 1 / acetic acid 0.005) to yield a pure yellow solid (72%). m.p. 272-273 °C. ^{1}H NMR (400 MHz, d_6-DMSO) δ 11.00 (s, 1H, OH), 10.94 (s, 1H, OH), 7.73 (dd, 1H, J_1 = 8.0 Hz, J_2 = 0.8 Hz, $H_{6'}$), 7.19 (t, 1H, J = 8.0 Hz, $H_{5'}$), 7.12 (dd, 1H, J_1 = 8.0 Hz, J_2 = 0.8 Hz, $H_{4'}$), 6.80 (s, 1H, -CH=), 6.21 (d, J = 1.6 Hz, 1H, H_7), 6.08 (d, J = 1.6 Hz, 1H, H_5), 3.84 (s, 3H, OMe), 3.80 (s, 3H, OMe). ^{13}C NMR (100 MHz, d_6-DMSO) δ 178.9, 167.7, 167.4, 158.5, 152.5, 148.3, 147.8, 125.9, 124.4, 122.0, 114.0, 102.4, 101.4, 97.8, 90.6, 60.9, 55.8.

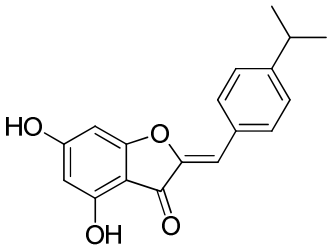


(*Z*)-2-(2,3,4-trimethoxybenzylidene)-4,6-dihydroxybenzofuran-3(2*H*)-one (36). The crude product was prepared according to general procedure B starting from 4,6-dihydroxybenzofuran-3(2*H*)-one (**3**) and 2,3,4-trimethoxybenzaldehyde, and was purified by column chromatography on silica gel (eluent: cyclohexane 2 / ethyl acetate 1 / acetic acid 0.005) to yield a pure yellow solid (80%). m.p. 245-246 °C. ^{1}H NMR (400 MHz, d_6-DMSO) δ

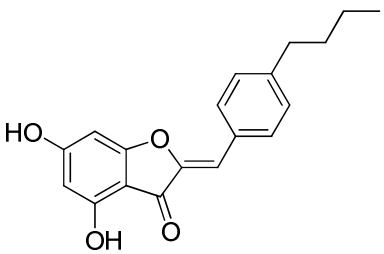
11.13 (s, 2H, OH), 7.87 (d, 1H, J = 7.6 Hz, $H_{6'}$), 6.97 (d, 1H, J = 7.6 Hz, $H_{5'}$), 6.72 (s, 1H, -CH=), 6.27 (s, 1H, H_7), 6.23 (s, 1H, H_5), 3.86 (s, 3H, OMe), 3.85 (s, 3H, OMe), 3.76 (s, 3H, OMe). ^{13}C NMR (100 MHz, d_6-DMSO) δ 181.0, 169.5, 169.5, 160.4, 156.6, 154.6, 149.3, 143.7, 127.9, 120.6, 110.6, 104.5, 103.7, 99.9, 92.5, 63.6, 62.5, 58.0.



(*Z*)-2-(4-ethylbenzylidene)-4,6-dihydroxybenzofuran-3(2*H*)-one (37). The crude product was prepared according to general procedure B starting from 4,6-dihydroxybenzofuran-3(2*H*)-one (**3**) and 4-ethylbenzaldehyde, and was purified by column chromatography on silica gel (eluent: cyclohexane 2 / ethyl acetate 1 / acetic acid 0.005) to yield a pure yellow solid (83%). m.p. 237-238 °C. ^{1}H NMR (400 MHz, d_6-DMSO) δ 10.94 (s, 2H, OH), 7.81 (d, 2H, J = 8.0 Hz, $H_{2',6'}$), 7.31 (d, 2H, J = 8.0 Hz, $H_{3',5'}$), 6.58 (s, 1H, -CH=), 6.22 (s, 1H, H_7), 6.08 (s, 1H, H_5), 2.64 (q, 2H, J = 7.6 Hz, CH_2CH_3), 1.18 (t, 3H, J = 7.6 Hz, CH_2CH_3). ^{13}C NMR (100 MHz, d_6-DMSO) δ 181.1, 169.8, 169.4, 160.4, 149.3, 147.3, 132.8, 131.8, 130.4, 110.3, 104.6, 99.7, 92.6, 30.1, 17.4. Anal. Calcd for $C_{17}H_{14}O_4 \cdot ¼H_2O$: C, 71.20, H, 5.06. Found: C, 71.47, H, 5.19.

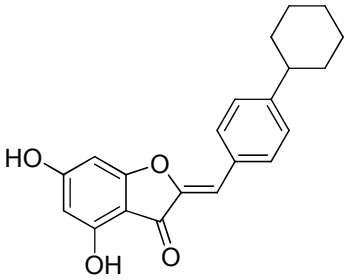


(*Z*)-2-(4-isopropylbenzylidene)-4,6-dihydroxybenzofuran-3(2*H*)-one (38). The crude product was prepared according to general procedure B starting from 4,6-dihydroxybenzofuran-3(2*H*)-one (**3**) and 4-isopropylbenzaldehyde, and was purified by column chromatography on silica gel (eluent: cyclohexane 2 / ethyl acetate 1 / acetic acid 0.005) to yield a pure yellow solid (88%). m.p. 229-230 °C. ^{1}H NMR (400 MHz, d_6-DMSO) δ 10.94 (s, 2H, OH), 7.80 (d, 2H, J = 8.0 Hz, $H_{2',6'}$), 7.32 (d, 2H, J = 8.0 Hz, $H_{3',5'}$), 6.58 (s, 1H, -CH=), 6.23 (d, 1H, J = 2.0 Hz, H_7), 6.09 (d, 1H, J = 2.0 Hz, H_5), 2.89 (sept, 1H, J = 6.8 Hz, $CH(CH_3)_2$), 1.19 (d, 6H, J = 6.8 Hz, $CH(CH_3)_2$). ^{13}C NMR (100 MHz, d_6-DMSO) δ 181.1, 169.8, 169.4, 160.4, 151.8, 149.4, 132.8, 132.0, 128.9, 110.3, 104.6, 99.7, 92.6, 35.4, 25.6. Anal. Calcd for $C_{18}H_{16}O_4 \cdot ¼H_2O$: C, 71.88, H, 5.49. Found: C, 71.99, H, 5.52.

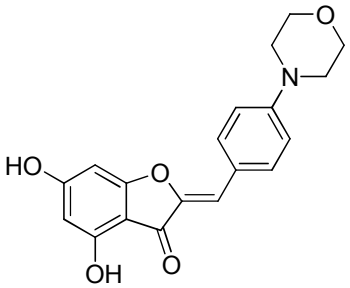


(*Z*)-2-(4-butylbenzylidene)-4,6-dihydroxybenzofuran-3(2*H*)-one (39).
The crude product was prepared according general procedure D starting from (*Z*)-2-(4-butylbenzylidene)-4,6-dimethoxybenzofuran-3(2*H*)-one (**44**), and was purified by column

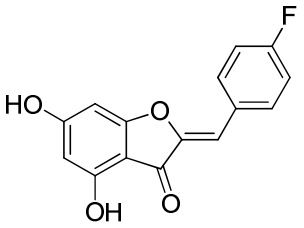
chromatography on silica gel (eluent: ethyl acetate 1 / cyclohexane 1) to yield a pure yellow solid (52%). m.p. 221-222 °C. ^{1}H NMR (400 MHz, d_6-DMSO) δ 10.95 (br s, 2H, OH), 7.79 (d, 2H, J = 8.1 Hz, $H_{2',6'}$), 7.29 (d, 2H, J = 8.1 Hz, $H_{3',5'}$), 6.57 (s, 1H, -CH=), 6.21 (s, 1H, H_7), 6.07 (s, 1H, H_5), 2.61 (t, 2H, J = 7.5 Hz, PhCH_2CH$_2$CH$_2$CH$_3$), 1.56 (quint., 2H, J = 7.5 Hz, PhCH$_2$CH_2CH$_2$CH$_3$), 1.31 (sext., 2H, J = 7.5 Hz, PhCH$_2$CH$_2$CH_2CH$_3$), 0.89 (t, 3H, J = 7.5 Hz, PhCH$_2$CH$_2$CH$_2$CH_3). ^{13}C NMR (100 MHz, d_6-DMSO) δ 179.0, 167.8, 167.6, 158.5, 147.4, 143.9, 130.7, 129.9, 128.9, 108.3, 102.6, 97.8, 90.5, 34.8, 32.9, 21.8, 13.8. MS (ESI) *m/z* 311 $(M+H)^+$, 333 $(M+Na)^+$, 643 $(2M+Na)^+$. Anal. Calcd for $C_{19}H_{18}O_4 \cdot \frac{1}{3}H_2O$: C, 72.15, H, 5.91. Found: C, 72.00, H, 5.83.



(*Z*)-2-(4-cyclohexylbenzylidene)-4,6-dihydroxybenzofuran-3(2*H*)-one (40).
The crude product was prepared according to general procedure D starting from (*Z*)-2-(4-cyclohexylbenzylidene)-4,6-dimethoxybenzofuran-3(2*H*)-one (**45**), and was purified by column chromatography on silica gel (eluent: ethyl acetate 1 / cyclohexane 1) to yield a pure yellow solid (64%). m.p. > 215 °C (decomposition). ^{1}H NMR (400 MHz, d_6-DMSO) δ 10.98 (br s, 2H, OH), 7.79 (d, 2H, J = 8.3 Hz, $H_{2',6'}$), 7.31 (d, 2H, J = 8.3 Hz, $H_{3',5'}$), 6.56 (s, 1H, -CH=), 6.20 (d, 1H, J = 1.5 Hz, H_7), 6.07 (d, 1H, J = 1.5 Hz, H_5), 2.54 (m, 1H, *c*-Hex), 1.79 (m, 4H, *c*-Hex), 1.70 (m, 1H, *c*-Hex), 1.39 (m, 4H, *c*-Hex), 1.31 (m, 1H, *c*-Hex). ^{13}C NMR (100 MHz, d_6-DMSO) δ 179.0, 167.8, 167.5, 158.5, 149.0, 147.4, 130.7, 130.0, 127.3, 108.2, 102.5, 97.7, 90.5, 43.7, 33.7, 26.3, 25.5. MS (ESI) *m/z* 337 $(M+H)^+$, 359 $(M+Na)^+$, 695 $(2M+Na)^+$. Anal. Calcd for $C_{21}H_{20}O_4 \cdot \frac{1}{2}H_2O$: C, 73.03, H, 6.13. Found: C, 72.95, H, 6.01.

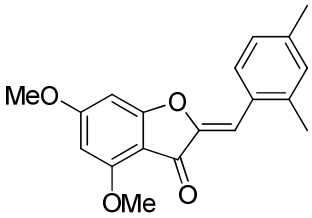


(*Z*)-2-(4-morpholinobenzylidene)-4,6-dihydroxybenzofuran-3(2*H*)-one (41). The crude product was prepared according to general procedure B starting from 4,6-dihydroxybenzofuran-3(2*H*)-one (**3**) and 4-morpholinobenzaldehyde, and was purified by column chromatography on silica gel (eluent: cyclohexane 2 / ethyl acetate 1 / acetic acid 0.005) to yield a pure red solid (32%). m.p. 273-273 °C. ^{1}H NMR (400 MHz, d_6-DMSO) δ 10.83 (s, 1H, OH), 10.79 (s, 1H, OH), 7.77 (d, 2H, J = 8.6 Hz, $H_{2',6'}$), 7.02 (d, 2H, J = 8.6 Hz, $H_{3',5'}$), 6.55 (s, 1H, -CH=), 6.20 (d, 1H, J = 0.8 Hz, H_7), 6.06 (d, 1H, J = 0.8 Hz, H_5), 3.74 (t, 4H, J = 4.8 Hz, CH_2O), 3.23 (t, 4H, J = 4.8 Hz, CH_2N). ^{13}C NMR (100 MHz, d_6-DMSO) δ 180.9, 169.4, 168.9, 160.1, 153.3, 147.9, 134.2, 124.4, 116.4, 111.3, 104.9, 99.6, 92.4, 67.9, 49.2. Anal. Calcd for $C_{19}H_{17}NO_5 \cdot \frac{1}{3}H_2O$: C, 66.08, H, 5.12, N, 4.05. Found: C, 66.44, H, 5.54, N, 3.37.



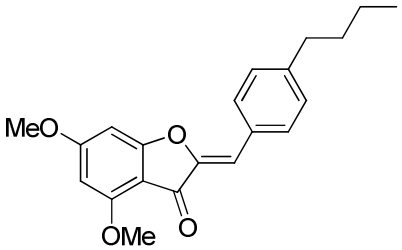
(*Z*)-2-(4-fluorobenzylidene)-4,6-dihydroxybenzofuran-3(2*H*)-one (42).

The crude product was prepared according to general procedure D starting from (*Z*)-2-(4-fluorobenzylidene)-4,6-dimethoxybenzofuran-3(2*H*)-one (**55**), and was purified by column chromatography on silica gel (eluent: dichloromethane 9 / methanol 1) to yield a pure yellow solid (50%). m.p. > 270 °C (decomposition). ^{1}H NMR (400 MHz, d_6-DMSO) δ 11.00 (br s, 1H, OH), 10.97 (br s, 1H, OH), 7.96 (m, 2H, $H_{2',6'}$), 7.31 (m, 2H, $H_{3',5'}$), 6.64 (s, 1H, -CH=), 6.22 (d, 1H, J = 1.6 Hz, H_7), 6.08 (d, 1H, J = 1.6 Hz, H_5). ^{13}C NMR (100 MHz, d_6-DMSO) δ 179.0, 167.9, 167.5, 162.3 (d, J = 248.4 Hz), 158.5, 147.5, 132.9 (d, J = 8.2 Hz), 129.1, 116.0 (d, J = 21.7 Hz), 107.1, 102.5, 97.8, 90.7. MS (ESI) *m/z* 273 $(M+H)^+$, 295 $(M+Na)^+$. Anal. Calcd for $C_{15}H_9FO_4 \cdot \frac{1}{3}H_2O$: C, 64.74, H, 3.48. Found: C, 64.58, H, 3.67.



(*Z*)-2-(2,4-dimethylbenzylidene)-4,6-dimethoxybenzofuran-3(2*H*)-one (43).

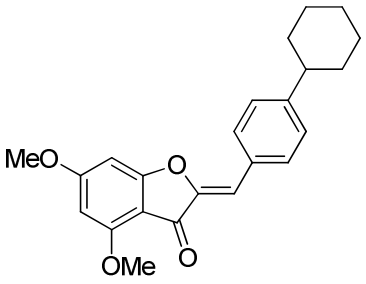
The crude product was prepared according to general procedure A starting from 4,6-dimethoxy-benzofuran-3(2*H*)-one (**6**) and 2,4-dimethoxybenzaldehyde, and was recrystallized from methanol to yield pure pale yellow crystals (86%). m.p. 216 °C. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.07 (d, 1H, J = 8.0 Hz, $H_{6'}$), 7.10 (d, 1H, J = 8.0 Hz, $H_{5'}$), 7.06 (s, 1H, $H_{3'}$), 6.97 (s, 1H, -CH=), 6.37 (d, 1H, J = 1.7 Hz, H_7), 6.12 (d, 1H, J = 1.7 Hz, H_5), 3.95 (s, 3H, OMe), 3.90 (s, 3H, OMe), 2.46 (s, 3H, Me), 2.35 (s, 3H, Me). ^{13}C NMR (100 MHz, $CDCl_3$) δ 180.9, 169.2, 169.0, 159.6, 147.8, 139.8, 139.0, 131.6, 131.0, 128.4, 127.2, 108.1, 105.6, 94.2, 89.4, 56.4, 56.3, 21.6, 20.4. MS (ESI) *m/z* 311 $(M+H)^+$, 333 $(M+Na)^+$, 643 $(2M+Na)^+$. Anal. Calcd for $C_{19}H_{18}O_4$: C, 73.54, H, 5.85. Found: C, 73.04, H, 5.92.



(*Z*)-2-(4-butylbenzylidene)-4,6-dimethoxybenzofuran-3(2*H*)-one (44).

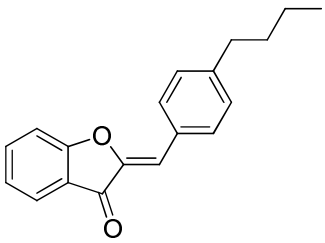
The crude product was prepared according to general procedure A starting from 4,6-dimethoxybenzofuran-3(2*H*)-one (**6**) and 4-butylbenzaldehyde, and was recrystallized from methanol to yield pure white crystals (75%). m.p. 153 °C. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.78 (d, 2H, J = 8.1 Hz, $H_{2',6'}$), 7.24 (d, 2H, J = 8.1 Hz, $H_{3',5'}$), 6.77 (s, 1H, -CH=), 6.38 (d, 1H, J = 1.7 Hz, H_7), 6.12 (d, 1H, J = 1.7 Hz, H_5), 3.95 (s, 3H, OMe), 3.91 (s, 3H, OMe), 2.65 (t, 2H, J = 7.6 Hz, $PhCH_2CH_2CH_2CH_3$), 1.61 (quint., 2H, J = 7.6 Hz, $PhCH_2CH_2CH_2CH_3$), 1.37 (sext., 2H, J = 7.6 Hz, $PhCH_2CH_2CH_2CH_3$), 0.96 (t, 3H, J = 7.6 Hz, $PhCH_2CH_2CH_2CH_3$). ^{13}C NMR

(100 MHz, $CDCl_3$) δ 181.0, 169.2, 169.1, 159.6, 147.7, 145.0, 131.3, 130.2, 129.1, 111.3, 105.5, 94.2, 89.4, 56.4, 56.3, 35.8, 33.6, 22.5, 14.1. MS (ESI) *m/z* 339 $(M+H)^+$, 361 $(M+Na)^+$, 699 $(2M+Na)^+$. Anal. Calcd for $C_{21}H_{22}O_4$: C, 74.54, H, 6.56. Found: C, 74.46, H, 6.33.



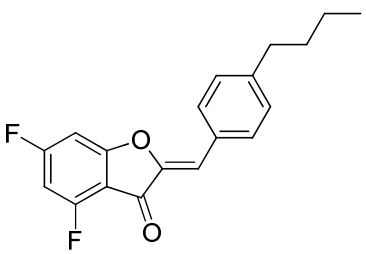
(*Z*)-2-(4-cyclohexylbenzylidene)-4,6-dimethoxybenzofuran-3(2*H*)-one (45).

The crude product was prepared according to general procedure A starting from 4,6-dimethoxybenzofuran-3(2*H*)-one (**6**) and 4-cyclohexylbenzaldehyde, and was recrystallized from methanol to yield pure white crystals (78%). m.p. 174 °C. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.78 (d, 2H, *J* = 8.2 Hz, $H_{2',6'}$), 7.27 (d, 2H, *J* = 8.2 Hz, $H_{3',5'}$), 6.76 (s, 1H, -CH=), 6.37 (d, 1H, *J* = 1.6 Hz, H_7), 6.11 (d, 1H, *J* = 1.6 Hz, H_5), 3.94 (s, 3H, OMe), 3.90 (s, 3H, OMe), 2.53 (m, 1H, *c*-Hex), 1.86 (m, 4H, *c*-Hex), 1.76 (m, 1H, *c*-Hex), 1.42 (m, 4H, *c*-Hex), 1.35 (m, 1H, *c*-Hex). ^{13}C NMR (100 MHz, $CDCl_3$) δ 180.9, 169.1, 169.0, 159.5, 150.0, 147.7, 131.4, 130.3, 127.5, 111.2, 105.5, 94.1, 89.4, 56.4, 56.3, 44.7, 34.4, 27.0, 26.2. MS (ESI) *m/z* 365 $(M+H)^+$, 751 $(2M+Na)^+$. Anal. Calcd for $C_{23}H_{24}O_4$: C, 75.81, H, 6.64. Found: C, 75.40, H, 6.78.

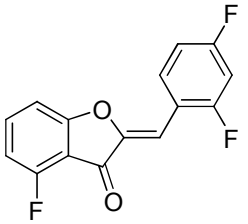


(*Z*)-2-(4-butylbenzylidene)-benzofuran-3(2*H*)-one (46).

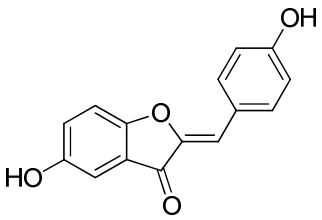
The crude product was prepared according to general procedure C starting from benzofuran-3(2*H*)-one and 4-butylbenzaldehyde, and was purified by column chromatography on silica gel (eluent: dichloromethane 1 / cyclohexane 1) to yield a pure pale yellow solid (44%). m.p. 77-78 °C. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.87 (d, 2H, *J* = 8.3 Hz, $H_{2',6'}$), 7.83 (d, 1H, *J* = 8.3 Hz, H_4), 7.67 (t, 1H, *J* = 8.3 Hz, H_6), 7.35 (d, 1H, *J* = 8.3 Hz, H_7), 7.30 (d, 2H, *J* = 8.3 Hz, $H_{3',5'}$), 7.24 (t, 1H, *J* = 8.3 Hz, H_5), 6.92 (s, 1H, -CH=), 2.68 (t, 2H, *J* = 7.5 Hz, $PhCH_2CH_2CH_2CH_3$), 1.65 (quint., 2H, *J* = 7.5 Hz, $PhCH_2CH_2CH_2CH_3$), 1.40 (sext., 2H, *J* = 7.5 Hz, $PhCH_2CH_2CH_2CH_3$), 0.96 (t, 3H, *J* = 7.5 Hz, $PhCH_2CH_2CH_2CH_3$). ^{13}C NMR (100 MHz, $CDCl_3$) δ 185.0, 166.2, 146.7, 145.7, 136.9, 131.8, 129.9, 129.3, 124.8, 123.6, 122.0, 113.7, 113.1, 35.9, 33.6, 22.6, 14.2. MS (ESI) *m/z* 279 $(M+H)^+$. Anal. Calcd for $C_{15}H_{10}O_4 \cdot ¼H_2O$: C, 80.71, H, 6.55. Found: C, 80.96, H, 6.77.



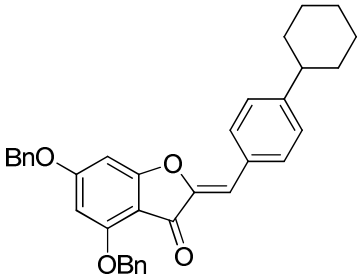
(*Z*)-2-(4-butylbenzylidene)-4,6-difluorobenzofuran-3(2*H*)-one (47).
The crude product was prepared according to general procedure C starting from 4,6-difluorobenzofuran-3(2*H*)-one (**8**) and 4-butylbenzaldehyde, and was purified by column chromatography on silica gel (eluent: dichloromethane 1 / cyclohexane 1) to yield a pure white solid (56%). m.p. 93-94 °C. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.80 (d, 2H, J = 8.1 Hz, $H_{2',6'}$), 7.29 (d, 2H, J = 8.1 Hz, $H_{3',5'}$), 6.91 (s, 1H, -CH=), 6.88 (m, 1H, H_7), 6.63 (m, 1H, H_5), 2.68 (t, 2H, J = 7.5 Hz, $PhCH_2CH_2CH_2CH_3$), 1.65 (quint., 2H, J = 7.5 Hz, $PhCH_2CH_2CH_2CH_3$), 1.39 (sext., 2H, J = 7.5 Hz, $PhCH_2CH_2CH_2CH_3$), 0.96 (t, 3H, J = 7.5 Hz, $PhCH_2CH_2CH_2CH_3$). ^{13}C NMR (100 MHz, $CDCl_3$) δ 179.5, 170.1 (J = 13.0 Hz), 167.5 (J = 13.0 Hz), 160.8 (J = 16.2 Hz), 158.2 (J = 16.2 Hz), 146.4, 146.3, 131.9, 129.4, 129.2, 114.5, 100.0 (J_1 = 27.0 Hz, J_2 = 23.4 Hz), 97.5 (J_1 = 27.0 Hz, J_2 = 4.5 Hz). MS (ESI) *m/z* 315 $(M+H)^+$. Anal. Calcd for $C_{19}H_{16}F_2O_2$: C, 72.61, H, 5.14. Found: C, 72.86, H, 5.47.



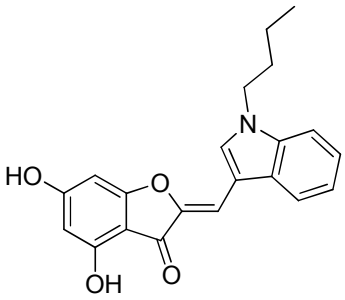
(*Z*)-2-(2,4-difluorobenzylidene)-4-fluorobenzofuran-3(2*H*)-one (48).
The crude product was prepared according to general procedure C starting from 4-fluorobenzofuran-3(2*H*)-one (**9**) and 2,4-difluorobenzaldehyde, and was purified by column chromatography on silica gel (eluent: dichloromethane 1 / cyclohexane 1) to yield a pure white solid (83%). m.p. 164-165 °C. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.29 (dt, 1H, J_1 = 8.6 Hz, J_2 = 6.5 Hz, $H_{6'}$), 7.65 (dt, 1H, J_1 = 8.3 Hz, J_2 = 5.5 Hz, H_6), 7.13 (d, 1H, J = 8.3 Hz, H_7), 7.11 (s, 1H, -CH=), 7.01 (m, 1H, $H_{5'}$), 6.90 (dt, 1H, J_1 = 8.7 Hz, J_2 = 2.6 Hz, $H_{3'}$), 6.88 (t, 1H, J = 8.3 Hz, H_5). ^{13}C NMR (100 MHz, $CDCl_3$) δ 180.6, 166.3 (J = 6.0 Hz), 164.4 (J_1 = 171.8 Hz, J_2 = 12.3 Hz), 161.9 (J_1 = 174.6 Hz, J_2 = 12.2 Hz), 160.1, 157.5, 146.9, 138.7 (J = 9.4 Hz), 133.2 (J = 9.5 Hz), 117.0 (J_1 = 12.0 Hz, J_2 = 4.1 Hz), 112.4 (J_1 = 21.2 Hz, J_2 = 2.9 Hz), 110.7 (J = 19.0 Hz), 109.0 (J = 4.1 Hz), 104.5 (J = 25.6 Hz), 103.9 (J = 5.7 Hz). MS (ESI) *m/z* 277 $(M+H)^+$. Anal. Calcd for $C_{15}H_7F_3O_2$: C, 65.23, H, 2.56. Found: C, 65.36, H, 2.57.



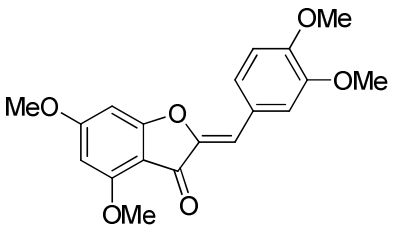
(*Z*)-2-(4-hydroxybenzylidene)-5-hydroxybenzofuran-3(2*H*)-one (49).
The crude product was prepared according to general procedure A starting from 5-hydroxybenzofuran-3(2*H*)-one (**4**) and 4-hydroxybenzaldehyde, and was recrystallized from acetonitrile to yield pure yellow crystals (17%). m.p. > 300 °C (decomposition). ^{1}H NMR (400 MHz, d_6-DMSO) δ 10.21 (br s, 1H, OH), 9.76 (br s, 1H, OH), 7.85 (d, 2H, J = 7.8 Hz, $H_{2',6'}$), 7.38 (d, 1H, J = 8.5 Hz, H_6), 7.20 (d, 1H, J = 8.5 Hz, H_7), 7.01 (s, 1H, H_4), 6.89 (d, 2H, J = 7.8 Hz, $H_{3',5'}$), 6.83 (s, 1H, -CH=). ^{13}C NMR (100 MHz, d_6-DMSO) δ 183.4, 159.5, 158.8, 153.6, 145.5, 133.5, 125.2, 122.9, 121.5, 116.0, 113.7, 112.8, 107.4. MS (ESI) *m/z* 255 $(M+H)^+$, 277 $(M+Na)^+$. Anal. Calcd for $C_{15}H_{10}O_4 \cdot ⅔H_2O$: C, 67.67, H, 4.29. Found: C, 67.56, H, 4.10.



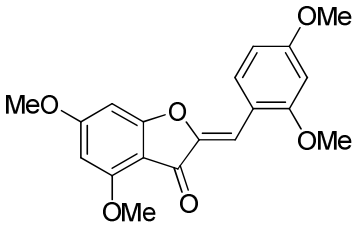
(*Z*)-2-(4-cyclohexylbenzylidene)-4,6-dibenzyloxybenzofuran-3(2*H*)-one (50).
The crude product was prepared according to general procedure C starting from 4,6-dibenzyloxybenzofuran-3(2*H*)-one (**7**) and 4-cyclohexylbenzaldehyde, and was purified by column chromatography on silica gel (eluent: dichloromethane 2 / cyclohexane 1) to yield a pure pale yellow solid (43%). m.p. 155-157 °C. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.81 (d, 2H, *J* = 8.2 Hz, $H_{2',6'}$), 7.32-7.50 (m, 10H, OCH_2Ph), 7.29 (d, 2H, *J* = 8.2 Hz, $H_{3',5'}$), 6.78 (s, 1H, -CH=), 6.46 (d, 1H, *J* = 1.6 Hz, H_7), 6.24 (d, *J* = 1.6 Hz, H_5), 5.28 (s, 2H, OCH_2Ph), 5.11 (s, 2H, OCH_2Ph), 2.53 (m, 1H, *c*-Hex), 1.89 (m, 4H, *c*-Hex), 1.78 (m, 1H, *c*-Hex), 1.43 (m, 4H, *c*-Hex), 1.30 (m, 1H, *c*-Hex). ^{13}C NMR (100 MHz, $CDCl_3$) δ 180.8, 169.0, 167.8, 158.5, 150.0, 147.7, 136.2, 135.7, 131.4, 130.3, 129.0, 128.9, 128.7, 128.1, 127.8, 127.5, 127.0, 111.2, 106.1, 96.6, 90.7, 71.0, 70.9, 44.8, 34.4, 27.1, 26.3. MS (ESI) *m/z* 517 $(M+H)^+$. Anal. Calcd for $C_{35}H_{32}O_4 \cdot \frac{1}{3}H_2O$: C, 80.46, H, 6.26. Found: C, 80.30, H, 6.67.



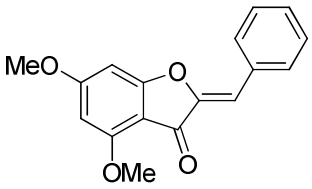
(*Z*)-2-((1-butyl-1*H*-indol-3-yl)methylene)-4,6-dihydroxybenzofuran-3(2*H*)-one (51). The crude product was prepared according to general procedure B starting from 4,6-dihydroxybenzofuran-3(2*H*)-one (**3**) and 1-butyl-1*H*-indole-3-carbaldehyde, and was purified by column chromatography on silica gel (eluent: cyclohexane 2 / ethyl acetate 1 / acetic acid 0.005) to yield a pure red solid (65%). m.p. 248-249 °C. ^{1}H NMR (400 MHz, d_6-DMSO) δ 10.75 (s, 2H, OH), 8.13 (s, 1H, $H_{2'}$), 7.97 (d, 1H, *J* = 7.7 Hz, $H_{4'}$), 7.56 (d, 1H, *J* = 7.7 Hz, $H_{7'}$), 7.25 (t, 1H, *J* = 7.7 Hz, $H_{6'}$), 7.18 (t, 1H, *J* = 7.7 Hz, $H_{5'}$), 6.97 (s, 1H, -CH=), 6.27 (d, 1H, *J* = 1.2 Hz, H_7), 6.08 (d, 1H, *J* = 1.2 Hz, H_5), 4.28 (t, 2H, *J* = 7.2 Hz, $CH_2CH_2CH_2CH_3$), 1.76 (quint., 2H, *J* = 7.2 Hz, $CH_2CH_2CH_2CH_3$), 1.27 (sext., 2H, *J* = 7.2 Hz, $CH_2CH_2CH_2CH_3$), 0.88 (t, 3H, *J* = 7.2 Hz, $CH_2CH_2CH_2CH_3$). ^{13}C NMR (100 MHz, d_6-DMSO) δ 180.3, 168.9, 168.5, 159.9, 147.3, 138.0, 134.9, 129.2, 124.5, 122.7, 121.1, 112.6, 109.4, 105.7, 104.2, 99.5, 92.5, 47.9, 33.9, 21.5, 15.6. Anal. Calcd for $C_{21}H_{19}NO_4$: C, 72.19, H, 5.48, N, 4.01. Found: C, 71.81, H, 5.79, N, 3.79.



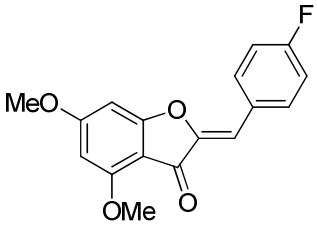
(*Z*)-2-(3,4-dimethoxybenzylidene)-4,6-dimethoxybenzofuran-3(2*H*)-one (52).
The crude product was prepared according to general procedure A starting from 4,6-dimethoxybenzofuran-3(2*H*)-one (**6**) and 3,4-dimethoxybenzaldehyde, and was recrystallized from methanol to yield pure pale yellow crystals (83%). m.p. 173-174 °C. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.44 (m, 2H, $H_{2',6'}$), 6.91 (d, 1H, *J* = 8.1 Hz, $H_{5'}$), 6.73 (s, 1H, -CH=), 6.34 (s, 1H, H_7), 6.12 (s, 1H, H_5), 3.96 (s, 3H, OMe), 3.95 (s, 3H, OMe), 3.93 (s, 3H, OMe), 3.91 (s, 3H, OMe). ^{13}C NMR (100 MHz, $CDCl_3$) δ 180.5, 168.7, 159.3, 150.3, 148.9, 146.8, 125.5, 125.3, 113.5, 111.3, 111.1, 105.4, 93.9, 89.1, 56.2, 56.1, 55.9, 56.0. MS (ESI) *m/z* 343 $(M+H)^+$, 707 $(2M+Na)^+$.



(*Z*)-2-(2,4-dimethoxybenzylidene)-4,6-dimethoxybenzofuran-3(2*H*)-one (53).
The crude product was prepared according to general procedure A starting from 4,6-dimethoxybenzofuran-3(2*H*)-one (**6**) and 2,4-dimethoxybenzaldehyde, and was recrystallized from methanol to yield pure pale yellow crystals (91%). m.p. 213-214 °C. ^{1}H NMR (400 MHz, $CDCl_3$) δ 8.19 (d, 1H, *J* = 8.7 Hz, $H_{6'}$), 7.27 (s, 1H, -CH=), 6.57 (dd, 1H, *J* = 8.7 Hz, *J* = 2.3 Hz, $H_{5'}$), 6.45 (d, 1H, *J* = 2.3 Hz, $H_{3'}$), 6.36 (d, 1H, *J* = 1.7 Hz, H_7), 6.11 (d, 1H, *J* = 1.7 Hz, H_5), 3.94 (s, 3H, OMe), 3.90 (s, 3H, OMe), 3.87 (s, 3H, OMe), 3.86 (s, 3H, OMe). ^{13}C NMR (100 MHz, $CDCl_3$) δ 180.6, 168.5, 168.4, 162.2, 160.1, 159.2, 146.8, 132.8, 114.6, 105.6, 105.5, 105.3, 97.9, 93.7, 89.0, 56.1, 56.0, 55.5, 55.4. MS (ESI) *m/z* 343 $(M+H)^+$, 707 $(2M+Na)^+$.



(*Z*)-2-benzylidene-4,6-dimethoxybenzofuran-3(2*H*)-one (54).
The crude product was prepared according to general procedure A starting from 4,6-dimethoxybenzofuran-3(2*H*)-one (**6**) and benzaldehyde, and was recrystallized from methanol to yield pure pale yellow crystals (61%). m.p. 156-157 °C. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.91 (d, 1H, *J* = 7.3 Hz, $H_{2',6'}$), 7.39-7.48 (m, 3H, $H_{3',4',5'}$), 6.68 (s, 1H, -CH=), 6.66 (d, 1H, *J* = 1.5 Hz, H_7), 6.31 (d, 1H, *J* = 1.5 Hz, H_5), 3.91 (s, 3H, OMe), 3.89 (s, 3H, OMe). ^{13}C NMR (100 MHz, $CDCl_3$) δ 179.0, 168.9, 168.3, 158.9, 147.3, 132.1, 130.8, 129.3, 128.8, 109.3, 104.0, 94.3, 89.8, 56.4, 56.1. MS (ESI) *m/z* 283 $(M+H)^+$, 587 $(2M+H)^+$.



(*Z*)-2-(4-fluorobenzylidene)-4,6-dimethoxybenzofuran-3(2*H*)-one (55).

The crude product was prepared according to general procedure A starting from 4,6-dimethoxybenzofuran-3(2*H*)-one (**6**) and 4-fluorobenzaldehyde, and was recrystallized from methanol to yield pure pale yellow crystals (64%). m.p. 186-187 °C. ^{1}H NMR (400 MHz, $CDCl_3$) δ 7.87 (m, 2H, $H_{2',6'}$), 7.12 (m, 2H, $H_{3',5'}$), 6.74 (s, 1H, -CH=), 6.40 (d, 1H, J = 1.8 Hz, H_7), 6.15 (d, 1H, J = 1.8 Hz, H_5), 3.97 (s, 3H, OMe), 3.93 (s, 3H, OMe). ^{13}C NMR (100 MHz, $CDCl_3$) δ 180.8, 168.2, 163.2 (d, J = 251.4 Hz), 159.6, 147.7, 133.2 (d, J = 8.2 Hz), 129.1, 116.2 (d, J = 21.7 Hz), 109.8, 105.4, 94.3, 89.4, 56.4, 56.4. MS (ESI) *m/z* 301 $(M+H)^+$, 623 $(2M+Na)^+$.