

1-(5-Bromopentyl)benzo[*cd*]indol-2(1*H*)-one (76): yield 4.4 g (53%); chromatography hexane/ethyl acetate, from 13:1 to 1:1; bp 289-292 °C/0.06 mm Hg; ^1H NMR (CDCl_3) δ 1.49-1.59 (m, 2H), 1.76-1.96 (m, 4H), 3.38 (t, $J = 7.2$, 2H), 3.92 (t, $J = 6.9$, 2H), 6.90 (d, $J = 6.9$, 1H), 7.45 (dd, $J = 8.4$, 6.6, 1H), 7.53 (d, $J = 8.4$, 1H), 7.70 (dd, $J = 8.1$, 7.2, 1H), 8.00 (d, $J = 8.1$, 1H), 8.05 (d, $J = 7.2$, 1H); ^{13}C NMR (CDCl_3) δ 25.6, 28.1, 32.5, 33.5, 40.1, 105.0, 120.4, 124.4, 125.3, 126.8, 128.6, 128.8, 129.3, 130.9, 139.6, 168.2.

1-(6-Bromohexyl)benzo[*cd*]indol-2(1*H*)-one (77): yield 4.3 g (50%); chromatography hexane/ethyl acetate, from 13:1 to 1:1; bp 177-180 °C/0.06 mm Hg; ^1H NMR (CDCl_3) δ 1.36-1.50 (m, 4H), 1.73-1.90 (m, 4H), 3.37 (t, $J = 6.6$, 2H), 3.91 (t, $J = 6.9$, 2H), 6.89 (d, $J = 6.9$, 1H), 7.45 (dd, $J = 8.1$, 7.2, 1H), 7.52 (d, $J = 7.8$, 1H), 7.70 (dd, $J = 8.1$, 7.2, 1H), 8.00 (d, $J = 7.8$, 1H), 8.04 (d, $J = 6.9$, 1H); ^{13}C NMR (CDCl_3) δ 26.0, 27.7, 28.5, 32.5, 33.7, 40.0, 104.8, 120.1, 124.1, 125.0, 126.6, 128.4, 128.5, 129.0, 130.6, 139.4, 167.9.

2-(5-Bromopentyl)-2*H*-naphtho[1,8-*cd*]isothiazole 1,1-dioxide (79): yield 5.3 g (58%); chromatography hexane/ethyl acetate, 9:1; mp 62-64 °C (chloroform/hexane); ^1H NMR (CDCl_3) δ 1.60-1.73 (m, 2H), 1.97 (qt, $J = 6.6$, 4H), 3.44 (t, $J = 6.6$, 2H), 3.85 (t, $J = 7.1$, 2H), 6.73 (d, $J = 6.3$, 1H), 7.45 (d, $J = 7.8$, 1H), 7.55 (dd, $J = 8.5$, 7.1, 1H), 7.75 (dd, $J = 8.0$, 7.3, 1H), 7.96 (d, $J = 6.8$, 1H), 8.07 (d, $J = 8.3$, 1H); ^{13}C NMR (CDCl_3) δ 25.5, 27.3, 32.1, 33.2, 41.8, 102.8, 118.0, 119.3, 119.6, 128.0, 129.2, 130.3, 130.6, 131.0, 136.5.

2-(6-Bromohexyl)-2*H*-naphtho[1,8-*cd*]isothiazole 1,1-dioxide (80): yield 4.2 g (44%); chromatography hexane/ethyl acetate, from 9:1 to 8:2; mp 67-69 °C (chloroform/hexane); ^1H NMR (CDCl_3) δ 1.50-1.62 (m, 4H), 1.82-2.02 (m, 4H), 3.42 (t, $J = 6.8$, 2H), 3.83 (t, $J = 7.3$, 2H), 6.73 (dd, $J = 7.1$, 0.7, 1H), 7.44 (dd, $J = 8.5$, 0.7, 1H), 7.54 (dd, $J = 8.5$, 7.1, 1H), 7.74 (dd, $J = 8.3$, 7.3, 1H), 7.96 (d, $J = 6.6$, 1H), 8.06 (dd, $J = 8.3$, 0.7, 1H); ^{13}C NMR (CDCl_3) δ 26.2, 27.7, 28.1, 32.1, 33.7, 42.1, 102.9, 118.1, 119.3, 119.8, 128.1, 129.4, 130.6, 130.7, 131.2, 136.7.

1-[[4-(2-Methoxyphenyl)piperazin-1-yl]methyl]benzo[*cd*]indol-2(1*H*)-one (40): yield 1.0 g (88%); chromatography hexane/ethyl acetate, 1:1; mp 160-163 °C (chloroform/hexane). ¹H NMR (CDCl₃) δ 2.95 (t, *J* = 4.4, 4H), 3.08 (t, *J* = 4.4, 4H), 3.78 (s, 3H), 4.84 (s, 2H), 6.79-7.03 (m, 4H), 7.07 (d, *J* = 7.4, 1H), 7.46 (dd, *J* = 8.3, 6.6, 1H), 7.56 (d, *J* = 7.8, 1H), 7.72 (dd, *J* = 8.1, 7.0, 1H), 8.03 (d, *J* = 8.1, 1H), 8.08 (d, *J* = 7.1, 1H); ¹³C NMR (CDCl₃) δ 50.6, 51.0, 55.3, 62.0, 106.1, 111.1, 118.2, 120.3, 120.9, 122.9, 124.3, 125.4, 126.9, 128.5, 128.6, 129.1, 130.9, 140.4, 141.2, 152.2, 169.1. Anal. (C₂₃H₂₃N₃O₂·2HCl·3H₂O) C, H, N.

1-[3-(4-Phenylpiperazin-1-yl)propyl]benzo[*cd*]indol-2(1*H*)-one (41): yield 1.4 g (64%); chromatography hexane/ethyl acetate, 2:8; mp 192-195 °C (chloroform/diethyl ether); ¹H NMR (CDCl₃) δ 2.02 (qt, *J* = 7.2, 2H), 2.48 (t, *J* = 7.5, 2H), 2.56 (br s, 4H), 3.14 (br s, 4H), 4.00 (t, *J* = 6.9, 2H), 6.83 (t, *J* = 7.2, 1H), 6.89 (d, *J* = 7.8, 2H), 6.98 (d, *J* = 6.9, 1H), 7.24 (t, *J* = 7.5, 2H), 7.43 (td, *J* = 8.4, 1.0, 1H), 7.50 (d, *J* = 8.1, 1H), 7.69 (td, *J* = 6.9, 1.5, 1H), 8.00 (d, *J* = 8.1, 1H), 8.04 (d, *J* = 6.9, 1H); ¹³C NMR (CDCl₃) δ 25.9, 38.4, 49.1, 53.2, 55.4, 105.1, 116.0, 120.0, 120.2, 124.2, 125.9, 126.8, 128.4, 128.6, 129.1, 129.3, 130.8, 139.9, 151.9, 168.3. Anal. (C₂₄H₂₅N₃O·2HCl·5/2H₂O) C, H, N.

1-(4-Piperidinobutyl)benzo[*cd*]indol-2(1*H*)-one (43): yield 2.5 g (89%); chromatography chloroform/methanol, 9:1; mp 198-200 °C (chloroform/hexane); ¹H NMR (CDCl₃) δ 1.30-1.42 (m, 2H), 1.51-1.66 (m, 6H), 1.79 (qt, *J* = 7.8, 2H), 2.34 (t, *J* = 5.7, 6H), 3.92 (t, *J* = 7.2, 2H), 6.90 (d, *J* = 6.6, 1H), 7.42 (dd, *J* = 8.1, 6.9, 1H), 7.49 (d, *J* = 8.4, 1H), 7.68 (dd, *J* = 8.1, 6.9, 1H), 8.00 (d, *J* = 8.1, 1H), 8.03 (d, *J* = 6.9, 1H); ¹³C NMR (CDCl₃) δ 24.1, 24.3, 25.8, 26.8, 40.1, 54.5, 58.8, 105.0, 120.2, 124.2, 125.2, 126.8, 128.5, 128.6, 129.1, 130.7, 139.5, 168.1. Anal. (C₂₀H₂₄N₂O·HCl·2H₂O) C, H, N.

1-[4-(4-Methylpiperidino)butyl]benzo[*cd*]indol-2(1*H*)-one (44): yield 1.7 g (60%); chromatography ethyl acetate/ethanol, 7:3; mp 204-207 °C (chloroform/hexane); ¹H NMR (CDCl₃)

δ 0.90 (d, $J = 5.5$, 3H), 1.23-1.85 (m, 7H), 1.90-2.16 (m, 4H), 2.49 (t, $J = 6.4$, 2H), 2.93 (d, 2H, $J = 11.3$), 3.95 (t, $J = 6.3$, 2H), 6.94 (d, $J = 7.2$, 1H), 7.46 (dd, $J = 8.4$, 6.9, 1H), 7.53 (d, $J = 8.7$, 1H), 7.71 (dd, $J = 8.1$, 6.9, 1H), 8.01 (d, $J = 7.8$, 1H), 8.04 (d, $J = 5.4$, 1H); ^{13}C NMR (CDCl_3) δ 21.1, 25.2, 27.6, 30.5, 34.2, 39.1, 53.1, 57.0, 105.2, 120.5, 124.3, 125.1, 126.4, 128.6, 128.7, 129.1, 131.0, 138.9, 168.3. Anal. ($\text{C}_{21}\text{H}_{26}\text{N}_2\text{O}\cdot\text{HCl}\cdot 2\text{H}_2\text{O}$) C, H, N.

1-[4-(4-Cyclohexylpiperidino)butyl]benzo[*cd*]indol-2(1*H*)-one (46): yield 2.7 g (78%); chromatography ethyl acetate/ethanol, 9:1; mp 217-219 °C (chloroform/hexane); ^1H NMR (CDCl_3) δ 0.79-1.37 (m, 9H), 1.53-1.88 (m, 13H), 2.34 (t, $J = 7.6$, 2H), 2.92 (d, $J = 11.5$, 2H), 3.93 (t, $J = 6.1$, 2H), 6.91 (d, $J = 6.6$, 1H), 7.44 (dd, $J = 8.5$, 6.6, 1H), 7.52 (d, $J = 7.8$, 1H), 7.75 (dd, $J = 8.1$, 7.1, 1H), 8.00 (d, $J = 8.1$, 1H), 8.04 (d, $J = 6.8$, 1H); ^{13}C NMR (CDCl_3) δ 24.2, 26.6, 26.7, 26.8, 29.2, 30.1, 40.0, 41.5, 42.5, 54.4, 58.4, 105.0, 120.1, 124.1, 125.1, 126.7, 128.4, 128.5, 129.0, 130.6, 139.4, 168.0. Anal. ($\text{C}_{26}\text{H}_{34}\text{N}_2\text{O}\cdot\text{HCl}\cdot 1/2\text{H}_2\text{O}$) C, H, N.

1-[4-(4-Phenylpiperidin-1-yl)butyl]benzo[*cd*]indol-2(1*H*)-one (47): yield 2.3 g (66%); chromatography hexane/ethyl acetate, from 1:1 to ethyl acetate; mp 215-217 °C (chloroform/diethyl ether); ^1H NMR (CDCl_3) δ 1.53-1.85 (m, 8H), 1.99 (t, $J = 11.1$, 2H), 2.40 (t, $J = 6.9$, 2H), 2.43-2.52 (m, 1H), 3.00 (d, $J = 10.5$, 2H), 3.95 (t, $J = 6.9$, 2H), 6.92 (d, $J = 6.6$, 1H), 7.16-7.29 (m, 5H), 7.45 (dd, $J = 8.4$, 6.9, 1H), 7.52 (d, $J = 8.7$, 1H), 7.69 (t, $J = 7.8$, 1H), 8.00 (d, $J = 8.1$, 1H), 8.04 (d, $J = 7.2$, 1H); ^{13}C NMR (CDCl_3) δ 22.2, 26.4, 30.9, 31.8, 39.4, 53.2, 57.5, 105.2, 120.4, 124.3, 125.1, 126.4, 126.5, 126.8, 128.5, 128.7, 129.1, 130.9, 139.5, 144.8, 168.2. Anal. ($\text{C}_{26}\text{H}_{28}\text{N}_2\text{O}\cdot\text{HCl}\cdot 2\text{H}_2\text{O}$) C, H, N.

1-[4-(4-Methylpiperazin-1-yl)butyl]benzo[*cd*]indol-2(1*H*)-one (49): yield 2.2 g (76%); chromatography chloroform/methanol, 6:4; mp 268-270 °C (d) (chloroform/hexane); ^1H NMR (CDCl_3) δ 1.56 (qt, $J = 7.2$, 2H), 1.75 (qt, $J = 6.9$, 2H), 2.23 (s, 3H), 2.32-2.49 (m, 10H), 3.90 (t, $J = 7.2$, 2H), 6.87 (d, $J = 6.9$, 1H), 7.39 (dd, $J = 8.4$, 6.9, 1H), 7.48 (d, $J = 8.1$, 1H), 7.66 (dd, $J = 8.1$,

6.9, 1H), 7.96 (d, $J = 8.4$, 1H), 8.01 (d, $J = 6.9$, 1H); ^{13}C NMR (CDCl_3) δ 24.3, 26.8, 40.1, 46.0, 53.1, 55.1, 58.0, 105.0, 120.2, 124.3, 125.2, 126.8, 128.5, 128.7, 129.2, 130.7, 139.5, 168.1. Anal. ($\text{C}_{20}\text{H}_{25}\text{N}_3\text{O} \cdot 2\text{HCl} \cdot 1/2\text{H}_2\text{O}$) C, H, N.

1-[4-(4-Phenylpiperazin-1-yl)butyl]benzo[*cd*]indol-2(1*H*)-one (51): yield 3.0 g (86%); chromatography ethyl acetate; mp 255-257 °C (d) (dichloromethane/hexane); ^1H NMR (CDCl_3) δ 1.63 (qt, $J = 6.3$, 2H), 1.84 (qt, $J = 7.2$, 2H), 2.42 (t, $J = 7.2$, 2H), 2.55 (t, $J = 4.8$, 4H), 3.05 (t, $J = 4.8$, 4H), 3.96 (t, $J = 7.2$, 2H), 6.83 (t, $J = 7.2$, 1H), 6.88-6.93 (m, 3H), 7.20-7.26 (m, 2H), 7.44 (td, $J = 7.2$, 1.8, 1H), 7.52 (d, $J = 8.4$, 1H), 7.69 (td, $J = 7.8$, 2.1, 1H), 8.00 (d, $J = 8.1$, 1H), 8.04 (d, $J = 6.9$, 1H); ^{13}C NMR (CDCl_3) δ 24.3, 26.8, 40.2, 49.2, 53.3, 58.1, 105.1, 116.1, 119.7, 120.3, 124.3, 125.3, 126.8, 128.6, 128.8, 129.1, 129.3, 130.9, 139.6, 151.4, 168.2. Anal. ($\text{C}_{25}\text{H}_{27}\text{N}_3\text{O} \cdot 2\text{HCl} \cdot \text{H}_2\text{O}$) C, H, N.

1-{4-[4-(2-Methoxyphenyl)piperazin-1-yl]butyl}benzo[*cd*]indol-2(1*H*)-one (52): yield 3.0 g (80%); chromatography ethyl acetate; mp 219-221 °C (d) (chloroform/hexane); ^1H NMR (CDCl_3) δ 1.66 (qt, $J = 7.2$, 2H), 1.84 (qt, $J = 7.2$, 2H), 2.45 (t, $J = 7.5$, 2H), 2.62 (br s, 4H), 3.06 (br s, 4H), 3.84 (s, 3H), 3.96 (t, $J = 6.9$, 2H), 6.84 (d, $J = 7.5$, 1H), 6.90-7.00 (m, 4H), 7.44 (dd, $J = 8.4$, 6.9, 1H), 7.51 (d, $J = 8.4$, 1H), 7.70 (t, $J = 7.2$, 1H), 8.00 (d, $J = 8.1$, 1H), 8.05 (d, $J = 6.9$, 1H); ^{13}C NMR (CDCl_3) δ 24.1, 26.6, 39.0, 50.4, 53.2, 55.1, 57.9, 104.8, 110.9, 118.0, 120.0, 120.8, 122.6, 124.0, 125.3, 126.8, 128.3, 128.4, 128.9, 130.5, 139.6, 141.9, 152.1, 167.9. Anal. ($\text{C}_{26}\text{H}_{29}\text{N}_3\text{O}_2 \cdot 2\text{HCl}$) C, H, N.

1-[5-(4-Isopropylpiperidin-1-yl)pentyl]benzo[*cd*]indol-2(1*H*)-one (53): yield 2.7 g (83%); chromatography ethyl acetate/ethanol, 8:2; mp 212-215 °C (acetone/diethyl ether); ^1H NMR (CDCl_3) δ 0.86 (d, $J = 6.6$, 6H), 0.90-1.03 (m, 1H), 1.10-1.60 (m, 9H), 1.64-1.82 (m, 4H), 2.20 (t, $J = 8.1$, 2H), 2.86 (d, $J = 11.3$, 2H), 3.85 (t, $J = 6.8$, 2H), 6.92 (d, $J = 6.8$, 1H), 7.44 (dd, $J = 8.3$, 6.9, 1H), 7.52 (d, $J = 8.6$, 1H), 7.68 (dd, $J = 8.1$, 6.9, 1H), 8.00 (d, $J = 8.2$, 1H), 8.05 (d, $J = 7.0$, 1H); ^{13}C

NMR (CDCl₃) δ 19.8, 25.1, 26.7, 28.7, 29.2, 32.4, 40.2, 42.4, 54.4, 58.9, 104.9, 120.1, 124.2, 125.1, 126.8, 128.5, 128.6, 129.1, 130.7, 139.6, 168.1. Anal. (C₂₄H₃₂N₂O·HCl) C, H, N.

1-[5-(4-Phenyl-3,6-dihydropyridin-1(2H)-yl)pentyl]benzo[*cd*]indol-2(1H)-one (54): yield 1.9 g (53%); chromatography hexane/ethyl acetate, 1:1; bp 230-232 °C/0.06 mm Hg; ¹H NMR (CDCl₃) δ 1.38-1.53 (m, 2H), 1.57-1.72 (m, 2H), 1.84 (qt, *J* = 7.3, 2H), 2.46 (t, *J* = 7.3, 2H), 2.55-2.58 (m, 2H), 2.67-2.73 (m, 2H), 3.16 (d, *J* = 3.8, 2H), 3.94 (t, *J* = 7.3, 2H), 6.00-6.08 (m, 1H), 6.92 (dd, *J* = 6.8, 1.0, 1H), 7.18-7.50 (m, 5H), 7.44 (dd, *J* = 8.5, 6.6, 1H), 7.56 (d, *J* = 8.3, 1H), 7.70 (dd, *J* = 8.0, 6.8, 1H), 8.00 (d, *J* = 8.0, 1H), 8.05 (d, *J* = 6.8, 1H); ¹³C NMR (CDCl₃) δ 24.8, 26.6, 27.8, 28.5, 40.0, 50.1, 52.9, 57.9, 104.8, 120.0, 121.4, 124.0, 124.7, 125.0, 126.6, 126.8, 128.1, 128.3, 128.5, 128.9, 130.5, 134.8, 139.4, 140.6, 168.1. Anal. (C₂₇H₂₈N₂O·HCl·3/2H₂O) C, H, N.

1-[5-(4-Cyclohexylpiperazin-1-yl)pentyl]benzo[*cd*]indol-2(1H)-one (55): yield 3.3 g (91%); chromatography ethyl acetate; mp 259-261 °C (chloroform/diethyl ether); ¹H NMR (CDCl₃) δ 1.14-1.28 (m, 5H), 1.38 (qt, *J* = 6.9, 2H), 1.48-1.63 (m, 3H), 1.73-1.83 (m, 4H), 1.84-1.93 (m, 2H), 2.28-2.34 (m, 3H), 2.51 (br s, 4H), 2.63 (br s, 4H), 3.89 (t, *J* = 7.2, 2H), 6.88 (d, *J* = 6.9, 1H), 7.43 (dd, *J* = 8.4, 7.2, 1H), 7.50 (d, *J* = 8.4, 1H), 7.68 (dd, *J* = 8.4, 6.9, 1H), 7.98 (d, *J* = 7.8, 1H), 8.02 (d, *J* = 6.9, 1H); ¹³C NMR (CDCl₃) δ 24.8, 25.7, 26.0, 26.3, 28.5, 28.6, 40.2, 48.6, 52.6, 58.1, 64.0, 105.0, 120.2, 124.3, 125.2, 126.8, 128.6, 128.7, 129.2, 130.8, 139.5, 168.1. Anal. (C₂₆H₃₅N₃O·2HCl·3/2H₂O) C, H, N.

1-{5-[4-(2-Methoxyphenyl)piperazin-1-yl]pentyl}benzo[*cd*]indol-2(1H)-one (57): yield 2.9 g (75%); chromatography ethyl acetate; mp 209-211 °C (chloroform/hexane); ¹H NMR (CDCl₃) δ 1.43 (qt, *J* = 7.8, 2H), 1.58 (qt, *J* = 7.5, 2H), 1.82 (qt, *J* = 7.6, 2H), 2.37 (t, *J* = 7.3, 2H), 2.60 (br s, 4H), 3.05 (br s, 4H), 3.84 (s, 3H), 3.92 (t, *J* = 7.4, 2H), 6.83 (d, *J* = 7.7, 1H), 6.89-6.99 (m, 4H), 7.44 (dd, *J* = 8.3, 6.9, 1H), 7.52 (d, *J* = 7.7, 1H), 7.69 (t, *J* = 7.7, 1H), 8.00 (d, *J* = 7.9, 1H), 8.04 (d, *J* = 6.7, 1H); ¹³C NMR (CDCl₃) δ 25.1, 26.7, 28.8, 40.3, 50.7, 53.6, 55.4, 58.6, 105.0, 111.3, 118.3, 120.2,

121.1, 122.9, 124.3, 125.3, 126.9, 128.6, 128.7, 129.2, 130.8, 139.7, 141.5, 152.4, 168.1. Anal. (C₂₇H₃₁N₃O₂·2HCl·1/2H₂O) C, H, N.

1-{6-[4-(2-Methoxyphenyl)piperazin-1-yl]hexyl}benzo[*cd*]indol-2(1*H*)-one (59): yield 3.8 g (94%); chromatography ethyl acetate; mp 188-190 °C (chloroform/hexane); ¹H NMR (CDCl₃) δ 1.37-1.55 (m, 6H), 1.82 (qt, *J* = 7.3, 2H), 2.38 (t, *J* = 7.3, 2H), 2.62 (br s, 4H), 3.08 (br s, 4H), 3.86 (s, 3H), 3.93 (t, *J* = 7.1, 2H), 6.82-7.04 (m, 5H), 7.46 (dd, *J* = 8.3, 6.6, 1H), 7.54 (dd, *J* = 8.5, 1.0, 1H), 7.71 (dd, *J* = 8.3, 6.8, 1H), 8.02 (d, *J* = 8.3, 1H), 8.06 (d, *J* = 7.1, 1H); ¹³C NMR (CDCl₃) δ 26.9, 27.1, 27.4, 28.9, 40.4, 50.8, 53.6, 55.5, 58.9, 105.1, 111.3, 118.3, 120.3, 121.1, 123.0, 124.3, 125.6, 127.1, 128.6, 128.8, 129.2, 130.8, 139.7, 141.5, 152.4, 168.3. Anal. (C₂₈H₃₃N₃O₂·HCl·H₂O) C, H, N.

2-(4-Piperidinobutyl)-2*H*-naphtho[1,8-*cd*]isothiazole 1,1-dioxide (60): yield 2.8 g (89%); chromatography chloroform/methanol, 9:1; mp 217-219 °C (chloroform/hexane); ¹H NMR (CDCl₃) δ 1.39-1.50 (m, 2H), 1.53-1.77 (m, 6H), 1.95 (qt, *J* = 7.1, 2H), 2.40 (t, *J* = 7.3, 6H), 3.85 (t, *J* = 7.3, 2H), 6.76 (d, *J* = 7.1, 1H), 7.44 (d, *J* = 7.6, 1H), 7.54 (dd, *J* = 8.5, 7.1, 1H), 7.74 (dd, *J* = 8.1, 7.3, 1H), 7.95 (d, *J* = 7.1, 1H), 8.06 (d, *J* = 8.0, 1H); ¹³C NMR (CDCl₃) δ 24.2, 24.4, 25.9, 26.3, 42.0, 54.6, 58.6, 103.0, 118.1, 119.3, 119.7, 128.0, 129.4, 130.5, 130.7, 131.1, 136.6. Anal. (C₁₉H₂₄N₂O₂S·HCl) C, H, N.

2-[4-(4-Methylpiperidino)butyl]-2*H*-naphtho[1,8-*cd*]isothiazole 1,1-dioxide (61): yield 2.8 g (87%); chromatography chloroform/methanol, 9:1; mp 219-221 °C (d) (chloroform/hexane); ¹H NMR (CDCl₃) δ 0.92 (d, *J* = 5.8, 3H), 1.22-1.33 (m, 3H), 1.58-1.79 (m, 4H), 1.87-2.02 (m, 4H), 2.43 (t, *J* = 7.3, 2H), 2.92 (d, *J* = 11.7, 2H), 3.85 (t, *J* = 7.1, 2H), 6.76 (d, *J* = 7.1, 1H), 7.44 (d, *J* = 7.8, 1H), 7.54 (dd, *J* = 8.5, 7.1, 1H), 7.74 (dd, *J* = 8.3, 7.1, 1H), 7.95 (d, *J* = 7.1, 1H), 8.06 (d, *J* = 8.3, 1H); ¹³C NMR (CDCl₃) δ 21.8, 24.1, 26.2, 30.6, 34.1, 41.9, 53.9, 58.0, 103.0, 118.0, 119.2, 119.6, 128.0, 129.3, 130.4, 130.6, 131.0, 136.5. Anal. (C₂₀H₂₆N₂O₂S·HCl) C, H, N.

2-[4-(4-Methylpiperazin-1-yl)butyl]-2H-naphtho[1,8-*cd*]isothiazole 1,1-dioxide (62): yield 2.6 g (81%); chromatography chloroform/methanol, from 9.5:0.5 to 9:1; mp 265-268 °C (d) (chloroform/hexane); ¹H NMR (CDCl₃) δ 1.68 (qt, *J* = 7.3, 2H), 1.95 (qt, *J* = 7.3, 2H), 2.28 (s, 3H), 2.46-2.53 (m, 10H), 3.85 (t, *J* = 7.1, 2H), 6.75 (dd, *J* = 7.1, 0.7, 1H), 7.43 (dd, *J* = 8.5, 0.7, 1H), 7.53 (dd, *J* = 8.5, 7.1, 1H), 7.73 (dd, *J* = 8.3, 7.1, 1H), 7.95 (dd, *J* = 7.3, 0.7, 1H), 8.06 (dd, *J* = 8.3, 0.7, 1H); ¹³C NMR (CDCl₃) δ 24.1, 26.1, 41.9, 46.0, 53.1, 55.1, 57.7, 102.9, 118.0, 119.3, 119.7, 128.0, 129.3, 130.4, 130.6, 131.0, 136.6. Anal. (C₁₉H₂₅N₃O₂S·2HCl·1/2H₂O) C, H, N.

2-{4-[4-(2-Methoxyphenyl)piperazin-1-yl]butyl}-2H-naphtho[1,8-*cd*]isothiazole 1,1-dioxide (64): yield 3.3 g (82%); chromatography ethyl acetate; mp 211-213 °C (dichloromethane/diethyl ether); ¹H NMR (CDCl₃) δ 1.73 (qt, *J* = 7.2, 2H), 1.98 (qt, *J* = 6.9, 2H), 2.49 (t, *J* = 7.2, 2H), 2.66 (br s, 4H), 3.09 (br s, 4H), 3.84-3.89 (m, 5H), 6.76 (d, *J* = 7.2, 1H), 6.83-7.02 (m, 4H), 7.43 (d, *J* = 8.4, 1H), 7.52 (dd, *J* = 8.4, 7.2, 1H), 7.73 (t, *J* = 7.5, 1H), 7.94 (d, *J* = 7.2, 1H), 8.05 (d, *J* = 8.1, 1H); ¹³C NMR (CDCl₃) δ 24.2, 26.1, 41.9, 50.6, 53.4, 55.3, 57.8, 102.9, 111.1, 118.0, 118.1, 119.2, 119.7, 120.9, 122.8, 128.0, 129.3, 130.4, 130.6, 131.0, 136.6, 141.3, 152.2. Anal. (C₂₅H₂₉N₃O₃S·2HCl) C, H, N.

2-[5-(4-Methylpiperidino)pentyl]-2H-naphtho[1,8-*cd*]isothiazole 1,1-dioxide (65): yield 3.3 g (98%); chromatography chloroform/methanol, 9:1; mp 187-189 °C (chloroform); ¹H NMR (CDCl₃) δ 0.93 (d, *J* = 5.4, 3H), 1.37-1.74 (m, 9H), 1.88-2.09 (m, 4H), 2.45 (t, *J* = 7.3, 2H), 3.00 (d, *J* = 11.7, 2H), 3.83 (t, *J* = 7.3, 2H), 6.74 (d, *J* = 7.1, 1H), 7.44 (d, *J* = 7.8, 1H), 7.54 (dd, *J* = 8.5, 7.1, 1H), 7.72 (dd, *J* = 8.0, 7.3, 1H), 7.95 (d, *J* = 7.1, 1H), 8.06 (d, *J* = 8.2, 1H); ¹³C NMR (CDCl₃) δ 21.7, 24.9, 26.0, 28.0, 30.5, 33.6, 42.1, 53.8, 58.6, 103.1, 118.1, 119.3, 119.7, 128.1, 129.5, 130.5, 130.7, 131.2, 136.7. Anal. (C₂₁H₂₈N₂O₂S·2HCl·5/2H₂O) C, H, N.

2-[5-(4-Cyclohexylpiperidino)pentyl]-2H-naphtho[1,8-*cd*]isothiazole 1,1-dioxide (66): yield 3.9 g (98%); chromatography ethyl acetate/ethanol, 9:1; mp 163-165 °C (methanol/diethyl ether); ¹H

NMR (CDCl₃) δ 0.80-1.76 (m, 20H), 1.85-2.02 (m, 4H), 2.39 (t, J = 7.8, 2H), 3.03 (d, J = 11.0, 2H), 3.81 (t, J = 7.3, 2H), 6.72 (d, J = 7.1, 1H), 7.43 (d, J = 8.5, 1H), 7.52 (dd, J = 8.5, 7.1, 1H), 7.72 (dd, J = 8.0, 7.3, 1H), 7.94 (d, J = 7.3, 1H), 8.05 (d, J = 8.0, 1H); ¹³C NMR (CDCl₃) δ 25.0, 26.1, 26.6, 26.7, 28.0, 28.8, 30.2, 42.0, 41.3, 42.4, 54.3, 58.6, 103.0, 118.0, 119.3, 119.7, 128.0, 129.4, 130.4, 130.7, 131.1, 136.6. Anal. (C₂₆H₃₆N₂O₂S·HCl·H₂O) C, H, N.

2-[5-(4-Phenylpiperazin-1-yl)pentyl]-2H-naphtho[1,8-*cd*]isothiazole 1,1-dioxide (67): yield 3.7 g (94%); chromatography hexane/ethyl acetate, from 3:7 to 1:9; mp 216-218 °C (dichloromethane/hexane); ¹H NMR (CDCl₃) δ 1.47-1.67 (m, 4H), 1.96 (qt, J = 7.3, 2H), 2.41 (t, J = 7.0, 2H), 2.58 (t, J = 5.0, 4H), 3.18 (t, J = 5.0, 4H), 3.82 (t, J = 7.3, 2H), 6.71 (d, J = 7.3, 1H), 6.83 (t, J = 7.3, 1H), 6.91 (d, J = 7.9, 2H), 7.25 (t, J = 7.3, 2H), 7.42 (d, J = 8.3, 1H), 7.51 (dd, J = 8.5, 7.1, 1H), 7.72 (dd, J = 8.1, 7.3, 1H), 7.94 (d, J = 7.1, 1H), 8.04 (d, J = 8.3, 1H); ¹³C NMR (CDCl₃) δ 24.8, 26.3, 28.0, 42.0, 49.0, 53.1, 58.3, 102.7, 115.9, 117.9, 119.1, 119.5, 119.6, 127.9, 128.9, 129.2, 130.3, 130.5, 131.0, 136.5, 151.2. Anal. (C₂₅H₂₉N₃O₂S·2HCl) C, H, N.

2-{5-[4-(2-Methoxyphenyl)piperazin-1-yl]pentyl}-2H-naphtho[1,8-*cd*]isothiazole 1,1-dioxide (68): yield 3.7 g (87%); chromatography ethyl acetate/ethanol, 8:2; mp 210-212 °C (methanol/diethyl ether); ¹H NMR (CDCl₃) δ 1.48-1.72 (m, 4H), 1.98 (qt, J = 7.3, 2H), 2.45 (t, J = 6.8, 2H), 2.66 (br s, 4H), 3.11 (br s, 4H), 3.78-3.88 (m, 5H), 6.73 (d, J = 7.1, 1H), 6.83-7.05 (m, 4H), 7.44 (dd, J = 8.3, 0.7, 1H), 7.56 (dd, J = 8.5, 7.1, 1H), 7.74 (dd, J = 8.1, 7.3, 1H), 7.96 (d, J = 7.3, 1H), 8.06 (d, J = 8.5, 1H); ¹³C NMR (CDCl₃) δ 25.1, 26.5, 28.2, 42.2, 50.7, 53.5, 55.4, 58.6, 102.9, 111.2, 118.1, 118.2, 119.3, 119.8, 121.0, 122.9, 128.1, 129.4, 130.5, 130.7, 131.1, 136.7, 141.4, 152.3. Anal. (C₂₆H₃₁N₃O₃S·2HCl) C, H, N.

2-[6-(4-Methylpiperidin-1-yl)hexyl]-2H-naphtho[1,8-*cd*]isothiazole 1,1-dioxide (69): yield 3.2 g (93%); chromatography ethyl acetate/ethanol, from 8.5:1.5 to 8:2; mp 168-170 °C (chloroform/hexane); ¹H NMR (CDCl₃) δ 0.93 (d, J = 5.4, 3H), 1.30-1.75 (m, 11H), 1.92 (qt, J =

7.3, 2H), 2.15 (t, $J = 11.0$, 2H), 2.51 (t, $J = 7.6$, 2H), 3.08 (d, $J = 11.6$, 2H), 3.80 (t, $J = 7.3$, 2H), 6.72 (dd, $J = 7.1$, 0.7, 1H), 7.43 (dd, $J = 8.5$, 0.7, 1H), 7.53 (dd, $J = 8.5$, 7.1, 1H), 7.73 (dd, $J = 8.0$, 7.3, 1H), 7.94 (dd, $J = 7.3$, 0.7, 1H), 8.05 (d, $J = 8.3$, 1H); ^{13}C NMR (CDCl_3) δ 21.3, 25.4, 26.4, 26.8, 27.8, 30.0, 32.7, 41.9, 53.3, 58.1, 102.8, 117.9, 119.1, 119.4, 127.8, 129.2, 130.2, 130.5, 130.9, 136.4. Anal. ($\text{C}_{22}\text{H}_{30}\text{N}_2\text{O}_2\text{S}\cdot\text{HCl}\cdot 3\text{H}_2\text{O}$) C, H, N.

2-[6-(4-Phenylpiperazin-1-yl)hexyl]-2H-naphtho[1,8-*cd*]isothiazole 1,1-dioxide (70): yield 3.4 g (84%); chromatography hexane/ethyl acetate, from 4:6 to ethyl acetate; mp 205-207 °C (chloroform/diethyl ether); ^1H NMR (CDCl_3) δ 1.36-1.60 (m, 6H), 1.93 (qt, $J = 7.5$, 2H), 2.37 (t, $J = 7.5$, 2H), 2.57 (t, $J = 5.1$, 4H), 3.18 (t, $J = 5.1$, 4H), 3.81 (t, $J = 7.2$, 2H), 6.71 (d, $J = 6.9$, 1H), 6.83 (t, $J = 7.2$, 1H), 6.91 (dd, $J = 7.8$, 0.9, 2H), 7.24 (t, $J = 7.2$, 2H), 7.42 (d, $J = 8.7$, 1H), 7.52 (dd, $J = 8.4$, 7.2, 1H), 7.72 (td, $J = 7.2$, 0.9, 1H), 7.94 (d, $J = 7.2$, 1H), 8.04 (d, $J = 8.1$, 1H); ^{13}C NMR (CDCl_3) δ 26.7, 26.9, 27.1, 28.0, 42.1, 49.1, 53.2, 58.5, 102.8, 115.9, 118.0, 119.1, 119.5, 119.7, 128.0, 129.0, 129.3, 130.4, 130.6, 131.0, 136.6, 151.3. Anal. ($\text{C}_{26}\text{H}_{31}\text{N}_3\text{O}_2\text{S}\cdot 2\text{HCl}$) C, H, N.

2-{6-[4-(2-Methoxyphenyl)piperazin-1-yl]hexyl}-2H-naphtho[1,8-*cd*]isothiazole 1,1-dioxide (71): yield 3.5 g (80%); chromatography ethyl acetate; mp 203-205 °C (chloroform/hexane); ^1H NMR (CDCl_3) δ 1.34-1.68 (m, 6H), 1.95 (qt, $J = 7.3$, 2H), 2.45 (dd, $J = 8.1$, 7.1, 2H), 2.69 (br s, 4H), 3.12 (br s, 4H), 3.78-3.88 (m, 5H), 6.72 (dd, $J = 7.1$, 0.5, 1H), 6.83-7.04 (m, 4H), 7.43 (dd, $J = 8.5$, 0.7, 1H), 7.53 (dd, $J = 8.5$, 7.1, 1H), 7.72 (dd, $J = 8.3$, 7.1, 1H), 7.94 (dd, $J = 7.3$, 0.7, 1H), 8.05 (dd, $J = 8.1$, 0.5, 1H); ^{13}C NMR (CDCl_3) δ 26.6, 27.0, 27.2, 28.3, 42.2, 50.5, 53.5, 55.4, 58.7, 103.0, 111.3, 118.1, 118.3, 119.4, 119.8, 121.1, 123.0, 128.1, 129.4, 130.5, 130.8, 131.2, 136.8, 141.3, 152.3. Anal. ($\text{C}_{27}\text{H}_{33}\text{N}_3\text{O}_3\text{S}\cdot 2\text{HCl}$) C, H, N.