Journal of the Serbian Chemical Society
JSCS@tmf.bg.ac.rs • www.shd.org.rs/JSCS
J. Serb. Chem. Soc. 77 (1) S10–S29 (2012) *Supplementary material*

SUPPLEMENTARY MATERIAL TO

Synthesis and biological activity of 4-thiazolidinone derivatives of phenothiazine

RITU SHARMA*, PUSHKAL SAMADHIYA, SAVITRI D. SRIVASTAVA and SANTOSH K. SRIVASTAVA

Synthetic Organic Chemistry Laboratory, Department of Chemistry Dr. H. S. Gour University (A Central University), Sagar, M. P. India 470003

J. Serb. Chem. Soc. 77 (1) (2012) 17–26

ANALYTICAL AND SPECTRAL DATA OF THE SYNTHESIZED COMPOUNDS

*10-(3-Chloropropyl)-10*H*-phenothiazine (**1**)*. Yield: 60 %; m.p. 170–172 °C; Anal. Calcd. for $C_{15}H_{14}ClNS$: C, 65.32; H, 5.11; N, 5.07 %. Found: C, 65.27; H, 5.08; N, 4.97 %; IR (KBr, cm^{-1}): 687 (C–S–C), 774 (C–Cl), 1320 (N–C), 1552 (C=C), 1428, 2844, 2932 (CH_2), 3020 (CH–Ar); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / / ppm): 2.09–2.15 (2H, *m*, H-12), 3.51 (2H, *t*, *J* = 7.65 Hz, H-13), 4.12 (2H, *t*, *J* = = 7.65 Hz, H-11), 6.31–7.75 (8H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / / ppm): 34.1 (C-12), 44.4 (C-13), 48.4 (C-11), 113.8 (C-4 and C-5), 119.2 (C-1 and C-8), 122.7 (C-2 and C-7), 124.3 (C-3 and C-6), 138.2 (C-4a and C-5a), 146.7 (C-1a and C-8a); FAB mass (*m*/*z*): 275 [M^+].

N-*[3-(10*H*-Phenothiazin-10-yl)propyl]urea (**2**)*. Yield: 71 %; m.p. 152–153 °C; Anal. Calcd. for $C_{16}H_{17}N_3OS$: C, 64.18; H, 5.72; N, 14.03 %. Found: C, 64.12; H, 5.65; N, 13.98 %; IR (KBr, cm^{-1}): 678 (C–S–C), 1228 (N–C), 1465 (C=C), 1655 (CO), 1434, 2837, 2892 (CH_2), 3025 (CH–Ar), 3342, 3413 (NH_2); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.16–2.25 (2H, *m*, H-12), 3.22–3.28 (2H, *m*, H-12), 4.16 (2H, *t*, *J* = 7.40 Hz, H-11), 5.83 (1H, *s*, H-1'), 5.99 (2H, *s*, H-3'), 6.44–7.73 (8H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 34.0 (C-12), 44.2 (C-13), 48.9 (C-11), 114.0 (C-4 and C-5), 119.2 (C-1 and C-8), 122.7 (C-2 and C-7), 124.3 (C-3 and C-6), 138.2 (C-4a and C-5a), 145.3 (C-1a and C-8a) 163.4 (C-2'); FAB mass (*m*/*z*): 299 [M^+].

N-*[3-(10*H*-Phenothiazin-10-yl)propyl]*-N'*-(phenylmethylidene)urea (**3a**)*. Yield: 61 %; m.p. 148–149 °C; Anal. Calcd. for $C_{23}H_{21}N_3OS$: C, 71.29; H, 5.46; N, 10.84 %. Found: C, 71.24; H, 5.38; N, 10.81 %; IR (KBr, cm^{-1}): 684 (C–S–C), 1332 (N–C), 1464 (C=C), 1547 (N=CH), 1652 (CO), 1430, 2836, 2894 (CH_2),

* Corresponding author. E-mail: ritusharmaic@rediffmail.com

Available online at www.shd.org.rs/JSCS/

2012 Copyright (CC) SCS

3022 (CH–Ar), 3356 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.28–2.35 (2H, *m*, H-12), 3.26–3.34 (2H, *m*, H-13), 4.18 (2H, *t*, *J* = 7.50 Hz, H-11), 5.88 (1H, *s*, H-1'), 7.84 (1H, *s*, H-14), 6.40–7.81 (13H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 33.5 (C-12), 43.6 (C-13), 49.3 (C-11), 115.3 (C-4 and C-5), 116.7 (C-1 and C-8), 120.8 (C-2 and C-7), 121.6 (C-3 and C-6), 123.6 (C-16 and C-20), 125.5 (C-17 and C-19), 126.8 (C-18), 135.6 (C-15), 136.9 (C-4a and 5a), 143.7 (C-1a and C-8a), 150.6 (C-14), 162.4 (C-2'); FAB mass (*m*/*z*): 387 [M^+].

N-*[(4-Chlorophenyl)methylidene]*-N'-*[3-(10*H*-phenothiazin-10-yl)propyl]urea* (***3b***). Yield: 66 %; m.p. 168–169 °C; Anal. Calcd. for $C_{23}H_{20}ClN_3OS$: C, 65.47; H, 4.77; N, 9.95 %. Found: C, 65.43; H, 4.65; N, 9.91 %; IR (KBr, cm^{-1}): 684 (C–S–C), 735 (C–Cl), 1303 (N–C), 1472 (C=C), 1569 (N=CH), 1661 (CO), 1448, 2869, 2913 (CH_2), 3031 (CH–Ar), 3373 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / / ppm): 2.18–2.22 (*m*, 2H, H-12), 3.26–3.32 (*m*, 2H, H-13), 4.16 (t, 2H, *J* = 7.65 Hz, H-11), 5.97 (1H, *s*, H-1'), 7.84 (1H, *s*, H-14), 6.29–7.75 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 35.0 (C-12), 44.7 (C-13), 50.0 (C-11), 115.8 (C-4 and C-5), 120.4 (C-1 and C-8), 124.5 (C-2 and C-7), 125.4 (C-3 and C-6), 127.6 (C-16 and C-20), 126.5 (C-17 and C-19), 128.8 (C-18), 137.3 (C-15), 138.4 (C-4a and 5a), 147.2 (C-1a and C-8a), 152.0 (C-14), 165.3 (C-2'); FAB mass (*m*/*z*): 421 [M^+].

N-*[(3-Chlorophenyl)methylidene]*-N'-*[3-(10*H*-phenothiazin-10-yl)propyl]urea* (***3c***). Yield: 67 %; m.p. 166–167 °C; Anal. Calcd. for $C_{23}H_{20}ClN_3OS$: C, 65.47; H, 4.77; N, 9.95 %. Found: C, 65.41; H, 4.71; N, 9.83 %; IR (KBr, cm^{-1}): 693 (C–S–C), 739 (C–Cl), 1344 (N–C), 1476 (C=C), 1572 (N=CH), 1665 (CO), 1440, 2845, 2902 (CH_2), 3033 (CH–Ar), 3364 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.20–2.25 (2H, *m*, H-12), 3.23–3.29 (2H, *m*, H-13), 4.20 (2H, *t*, *J* = 7.65 Hz, H-11), 5.98 (1H, *s*, H-1'), 7.84 (1H, *s*, H-14), 6.34–7.76 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 35.5 (C-12), 44.5 (C-13), 51.0 (C--11), 116.7 (C-4 and C-5), 120.3 (C-1 and C-8), 124.5 (C-2 and C-7), 125.6 (C-3 and C-6), 126.3 (C-16), 126.8 (C-20), 127.4 (C-17), 127.9 (C-19), 128.5 (C-18), 137.2 (C-15), 138.1 (C-4a and C-5a), 147.5 (C-1a and C-8a), 151.3 (C-14), 164.2 (C-2'); FAB mass (*m*/*z*): 421 [M^+].

N-*[(2-Chlorophenyl)methylidene]*-N'-*[3-(10*H*-phenothiazin-10-yl)propyl]urea* (***3d***). Yield 65 %; m.p. 160–162 °C; Anal. Calcd. for $C_{23}H_{20}ClN_3OS$: C, 65.46; H, 4.77; N, 9.95 %. Found: C, 65.41; H, 4.72; N, 9.85 %; IR (KBr, cm^{-1}): 692 (C–S–C), 743 (C–Cl), 1338 (N–C), 1474 (C=C), 1578 (N=CH), 1670 (CO), 1439, 2848, 2906 (CH_2), 3034 (CH–Ar), 3367 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.18–2.25 (2H, *m*, H-12), 3.29–3.34 (2H, *m*, H-13), 4.19 (2H, *t*, *J* = 7.65 Hz, H-11), 5.91 (1H, *s*, H-1'), 7.87 (1H, *s*, H-14), 6.41–7.88 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 34.9 (C-12), 44.3 (C-13), 50.3 (C--11), 116.5 (C-4 and C-5), 119.4 (C-1 and C-8), 123.4 (C-2 and C-7), 124.1 (C-3 and C-6), 126.5 (C-16), 127.4 (C-20), 128.1 (C-17), 128.8 (C-19), 129.5 (C-18),

2012 Copyright (CC) SCS

136.1 (C-15), 137.7 (C-4a and C-5a), 146.1 (C-1a and C-8a), 153.4 (C-14), 162.7 (C-2'); FAB mass (*m*/*z*): 421 [M^+].

N-*[(4-Bromophenyl)methylidene]*-N'-*[3-(10*H-*phenothiazin-10-yl)propyl]urea* ***(3e)***. Yield: 65 %; m.p. 159–161 °C; Anal. Calcd. for $C_{23}H_{20}BrN_3OS$: C, 59.23; H, 4.32; N, 9.00 %. Found: C, 59.15; H, 4.23; N, 8.94 %; IR (KBr, cm^{-1}): 631 (C–Br), 697 (C–S–C), 1342 (N–C), 1472 (C=C), 1574 (N=CH), 1663 (CO), 1441, 2850, 2907 (CH_2), 3037 (CH–Ar), 3371 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.19–2.22 (2H, *m*, H-12), 3.21–3.26 (2H, *m*, H-13), 4.17 (2H, *t*, *J* = 7.60 Hz, H-11), 5.82 (1H, *s*, H-1'), 7.92 (1H, *s*, H-14), 6.39–7.68 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 35.0 (C-12), 43.8 (C-13), 50.2 (C--11), 115.1 (C-4 and C-5), 117.8 (C-1 and C-8), 122.7 (C-2 and C-7), 123.8 (C-3 and C-6), 124.4 (C-16 and C-20), 127.3 (C-17 and C-19), 128.8 (C-18), 140.8 (C-15), 141.2 (C-4a and C-5a), 146.4 (C-1a and C-8a), 153.8 (C-14), 162.1 (C--2'); FAB mass (*m*/*z*): 466 [M+1].

N-*[(3-Bromophenyl)methylidene]*-N'-*[3-(10*H-*phenothiazin-10-yl)propyl]ure* ***(3f)***. Yield: 64 %; m.p. 157–158 °C; Anal. Calcd. for $C_{23}H_{20}BrN_3OS$: C, 59.23; H, 4.32; N, 9.00 %. Found: C, 59.19; H, 4.31; N, 8.97 %; IR (KBr, cm^{-1}): 640 (C–Br), 691 (C–S–C), 1346 (N–C), 1479 (C=C), 1574 (N=CH), 1661 (CO), 1445, 2852, 2910 (CH_2), 3035 (CH–Ar), 3362 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / / ppm): 2.16–2.23 (2H, *m*, H-12), 3.24-3.30 (2H, *m*, C-13), 4.21 (2H, *t*, *J* = 7.60 Hz, H-11), 5.88 (1H, *s*, H-1'), 7.93 (1H, *s*, H-14), 6.36–7.86 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 33.6 (C-12), 44.2 (C-13), 49.3 (C-11), 116.3 (C-4 and C-5), 117.5 (C-1 and C-8), 122.6 (C-2 and C-7), 123.4 (C-3 and C-6), 125.3 (C-16), 126.4 (C-20), 128.5 (C-17), 128.9 (C-19), 129.6 (C-18), 140.5 (C-15), 141.8 (C-4a and C-5a), 148.4 (C-1a and C-8a), 151.6 (C-14), 164.9 (C-2'); FAB mass (*m*/*z*): 466 [M+1].

N-*[(2-Bromophenyl)methylidene]*-N'-*[3-(10*H-*phenothiazin-10-yl)propyl]urea* ***(3g)***. Yield: 62 %; m.p. 161–163 °C; Anal. Calcd. for $C_{23}H_{20}BrN_3OS$: C, 59.23; H, 4.32; N, 9.00 %. Found: C, 59.15; H, 4.24; N, 8.92 %; IR (KBr, cm^{-1}): 623 (C–Br), 699 (C–S–C), 1339 (N–C), 1473 (C=C), 1584 (N=CH), 1666 (CO), 1438, 2846, 2904 (CH_2), 3040 (CH–Ar), 3361 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / / ppm): 2.22–2.29 (2H, *m*, H-12), 3.27–3.36 (2H, *m*, H-13), 4.22 (2H, *t*, *J* = 7.65 Hz, H-11), 5.89 (1H, *s*, H-1'), 7.88 (1H, *s*, H-14), 6.23–7.83 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 33.2 (C-12), 45.0 (C-13), 51.2 (C-11), 116.8 (C-4 and C-5), 119.2 (C-1 and C-8), 123.5 (C-2 and C-7), 124.3 (C-3 and C-6), 125.9 (C-16 and C-20), 127.6 (C-17), 128.1 (C-19), 128.4 (C-18), 139.0 (C-15), 140.6 (C-4a and C-5a), 145.4 (C-1a and C-8a), 151.3 (C-14), 161.5 (C--2'); FAB mass (*m*/*z*): 466 [M+1].

N-*[(4-Nitrophenyl)methylidene]*-N'-*[3-(10*H-*phenothiazin-10-yl)propyl]urea* ***(3h)***. Yield: 66 %; m.p. 155–157 °C; Anal. Calcd. for $C_{23}H_{20}N_4O_3S$: C, 63.87; H, 4.66; N, 12.95 %. Found: C, 63.74; H, 4.61; N, 12.91 %; IR (KBr, cm^{-1}): 696

2012 Copyright (CC) SCS

(C–S–C), 848 (C–N), 1478 (C=C), 1524 (N=O), 1559 (N=CH), 1669 (CO), 1444, 2851, 2909 (CH_2), 3036 (CH–Ar), 3351 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / / ppm): 2.28–2.32 (2H, *m*, H-12), 3.25–3.31 (2H, *m*, H-13), 4.21 (2H, *t*, *J* = 7.60 Hz, H-11), 5.83 (1H, *s*, H-1'), 8.12 (1H, *s*, H-14), 6.24–7.89 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 38.7 (C-12), 46.4 (C-13), 47.3 (C-11), 116.8 (C-4 and C-5), 118.3 (C-1 and C-8), 124.0 (C-2 and C-7), 125.3 (C-3 and C-6), 126.6 (C-16 and C-20), 128.7 (C-17 and C-19), 129.3 (C-18), 139.9 (C-15), 140.5 (C-4a and C-5a), 149.2 (C-1a and C-8a), 153.7 (C-14), 165 (C-2'); FAB mass (*m*/*z*): 432 [M^+].

N-*[(3-Nitrophenyl)methylidene]*-N'-*[3-(10*H*-phenothiazin-10-yl)propyl]urea* (***3i***). Yield: 70 %; m.p. 157–159 °C; Anal. Calcd. for $C_{23}H_{20}N_4O_3S$: C, 63.87; H, 4.66; N, 12.95 %. Found: C, 63.75; H, 4.63; N, 12.87 %; IR (KBr, cm^{-1}): 694 (C–S–C), 845 (C–N), 1475 (C=C), 1534 (N=O), 1567 (N=CH), 1632 (CO), 1437, 2854, 2905 (CH_2), 3031 (CH–Ar), 3355 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / / ppm): 2.25–2.29 (2H, *m*, H-12), 3.21–3.27 (2H, *m*, H-13), 4.18 (2H, *t*, *J* = 7.60 Hz, H-11), 6.13 (1H, *s*, H-1'), 7.84 (1H, *s*, H-14), 6.37–7.67 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 32.2 (C-12), 44.6 (C-13), 50.8 (C-11), 114.6 (C-4 and C-5), 119.6 (C-1 and C-8), 125.7 (C-2 and C-7), 126.1 (C-3 and C-6), 127.2 (C-16), 128.4 (C-20), 129.0 (C-17), 129.4 (C-19), 130.7 (C-18), 138.4 (C-15), 139.2 (C-4a and C-5a), 145.4 (C-1a and C-8a), 156.0 (C-14), 163.4 (C-2'); FAB mass (*m*/*z*): 432 [M^+].

N-*[(2-Nitrophenyl)methylidene]*-N'-*[3-(10*H*-phenothiazin-10-yl)propyl]urea* (***3j***). Yield: 61 %; m.p. 149–150 °C; Anal. Calcd. for $C_{23}H_{20}N_4O_3S$: C, 63.87; H, 4.66; N, 12.95 %. Found: C, 63.71; H, 4.61; N, 12.85 %; IR (KBr, cm^{-1}): 698 (C–S–C), 845 (C–NH), 1473 (C=C), 1531 (N=O), 1554 (N=CH), 1639 (CO), 1446, 2849, 2912 (CH_2), 3039 (CH–Ar), 3344 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / / ppm): 2.21–2.24 (2H, *m*, H-12), 3.26–3.32 (2H, *m*, H-13), 4.21 (2H, *t*, *J* = 7.65 Hz, H-11), 6.08 (1H, *s*, H-1'), 8.23 (1H, *s*, H-14), 6.45-8.22 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 33.6 (C-12), 45.1 (C-13), 49.4 (C-11), 112.4 (C-4 and C-5), 118.2 (C-1 and C-8), 125.5 (C-2 and C-7), 126.4 (C-3 and C-6), 127.5 (C-16), 128.2 (C-20), 129.6 (C-17), 130.1 (C-19), 130.4 (C-18), 138.7 (C-15), 139.3 (C-4a and C-5a), 148.3 (C-1a and C-8a), 158.0 (C-14), 163.4 (C-2'); FAB mass (*m*/*z*): 432 [M^+].

N-*[(4-Methoxyphenyl)methylidene]*-N'-*[3-(10*H*-phenothiazin-10-yl)propyl]-urea* (***3k***). Yield: 61 %; m.p. 150–151 °C; Anal. Calcd. for $C_{24}H_{23}N_3O_2S$: C, 69.04; H, 5.55; N, 10.06 %. Found: C, 68.92; H, 5.48; N, 10.02 %; IR (KBr, cm^{-1}): 702 (C–S–C), 1336 (N–C), 1467 (C=C), 1546 (N=CH), 1667 (CO), 1433, 2839, 2895 (CH_2), 2943 (OCH_3), 3024 (CH–Ar), 3351 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.12–2.16 (2H, *m*, H-12), 3.18–3.26 (2H, *m*, H-13), 3.61 (3H, *s*, OCH_3), 4.12 (2H, *t*, *J* = 7.55 Hz, H-11), 5.82 (1H, *s*, H-1'), 7.95 (1H, *s*, H-14), 6.35–7.89 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 32.0 (C-12),

2012 Copyright (CC) SCS

42.5 (C-13), 48.4 (C-11), 53.0 (OCH_3),109.8 (C-4 and C-5), 116.0 (C-1 and C--8), 121.7 (C-2 and C-7), 122.4 (C-3 and C-6), 124.8 (C-16 and C-20), 126.0 (C--17 and C-19), 127.7 (C-18), 136.6 (C-15), 137.0 (C-4a and C-5a), 158.0 (C-1a and C-8a), 147.0 (C-14), 161.3 (C-2'); FAB mass (*m*/*z*): 417 [M^+].

N-*[(3-Methoxyphenyl)methylidene]*-N'-*[3-(10*H-*phenothiazin-10-yl)propyl]-urea (**3l**)*. Yield: 62 %; m.p. 149–150 °C; Anal. Calcd. for $C_{24}H_{23}N_3O_2S$: C, 69.04; H, 5.55; N, 10.06 %. Found: C, 68.99; H, 5.51; N, 10.01 %; IR (KBr, cm^{-1}): 704 (C–S–C), 1332 (N–C), 1461 (C=C), 1534 (N=CH), 1667 (CO), 1436, 2834, 2897 (CH_2), 2941 (OCH_3), 3020 (CH–Ar), 3353 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.14–2.19 (2H, *m*, H-12), 3.18–3.25 (2H, *m*, H-13), 3.75 (3H, *s*, OCH_3), 4.16 (2H, *t*, *J* = 7.55 Hz, H-11), 5.84 (1H, *s*, H-1'), 7.88 (1H, *s*, H-14), 6.55–7.98 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 32.4 (C-12), 42.7 (C-13), 48.6 (C-11), 54.5 (OCH_3), 114.1 (C-4 and C-5), 117.4 (C-1 and C--8), 120.3 (C-2 and C-7), 123.4 (C-3 and C-6), 125.5 (C-16), 126.2 (C-20), 126.5 (C-17), 127.3 (C-19), 128.9 (C-18), 135.6 (C-15), 138.6 (C-4a and C-5a), 158.7 (C-1a and C-8a), 146.0 (C-14), 163.9 (C-2'); FAB mass (*m*/*z*): 417 [M^+].

N-*[(2-Methoxyphenyl)methylidene]*-N'-*[3-(10*H-*phenothiazin-10-yl)propyl]-urea (**3m**)*. Yield: 64 %; m.p. 144–145 °C; Anal. Calcd. for $C_{24}H_{23}N_3O_2S$: C, 69.04; H, 5.55; N, 10.06 %. Found: C, 68.97; H, 5.51; N, 09.96 %; IR (KBr, cm^{-1}): 705 (C–S–C), 1339 (N–C), 1463 (C=C), 1531 (N=CH), 1665 (CO), 1431, 2836, 2899 (CH_2), 2941 (OCH_3), 3025 (CH–Ar), 3356 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.16–2.23 (2H, *m*, H-12), 3.20–3.28 (2H, *m*, H-13), 3.32 (3H, *s*, OCH_3), 4.12 (2H, *t*, *J* = 7.55 Hz, H-11), 5.73 (1H, *s*, H-1'), 8.15 (1H, *s*, H-14), 6.45–7.88 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 33.9 (C-12), 43.6 (C-13), 47.8 (CC-11), 52.0 (OCH_3), 115.4 (C-4 and C-5), 115.4 (C-1 and C--8), 120.7 (C-2 and C-7), 122.6 (C-3 and C-6), 124.3 (C-16), 125.4 (C-20), 126.0 (C-17), 126.8 (C-19), 127.5 (C-18), 138.6 (C-15), 141.0 (C-4a and 5a), 157.3 (C-1a and C-8a), 146.0 (C-14), 162.3 (C-2'); FAB–Mass (*m*/*z*): 417 [M^+].

N-*[(4-Methylphenyl)methylidene]*-N'-*[3-(10*H-*phenothiazin-10-yl)propyl]urea (**3n**)*. Yield: 60 %; m.p. 141–142 °C; Anal. Calcd. for $C_{24}H_{23}N_3OS$: C, 71.79; H, 5.77; N, 10.46 %. Found: C, 71.69; H, 5.74; N, 10.37 %; IR (KBr, cm^{-1}): 699 (C–S–C), 1326 (N–C), 1460 (C=C), 1538 (N=CH), 1661 (CO), 1428, 2833, 2891 (CH_2), 2918 (CH_3), 3019 (CH–Ar), 3339 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / / ppm): 2.11–2.19 (2H, *m*, H-12), 1.96 (3H, *s*, CH_3), 3.17–3.24 (2H, *m*, H-13), 4.06 (2H, *t*, *J* = 7.50 Hz, H-11), 5.82 (1H, *s*, H-1'), 8.14 (1H, *s*, H-14), 6.42-7.83 (12H, *m*, Ar-H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 23.2 (CH_3), 33.0 (C-12), 45.5 (C-13), 51.8 (C-11), 112.9 (C-4 and C-5), 115.3 (C-1 and C-8), 120.4 (C-2 and C-7), 121.2 (C-3 and C-6), 123.4 (C-16 and C-20), 125.2 (C-17 and C-19), 126.3 (C-18), 135.4 (C-15), 136.3 (C-4a and C-5a), 145.9 (C-1a and C-8a), 151.0 (C-14), 162.3 (C-2'); FAB mass (*m*/*z*): 401 [M^+].

2012 Copyright (CC) SCS

N-*[(3-Methylphenyl)methylidene]*-N'-*[3-(10*H-*phenothiazin-10-yl)propyl]urea* (***3o***). Yield: 61 %; m.p. 139–140 °C; Anal. for Calcd. $C_{24}H_{23}N_3OS$: C, 71.79; H, 5.77; N, 10.46 %. Found: C, 71.71; H, 5.69; N, 10.41 %; IR (KBr, cm^{-1}): 701 (C–S–C), 1323 (N–C), 1465 (C=C), 1536 (N=CH), 1663 (CO), 1425, 2838, 2892 (CH_2), 2920 (CH_3), 3014 (CH–Ar), 3354 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / / ppm): 2.15–2.19 (2H, *m*, H-12), 2.01 (3H, *s*, CH_3), 3.21–3.29 (2H, *m*, H-13), 4.04 (2H, *t*, *J* = 7.45 Hz, H-11), 5.78 (1H, *s*, H-1'), 8.22 (1H, *s*, H-14), 6.41–7.81 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 24.0 (CH_3), 34.0 (C-12), 45.2 (C-13), 47.1 (C-11), 113.5 (C-4 and C-5), 116.6 (C-1 and C-8), 119.4 (C-2 and C-7), 122.4 (C-3 and C-6), 123.8 (C-16), 124.2 (C-20), 124.7 (C-17 and C--19), 126.7 (C-18), 139.4 (C-15), 142.3 (C-4a and C-5a), 146.8 (C-1a and C-8a), 148.0 (C-14), 162.2 (C-2'); FAB mass (*m*/*z*): 401 [M^+].

N-*[(2-Methylphenyl)methylidene]*-N'-*[3-(10*H-*phenothiazin-10-yl)propyl]urea* (***3p***). Yield: 62 %; m.p. 136–138 °C; Anal. Calcd. for $C_{24}H_{23}N_3OS$: C, 71.79; H, 5.77; N, 10.46 %. Found: C, 71.69; H, 5.67; N, 10.42 %; IR (KBr, cm^{-1}): 695 (C–S–C), 1323 (N–C), 1467 (C=C), 1531 (N=CH), 1665 (CO), 1426, 2830, 2894 (CH_2), 2910 (CH_3), 3017 (CH–Ar), 3345 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / / ppm): 2.13–2.18 (2H, *m*, H-12), 2.05 (3H, *s*, CH_3), 3.18–3.26 (2H, *m*, H-13), 4.00 (2H, *t*, *J* = 7.50 Hz, H-11), 5.79 (1H, *s*, H-1'), 8.34 (1H, *s*, H-14), 6.34–7.85 (12H, *m*, Ar-H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 21.6 (CH_3), 32.2 (C-12), 43.9 (C-13), 48.6 (C-11), 113.7 (C-4 and C-5), 116.5 (C-1 and C-8), 121.4 (C-2 and C-7), 122.4 (C-3 and C-6), 123.6 (C-16), 125.3 (C-20), 126.4 (C-17), 127.5 (C-19), 128.3 (C-18), 137.7 (C-15), 139.4 (C-4a and C-5a), 143.7 (C-1a and C--8a), 152.0 (C-14), 160.5 (C-2'); FAB mass (*m*/*z*): 401 [M^+].

N-*[(4-Hydroxyphenyl)methylidene]*-N'-*[3-(10*H-*phenothiazin-10-yl)propyl]-urea* (***3q***). Yield: 64 %; m.p. 162–164 °C; Anal. Calcd. for $C_{23}H_{21}N_3O_2S$: C, 68.46; H, 5.24; N, 10.41 %. Found: C, 68.41; H, 5.22; N, 10.35 %; IR (KBr, cm^{-1}): 702 (C–S–C), 1337 (N–C), 1468 (C=C), 1555 (N=CH), 1670 (CO), 1435, 2841, 2898 (CH_2), 3027 (CH–Ar), 3357 (NH), 3468 (OH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.29–2.36 (2H, *m*, H-12), 3.07–3.14 (2H, *m*, H-13), 4.84 (1H, *s*, OH), 4.14 (2H, *t*, *J* = 7.45 Hz, H-11), 5.75 (1H, *s*, H-1'), 8.26 (1H, *s*, H-14), 6.52–7.79 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 32.4 (C-12), 43.6 (C-13), 51.3 (C-11), 114.7 (C-4 and C-5), 116.4 (C-1 and C-8), 121.6 (C-2 and C-7), 122.2 (C-3 and C-6), 124.6 (C-16 and C-20), 126.1 (C-17 and C-19), 127.4 (C-18), 136.5 (C-15), 137.2 (C-4a and C-5a), 154.6 (C-1a and C-8a), 146.0 (C-14), 157.0 (C-2'); FAB mass (*m*/*z*): 403 [M^+].

N-*[(3-Hydroxyphenyl)methylidene]*-N'-*[3-(10*H-*phenothiazin-10-yl)propyl]-urea* (***3r***). Yield: 60 %; m.p. 166–167 °C; Anal. Calcd. for $C_{23}H_{21}N_3O_2S$: C, 68.46; H, 5.24; N, 10.41 %. Found: C, 68.32; H, 5.16; N, 10.38 %; IR (KBr, cm^{-1}): 706 (C–S–C), 1336 (N–C), 1465 (C=C), 1551 (N=CH), 1673 (CO), 1431, 2844, 2895 (CH_2), 3029 (CH–Ar), 3352 (NH), 3458 (OH); ^{1}H-NMR (300 MHz, $CDCl_3$,

2012 Copyright (CC) SCS

δ / ppm): 2.31–2.36 (2H, *m*, H-12), 3.16–3.21 (2H, *m*, H-13), 4.78 (1H, *s*, OH), 4.20 (2H, *t*, *J* = 7.45 Hz, H-11), 5.81 (1H, *s*, H-1'), 7.99 (1H, *s*, H-14), 6.32–7.79 (m, 12H, Ar–H); ^{13}C NMR (75 MHz, $CDCl_3$, δ / ppm): 32.2 (C-12), 43.0 (C-13), 48.2 (C-11), 115.4 (C-4 and C-5), 119.5 (C-1 and C-8), 120.4 (C-2 and C-7), 123.7 (C-3 and C-6), 125.6 (C-16), 126.2 (C-20), 126.5 (C-17 and C-19), 129.7 (C-18), 135.6 (C-15), 139.2 (C-4a and C-5a), 154.6 (C-1a and C-8a), 149.0 (C--14), 155.7 (C-2'); FAB mass (*m*/*z*): 403 [M^+].

N-*[(2-Hydroxyphenyl)methylidene]*-N'-*[3-(10*H-*phenothiazin-10-yl)propyl]-urea* (***3s***). Yield: 62 %; m.p. 160–162 °C; Anal. Calcd. for $C_{23}H_{21}N_3O_2S$: C, 68.46; H, 5.24; N, 10.41 %. Found: C, 68.33; H, 5.15; N, 10.37 %; IR (KBr, cm^{-1}): 703 (C–S–C), 1335 (N–C), 1473 (C=C), 1541 (N=CH), 1669 (CO), 1437, 2842, 2900 (CH_2), 3024 (CH–Ar), 3345 (NH), 3458 (OH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.26–2.31 (2H, *m*, H-12), 3.14–3.19 (2H, *m*, H-13), 4.57 (1H, *s*, OH), 4.15 (2H, *t*, *J* = 7.45 Hz, H-11), 5.76 (1H, *s*, H-1'), 7.84 (1H, *s*, H-14), 6.35–7.85 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 32.4 (C-12), 42.3 (C-13), 49.4 (C-11), 114.2 (C-4 and C-5), 117.5 (C-1 and C-8), 122.4 (C-2 and C-7), 124.5 (C-3 and C-6), 126.3 (C-16), 126.9 (C-20), 127.4 (C-17), 128.4 (C-19), 130.3 (C-18), 138.6 (C-15), 143.5 (C-4a and C-5a), 154.0 (C-1a and C--8a), 152.0 (C-14), 157.2 (C-2'); FAB mass (*m*/*z*): 403 [M^+].

4-Oxo-N-*[3-(10*H-*phenothiazin-10-yl)propyl]-2-phenyl-3-thiazolidinecarboxamide* (***4a***). Yield: 64 %; m.p. 155–157 °C; Anal. Calcd. for $C_{25}H_{23}N_3O_2S_2$: C, 65.04; H, 5.02; N, 9.10 %. Found: C, 64.97; H, 4.93; N, 9.02 %; IR (KBr, cm^{-1}): 680 (C–S–C), 1330 (C–NH), 1457 (C=C), 1558, 1662 (CO), 1738 (CO cyclic), 1434, 2836, 2912 (CH_2), 2936 (S–CH_2), 3012 (CH–Ar), 3352 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.20–2.24 (2H, *m*, H-12), 3.43 (2H, *s*, H-5"), 3.35––3.41 (2H, *m*, H-13), 4.24 (2H, *t*, *J* = 7.55 Hz, H-11), 5.31 (1H, *s*, H-2"), 5.82 (1H, *s*, H-1'), 6.25–7.86 (13H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 37.9 (C-12), 41.4 (C-5"), 46.6 (C-13), 51.7 (C-11), 63.2 (C-2"), 112.0 (C-4 and C-5), 119.7 (C-1 and C-8), 122.3 (C-2 and C-7), 123.7 (C-3 and C-6), 125.5 (C--15 and C-19), 127.9 (C-16 and C-18), 128.4 (C-17), 137.9 (C-14), 138.7 (C-4a and C-5a), 145.0 (C-1a and C-8a), 162.2 (C-2'), 172.3 (C-4"); FAB mass (*m*/*z*): 462 [M^+].

2-(4-Chlorophenyl)-4-oxo-N-*[3-(10*H-*phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide* (***4b***). Yield: 71 %; m.p. 180–182 °C; Anal. Calcd. for $C_{25}H_{22}ClN_3O_2S_2$: C, 60.59; H, 4.47; N, 8.48 %. Found: C, 60.53; H, 4.43; N, 8.44 %; IR (KBr, cm^{-1}): 715 (C–S–C), 768 (C–Cl), 1340 (C–NH), 1462 (C=C), 1667 (CO), 1752 (CO cyclic), 1440, 2850, 2917 (CH_2), 2948 (S–CH_2), 3016 (CH–Ar), 3358 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.34–2.38 (2H, *m*, H-12), 3.68 (2H, *s*, H-5"), 3.44–3.49 (2H, *m*, H-13), 4.31 (2H, *t*, *J* = 7.45 Hz, H--11), 5.39 (1H, *s*, H-2"), 5.90 (1H, *s*, H-1'), 6.44–8.05 (12H, *m*, Ar–H); ^{13}C--NMR (75 MHz, $CDCl_3$, δ / ppm): 40.1 (C-12), 38.0 (C-5"), 48.3 (C-13), 55.5

2012 Copyright (CC) SCS

(C-11), 59.0 (C-2”), 113.0 (C-4 and C-5), 121.1 (C-1 and C-8), 125.5 (C-2 and C-7), 126.5 (C-3 and C-6), 128.8 (C-15 and C-19), 129.4 (C-16 and C-18), 130.4 (C-17), 140.5 (C-14), 141.6 (C-4a and C-5a), 147.0 (C-1a and C-8a), 167.8 (C-2’), 176.5 (C-4”); FAB mass (*m*/*z*): 496 [M^+].

2-(3-Chlorophenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide (**4c**)*. Yield: 69 %; m.p. 178–179 °C; Anal. Calcd. for $C_{25}H_{22}ClN_3O_2S_2$: C, 60.59; H, 4.47; N, 8.48 %. Found: C, 60.53; H, 4.43; N, 8.41 %; IR (KBr, cm^{-1}): 687, 716 (C–S–C), 752 (C–Cl), 1343 (C–N), 1463 (C=C), 1670 (CO), 1750 (CO cyclic), 1444, 2836, 2918 (CH_2), 2954 (S–CH_2), 3027 (CH–Ar), 3362 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.35–2.40 (2H, *m*, H-12), 3.57 (2H, *s*, H-5”), 3.45–3.50 (2H, *m*, H-13), 4.37 (2H, *t*, *J* = 7.55 Hz, H-11), 5.57 (1H, *s*, H-2”), 5.92 (1H, *s*, H-1’), 6.32–7.65 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 40.4 (C-12), 32.0 (C-5”), 49.4 (C-13), 55.6 (C-11), 59.0 (C-2”), 115.0 (C-4 and C-5), 122.3 (C-1 and C-8), 125.5 (C-2 and C-7), 126.9 (C-3 and C-6), 130.3 (C-15), 131.2 (C-19), 132.1 (C-16), 132.7 (C-18), 133.7 (C-17), 141.5 (C-14), 142.6 (C-4a and C-5a), 146.0 (C-1a and C--8a), 163.6 (C-2’), 178.8 (C-4”); FAB mass (*m*/*z*): 496 [M^+].

2-(2-Chlorophenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide (**4d**)*. Yield: 68 %; m.p. 176–177 °C; Anal. Calcd. for $C_{25}H_{22}ClN_3O_2S_2$: C, 60.59; H, 4.47; N, 8.48 %. Found: C, 60.53; H, 4.43; N, 8.44 %; IR (KBr, cm^{-1}): 689, 710 (C–S–C), 760 (C–Cl), 1347 (C–N), 1472 (C=C), 1673 (CO), 1755 (CO cyclic), 1447, 2844, 2922 (CH_2), 2950 (S–CH_2), 3022 (CH–Ar), 3360 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.40–2.46 (2H, *m*, H-12), 3.61 (2H, *s*, H-5”), 3.41–3.47 (2H, *m*, H-13), 4.33 (2H, *t*, *J* = 7.40 Hz, H-11), 5.46 (1H, *s*, H-2”), 5.94 (1H, *s*, H-1’), 6.51–7.92 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 41.7 (C-12), 36.0 (C-5”), 46.3 (C-13), 53.1 (C-11), 61.0 (C-3”), 113.0 (C-4 and C-5), 119.7 (C-1 and C-8), 126.5 (C-2 and C-7), 127.2 (C-3 and C-6), 131.4 (C-15), 131.8 (C-19), 132.8 (C-16), 133.0 (C-18), 133.6 (C-17), 138.9 (C-14), 143.7 (C-4a and C-5a), 147.0 (C-1a and C--8a), 167.9 (C-2’), 175.0 (C-4”); FAB mass (*m*/*z*): 496 [M^+].

2-(4-Bromophenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide (**4e**)*. Yield: 70 %; m.p. 173–174 °C; Anal. Calcd. for $C_{25}H_{22}BrN_3O_2S_2$: C, 55.55; H, 4.10; N, 7.77 %. Found: C, 55.43; H, 4.04; N, 7.71 %; IR (KBr, cm^{-1}): 709 (C–S–C), 755 (C–Cl), 1338 (C–NH), 1466 (C=C), 1674 (CO), 1758 (CO cyclic), 1448, 2845, 2924 (CH_2), 2949 (S–CH_2), 3018 (CH–Ar), 3365 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.41–2.46 (2H, *m*, H-12), 3.51 (2H, *s*, H-5”), 3.47–3.53 (2H, *m*, H-13), 4.45 (2H, *t*, *J* = 7.45 Hz, H--11), 5.36 (1H, *s*, H-2”), 5.95 (1H, *s*, H-1’), 6.39–7.81 (12H, *m*, Ar–H); ^{13}C--NMR (75 MHz, $CDCl_3$, δ / ppm): 41.8 (C-12), 37.6 (C-5”), 46.3 (C-13), 53.4 (C-11), 62.6 (C-2”), 114.0 (C-4 and C-5), 121.3 (C-1 and C-8), 123.8 (C-2 and C-7), 124.6 (C-3 and C-6), 128.4 (C-15 and C-19), 130.3 (C-16 and C-18), 131.8

2012 Copyright (CC) SCS

(C-17), 141.9 (C-14), 142.8 (C-4a and C-5a), 148.0 (C-1a and C-8a), 164.0 (C--2'), 176.0 (C-4"); FAB mass (*m*/*z*): 541 [M^+].

2-(3-Bromophenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide* (***4f***). Yield: 69 %; m.p. 168–170 °C; Anal. Calcd. for $C_{25}H_{22}BrN_3O_2S_2$: C, 55.55; H, 4.10; N, 7.77 %. Found: C, 55.45; H, 4.06; N, 7.72 %; IR (KBr, cm^{-1}): 705 (C–S–C), 749 (C–Cl), 1350 (C–N), 1467 (C=C), 1678 (CO), 1746 (CO cyclic), 1450, 2843, 2923 (CH_2), 2947 (S–CH_2), 3025 (CH–Ar), 3359 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.35–2.42 (2H, *m*, H-12), 3.49 (2H, *s*, H-5"), 3.45–3.51 (2H, *m*, H-13), 4.38 (2H, *t*, *J* = 7.60 Hz, H--11), 5.62 (1H, *s*, H-2"), 5.98 (1H, *s*, H-1'), 6.25–7.79 (12H, *m*, Ar–H); ^{13}C--NMR (75 MHz, $CDCl_3$, δ / ppm): 43.9 (C-12), 35.4 (C-5"), 48.6 (C-13), 54.1 (C-11), 64.3 (C-2"), 113.0 (C-4 and C-5), 121.7 (C-1 and C-8), 123.2 (C-2 and C-7), 124.3 (C-3 and C-6), 129.4 (C-15), 129.8 (C-19), 130.7 (C-16), 130.9 (C--18), 131.3 (C-17), 139.1 (C-14), 140.9 (C-4a and C-5a), 148.0 (C-1a and C-8a), 165.5 (C-2'), 174.3 (C-4"); FAB mass (*m*/*z*): 541 [M^+].

2-(2-Bromophenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide* (***4g***). Yield: 67 %; m.p. 163–164 °C, Anal. Calcd. for $C_{25}H_{22}BrN_3O_2S_2$: C, 55.55; H, 4.10; N, 7.77 %. Found: C, 55.43; H, 4.03; N, 7.73 %; IR (KBr, cm^{-1}): 702 (C–S–C), 748 (C–Cl), 1341 (C–N), 1468 (C=C), 1671 (CO), 1752 (CO cyclic), 1452, 2847, 2919 (CH_2), 2951 (S–CH_2), 3024 (CH–Ar), 3356 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.39–2.43 (2H, *m*, H-12), 3.34 (2H, *s*, H-5"), 3.42–3.48 (2H, *m*, H-13), 4.40 (2H, *t*, *J* = 7.50 Hz, H--11), 5.51 (1H, *s*, H-2"), 5.93 (1H, *s*, H-1'), 6.35–7.92 (12H, *m*, Ar–H); ^{13}C--NMR (75 MHz, $CDCl_3$, δ / ppm): 32.3 (C-12), 37.0 (C-5"), 45.1 (C-13), 49.2 (C-11), 65.1 (C-2"), 114.0 (C-4 and C-5), 120.2 (C-1 and C-8), 126.4 (C-2 and C-7), 127.2 (C-3 and C-6), 130.8 (C-15), 131.4 (C-19), 131.9 (C-16), 132.2 (C--18), 132.8 (C-17), 139.1 (C-14), 140.6 (C-4a and C-5a), 145.0 (C-1a and C-8a), 166.7 (C-2'), 171.4 (C-4"); FAB mass (*m*/*z*): 541 [M^+].

2-(4-Nitrophenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide* (***4h***). Yield: 74 %; m.p. 167–168 °C; Anal. Calcd. for $C_{25}H_{22}N_4O_4S_2$: C, 59.27; H, 4.37; N, 11.05 %. Found: C, 59.18; H, 4.32; N, 10.99 %; IR (cm^{-1}): 692 (C–S–C), 870 (C–NO), 1324 (C–N), 1540 (N=O), 1464 (C=C), 1672 (CO), 1748 (CO cyclic), 1453, 2841, 2921 (CH_2), 2955 (S–CH_2), 3019 (CH–Ar), 3361 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.41–2.45 (2H, *m*, H-12), 3.52 (2H, *s*, H-5"), 3.50–3.57 (2H, *m*, H-13), 4.36 (2H, *t*, *J* = 7.55 Hz, H-11), 5.39 (1H, *s*, H-2"), 6.01 (1H, *s*, H-1'), 6.45–7.94 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 42.2 (C-12), 37.6 (C-5"), 47.5 (C-13), 56.6 (C-11), 63.0 (C-2"), 116.0 (C-4 and C-5), 122.0 (C-1 and C-8), 126.8 (C-2 and C-7), 127.6 (C-3 and C-6), 131.5 (C-15 and C-19), 132.7 (C-16 and C-18), 133.1 (C-17), 140.2 (C-14), 141.6 (C-4a and C-5a), 149.0 (C-1a and C-8a), 164.4 (C-2'), 162.2 (C-4"); FAB mass (*m*/*z*): 507 [M^+].

2012 Copyright (CC) SCS

2-(3-Nitrophenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide* ***(4i)***. Yield: 72 %; m.p. 164–165 °C; Anal. Calcd. for $C_{25}H_{22}N_4O_4S_2$: C, 59.27; H, 4.37; N, 11.05 %. Found: C, 59.18; H, 4.32; N, 10.99 %; IR (KBr, cm^{-1}): 698 (C–S–C), 865 (C–NO), 1324 (C–N), 1545 (N=O), 1470 (C=C), 1679 (CO), 1752 (CO cyclic), 1454, 2840, 2925 (CH_2), 2945 (S–CH_2), 3024 (CH–Ar), 3363 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.32–2.37 (2H, *m*, H-12), 3.64 (2H, *s*, H-5”), 3.46–3.52 (2H, *m*, H-13), 4.42 (2H, *t*, *J* = 7.45 Hz, H-11), 5.69 (1H, *s*, H-2”), 6.00 (1H, *s*, H-1’), 6.35–7.84 (12H, *m*, Ar-H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 43.3 (C-12), 38.6 (C-5”), 47.9 (C--13), 54.8 (C-11), 63.4 (C-2”), 116.0 (C-4 and C-5), 119.6 (C-1 and C-8), 124.8 (C-2 and C-7), 125.7 (C-3 and C-6), 131.6 (C-15), 130.5 (C-19), 129.1 (C-16), 129.7 (C-18), 130.4 (C-17), 141.7 (C-14), 142.7 (C-4a and C-5a), 148.0 (C-1a and C-8a), 165.4 (C-2’), 173.0 (C-4”); FAB mass (*m*/*z*): 507 [M^+].

2-(2-Nitrophenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide* ***(4j)***. Yield: 73 %; m.p. 162–163 °C; Anal. Calcd. for $C_{25}H_{22}N_4O_4S_2$: C, 59.27; H, 4.37; N, 11.05 %. Found: C, 59.19; H, 4.34; N, 10.97 %; IR (KBr, cm^{-1}): 655 (C–S–C), 1325 (C–N), 1489 (C=C), 1496 (N=O), 1680 (CO), 1745 (CO cyclic), 1446, 2851, 2924 (CH_2), 2948 (S–CH_2), 3020 (CH–Ar), 3362 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.35–2.41 (2H, *m*, H-12), 3.38 (2H, *s*, H-5”), 3.41–3.46 (2H, *m*, H-13), 4.37 (2H, *t*, *J* = 7.50 Hz, H--11), 5.26 (1H, *s*, H-2”), 5.93 (1H, *s*, H-1’), 6.29–7.97 (12H, *m*, Ar–H); ^{13}C--NMR (75 MHz, $CDCl_3$, δ / ppm): 41.0 (C-12), 42.9 (C-5”), 48.2 (C-13), 56.4 (C-11), 63.6 (C-2”), 112.0 (C-4 and C-5), 120.3 (C-1 and C-8), 124.6 (C-2 and C-7), 125.9 (C-3 and C-6), 129.7 (C-15), 130.2 (C-19), 131.2 (C-16), 132.6 (C--18), 142.4 (C-17), 143.6 (C-14), 148.6 (C-4a and C-5a), 146.0 (C-1a and C-8a), 162.2 (C-2’), 163.4 (C-4”); FAB mass (*m*/*z*): 507 [M^+].

2-(4-Methoxyphenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide* ***(4k)***. Yield: 66 %; m.p. 157–159 °C; Anal. Calcd. for $C_{26}H_{25}N_3O_3S_2$: C, 63.51; H, 5.12; N, 8.54 %. Found: C, 63.38; H, 5.08; N, 8.49 %; IR (KBr, cm^{-1}): 688 (C–S–C), 1065 (C–O), 1331 (C–N), 1458 (C=C), 1664 (CO), 1729 (CO cyclic), 1435, 2837, 2913 (CH_2), 2949 (S–CH_2), 2958 (OCH_3), 3014 (CH–Ar), 3354 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.29–2.33 (2H, *m*, H-12), 3.39 (2H, *s*, H-5”), 3.42–3.47 (2H, *m*, H-13), 3.56 (3H, *s*, OCH_3), 4.27 (2H, *t*, *J* = 7.45 Hz, H-11), 5.42 (1H, *s*, H-2”), 5.85 (1H, *s*, H-1’), 6.36–7.85 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 39.5 (C-12), 38.0 (C-5”), 45.7 (C-13), 52.4 (C-11), 60.3 (C-2”), 52.0 (OCH_3), 116.0 (C-4 and C-5), 118.1 (C-1 and C-8), 122.3 (C-2 and C-7), 123.4 (C-3 and C-6), 126.5 (C-15 and C-19), 128.5 (C-16 and C-18), 129.7 (C-17), 138.4 (C-14), 142.4 (C-4a and C-5a), 158.0 (C-1a and C-8a), 163.9 (C-2’), 162.0 (C-4”); FAB mass (*m*/*z*): 492 [M^+].

2-(3-Methoxyphenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide* ***(4l)***. Yield: 64 %; m.p. 154–155 °C; Anal. Calcd. for

2012 Copyright (CC) SCS

$C_{26}H_{25}N_3O_3S_2$: C, 63.51; H, 5.12; N, 8.54 %. Found: C, 63.37; H, 5.05; N, 8.44 %; IR (KBr, cm^{-1}): 688 (C–S–C), 1028 (C–O), 1336 (C–N), 1453 (C=C), 1669 (CO), 1752 (CO cyclic), 1433, 2838, 2911 (CH_2), 2948 (S–CH_2), 2951 (OCH_3), 3015 (CH–Ar), 3359 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.25–2.30 (2H, *m*, H-12), 3.46 (2H, *s*, H-5"), 3.45–3.49 (2H, *m*, H-13), 3.49 (3H, *s*, OCH_3), 4.28 (2H, *t*, *J* = 7.45 Hz, H-11), 5.33 (1H, *s*, H-2"), 5.88 (1H, *s*, H-1'), 6.52–7.84 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 38.4 (C-12), 34.0 (C-5"), 44.8 (C-13), 52.1 (C-11), 59.6 (C-2"), 54.3 (OCH_3), 118.2 (C-4 and C-5), 120.4 (C-1 and C-8), 123.9 (C-2 and C-7), 124.6 (C-3 and C-6), 126.8 (C-15), 128.4 (C-19), 129.4 (C-16), 131.1 (C-18), 132.4 (C-17), 137.3 (C-14), 144.1 (C-4a and C-5a), 156.0 (C-1a and C-8a), 159.9 (C-2'), 161.0 (C-4"); FAB mass (*m*/*z*): 492 [M^+].

2-(2-Methoxyphenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide (**4m**)*. Yield: 61 %; m.p. 156–158 °C; Anal. Calcd. for $C_{26}H_{25}N_3O_3S_2$: C, 63.51; H, 5.12; N, 8.54 %. Found: C, 63.42; H, 5.09; N, 8.51 %; IR (KBr, cm^{-1}): 687 (C–S–C), 1055 (C–O), 1335 (C–N), 1455 (C=C), 1663 (CO), 1725 (CO cyclic), 1438, 2834, 2919 (CH_2), 2943 (S–CH_2), 2945 (OCH_3), 3016 (CH–Ar), 3350 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.21–2.27 (2H, *m*, H-12), 3.35 (2H, *s*, H-5"), 3.39–3.45 (2H, *m*, H-13), 3.52 (3H, *s*, OCH_3), 4.24 (2H, *t*, *J* = 7.45 Hz, H-11), 5.21 (1H, *s*, H-2"), 5.80 (1H, *s*, H-1'), 6.46–7.86 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 37.3 (C-12), 33.1 (C-5"), 43.9 (C-13), 53.6 (C-11), 61.2 (C-2"), 56.2 (OCH_3), 119.0 (C-4 and C-5), 120.3 (C-1 and C-8), 121.6 (C-2 and C-7), 125.7 (C-3 and C-6), 127.5 (C-15), 129.2 (C-19), 130.4 (C-16), 131.5 (C-18), 133.8 (C-17), 140.3 (C-14), 146.1 (C-4a and C-5a), 155.0 (C-1a and C-8a), 162.4 (C-2'), 161.2 (C-4"); FAB mass (*m*/*z*): 492 [M^+].

2-(4-Methylphenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide (**4n**)*. Yield: 68 %; m.p. 148–151 °C; Anal. Calcd. for $C_{26}H_{25}N_3O_2S_2$: C, 65.65; H, 5.29; N, 8.83 %. Found: C, 65.48; H, 5.22; N, 8.73 %; IR (KBr, cm^{-1}): 672 (C–S–C), 1326 (C–N), 1456 (C=C), 1660 (CO), 1728 (CO cyclic), 1433, 2835, 2910 (CH_2), 2942 (S–CH_2), 3011 (CH–Ar), 2898 (CH_3), 3350 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.02 (3H, *s*, CH_3), 2.20–2.24 (2H, *m*, H-12), 3.49 (2H, *s*, H-5"), 3.39–3.45 (2H, *m*, H-13), 4.21 (2H, *t*, *J* = 7.40 Hz, H-11), 5.64 (1H, *s*, H-2"), 5.80 (1H, *s*, H-1'), 6.35–7.90 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 20.5 (CH_3), 38.1 (C-12), 33.5 (C--5"), 43.3 (C-13), 51.1 (C-11), 63.0 (C-2"), 117.0 (C-4 and C-5), 118.7 (C-1 and C-8), 122.1 (C-2 and C-7), 123.2 (C-3 and C-6), 124.8 (C-15 and C-19), 127.4 (C-16 and C-18), 128.5 (C-17), 137.6 (C-14), 138.5 (C-4a and C-5a), 149.0 (C-1a and C-8a), 161.7 (C-2'), 160.0 (C-4"); FAB mass (*m*/*z*): 476 [M^+].

2-(3-Methylphenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide (**4o**)*. Yield: 66 %; m.p. 147–148 °C; Anal. Calcd. for

2012 Copyright (CC) SCS

$C_{26}H_{25}N_3O_2S_2$: C, 65.65; H, 5.29; N, 8.83 %. Found: C, 65.46; H, 5.20; N, 8.75 %; IR (KBr, cm^{-1}): 679 (C–S–C), 1325 (C–N), 1458 (C=C), 1663 (CO), 1727 (CO cyclic), 1439, 2833, 2917 (CH_2), 2945 (S–CH_2), 3017 (CH–Ar), 2888 (CH_3), 3353 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 1.95 (3H, *s*, CH_3), 2.23–2.27 (2H, *m*, H-12), 3.64 (2H, *s*, H-5"), 3.41–3.48 (2H, *m*, H-13), 4.24 (2H, *t*, *J* = 7.40 Hz, H-11), 5.39 (1H, *s*, H-2"), 5.87 (1H, *s*, H-1'), 6.35–7.82 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 23.8 (CH_3), 35.5 (C-12), 37.6 (C--5"), 44.7 (C-13), 55.6 (C-11), 62.0 (C-2"), 115.0 (C-4 and C-5), 119.5 (C-1 and C-8), 120.3 (C-2 and C-7), 124.8 (C-3 and C-6), 126.3 (C-15), 127.1 (C-19), 127.7 (C-16), 129.3 (C-18), 131.4 (C-17), 136.5 (C-14), 142.7 (C-4a and C-5a), 147.0 (C-1a and C-8a), 160.0 (C-2'), 161.4 (C-4"); FAB mass (*m*/*z*): 476 [M^+].

2-(2-Methylphenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide* (***4p***). Yield: 64 %; m.p. 144–145 °C; Anal. Calcd. for $C_{26}H_{25}N_3O_2S_2$: C, 65.65; H, 5.29; N, 8.83 %. Found: C, 65.40; H, 5.19; N, 8.71 %; IR (KBr, cm^{-1}): 681 (C–S–C), 1324 (C–N), 1457 (C=C), 1663 (CO), 1730 (CO cyclic), 1438, 2834, 2917 (CH_2), 2945 (S–CH_2), 3018 (CH–Ar), 2882 (CH_3), 3354 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.07 (3H, *s*, CH_3), 2.23–2.29 (2H, *m*, H-12), 3.39 (2H, *s*, H-5"), 3.33–3.38 (2H, *m*, H-13), 4.24 (2H, *t*, *J* = 7.40 Hz, H-11), 5.82 (1H, *s*, H-2"), 5.86 (1H, *s*, H-1'), 6.54–7.85 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 22.5 (CH_3), 35.6 (C-12), 37.5 (C--5"), 47.4 (C-13), 54.5 (C-11), 62.2 (C-2"), 117.0 (C-4 and C-5), 119.7 (C-1 and C-8), 121.5 (C-2 and C-7), 122.7 (C-3 and C-6), 126.4 (C-15), 127.4 (C-19), 128.5 (C-16), 129.8 (C-18), 131.1 (C-17), 136.5 (C-14), 139.4 (C-4a and C-5a), 150.0 (C-1a and C-8a), 161.1 (C-2'), 162.8 (C-4"); FAB mass (*m*/*z*): 476 [M^+].

2-(4-Hydroxyphenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide* (***4q***). Yield: 62 %; m.p. 170–172 °C; Anal. Calcd. for $C_{25}H_{23}N_3O_3S_2$: C, 62.87; H, 4.85; N, 8.79 %. Found: C, 62.72; H, 4.81; N, 8.75 %; IR (KBr, cm^{-1}): 687 (C–S–C), 1332 (C–NH), 1460 (C=C), 1666 (CO), 1757 (CO cyclic), 1438, 2838, 2915 (CH_2), 2950 (S–CH_2), 3015 (CH–Ar), 3355 (NH), 3498 (OH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.32–2.36 (2H, *m*, H-12), 3.39 (2H, *s*, H-5"), 3.44–3.50 (2H, *m*, H-13), 4.29 (2H, *t*, *J* = 7.45 Hz, H-8), 4.57 (1H, *s*, OH), 5.35 (1H, *s*, H-2"), 5.87 (1H, *s*, H-1'), 6.36–7.92 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 35.3 (C-12), 37.0 (C-5"), 46.6 (C-13), 52.3 (C-11), 62.0 (C-2"), 118.0 (C-4 and C-5), 119.7 (C-1 and C-8), 125.6 (C-2 and C-7), 127.2 (C-3 and C-6), 128.4 (C-15 and C-19), 130.2 (C-16 and C-18), 131.9 (C-17), 138.9 (C-14), 142.4 (C-4a and C-5a), 154.0 (C-1a and C-8a), 163.9 (C-2'), 162.3 (C-4"); FAB–Mass (*m*/*z*): 478 [M^+].

2-(3-Hydroxyphenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide* (***4r***). Yield: 61 %; m.p. 168–170 °C; Anal. Calcd. for $C_{25}H_{23}N_3O_3S_2$: C, 62.87; H, 4.85; N, 8.79 %. Found: C, 62.75; H, 4.79; N, 8.73 %; IR (KBr, cm^{-1}): 689 (C–S–C), 1335 (C–NH), 1463 (C=C), 1668 (CO), 1752

2012 Copyright (CC) SCS

(CO cyclic), 1434, 2838, 2913 (CH_2), 2957 (S–CH_2), 3013 (CH–Ar), 3358 (NH), 3504 (OH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.36–2.41 (2H, *m*, H-12), 3.45 (2H, *s*, H-5"), 3.43–3.48 (2H, *m*, H-13), 4.32 (2H, *t*, *J* = 7.45 Hz, H-8), 4.50 (1H, *s*, OH), 5.52 (1H, *s*, H-2"), 5.84 (1H, *s*, H-1'), 6.36–7.78 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 32.2 (C-12), 37.6 (C-5"), 41.8 (C-13), 47.5 (C-11), 63.0 (C-2"), 116.0 (C-4 and C-5), 120.1 (C-1 and C-8), 124.7 (C-2 and C-7), 126.8 (C-3 and C-6), 130.3 (C-15), 131.2 (C-19), 132.7 (C-16), 133.4 (C-18), 134.2 (C-17), 140.5 (C-14), 146.8 (C-4a and C-5a), 153.0 (C-1a and C--8a), 160.1 (C-2'), 162.1 (C-4"); FAB–Mass (*m*/*z*): 478 [M^+].

2-(2-Hydroxyphenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide (**4s**)*. Yield: 64 %; m.p. 171–172 °C; Anal. Calcd. for $C_{25}H_{23}N_3O_3S_2$: C, 62.87; H, 4.85; N, 8.79 %. Found: C, 62.81; H, 4.77; N, 8.69 %; IR (KBr, cm^{-1}): 697 (C–S–C), 1329 (C–NH), 1458 (C=C), 1664 (CO), 1751 (CO cyclic), 1432, 2835, 2918 (CH_2), 2953 (S–CH_2), 3019 (CH–Ar), 3351 (NH), 3505 (OH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.30–2.35 (2H, *m*, H-12), 3.33 (2H, *s*, H-5"), 3.47–3.52 (2H, *m*, H-13), 4.35 (2H, *t*, *J* = 7.45 Hz, H-8), 4.52 (1H, *s*, OH), 5.45 (1H, *s*, H-2"), 5.91 (1H, *s*, H-1'), 6.38–7.83 (12H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 36.1 (C-12), 37.6 (C-5"), 46.9 (C-13), 50.5 (C-11), 62.0 (C-2"), 114.0 (C-4 and C-5), 118.4 (C-1 and C-8), 123.8 (C-2 and C-7), 126.3 (C-3 and C-6), 129.5 (C-15), 130.1 (C-19), 130.4 (C-16), 131.4 (C-18), 134.5 (C-17), 140.6 (C-14), 141.5 (C-4a and C-5a), 154.0 (C-1a and C--8a), 159.2 (C-2'), 162.0 (C-4"); FAB–Mass *(m/z):* 478 [M^+].

5-(Benzylidene)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-2-phenyl-3-thiazolidinecarboxamide (**5a**)*. Yield: 64 %; m.p. 145–146 °C; Anal. Calcd. for $C_{32}H_{27}N_3O_2S_2$: C, 69.91; H, 4.95; N, 7.64 %. Found: C, 69.83; H, 4.91; N, 7.61 %; IR (KBr, cm^{-1}): 689 (C–S–C), 1335 (C–N), 1595 (C=C), 1467 (C=CH), 1673 (CO), 1740 (CO cyclic), 2987 (C=CH), 1444, 2845, 2921 (CH_2), 3028 (CH–Ar), 3371 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.18–2.22 (2H, *m*, H-12), 3.45–3.50 (2H, *m*, H-13), 4.33 (2H, *t*, *J* = 7.45 Hz, H-11), 5.25 (1H, *s*, H-2"), 5.90 (1H, *s*, H-1'), 6.45 (1H, *s*, H-20), 6.36–7.85 (18H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 39.4 (C-12), 45.4 (C-13), 52.8 (C-11), 63.4 (C-2"), 114.0 (C-4 and C-5), 118.7 (C-1 and C-8), 123.7 (C-2 and C-7), 124.9 (C-3 and C-6), 125.8 (C-15 and C-19), 126.9 (C-22 and C-26), 127.7 (C-16 and C-18), 128.6 (C--23 and C-25), 129.8 (C-17), 130.7 (C-24), 131.6 (C-14), 141.2 (C-5"), 134.8 (C--21), 139.9 (C-4a and C-5a), 136.0 (C-20), 148.0 (C-1a and C-8a), 163.0 (C-2'), 168.6 (C-4"); FAB mass (*m*/*z*): 550 [M^+].

5-(4-Chlorobenzylidene)-2-(4-chlorophenyl)-4-oxo-N-*[3-(10*H*-phenothiazin--10-yl)propyl]-3-thiazolidinecarboxamide (**5b**)*. Yield: 67 %; m.p.160–162 °C; Anal. Calcd. for $C_{32}H_{25}Cl_2N_3O_2S_2$: C, 62.13; H, 4.07; N, 6.79 %. Found: C, 62.05; H, 4.01; N, 6.73 %; IR (KBr, cm^{-1}): 698, 755 (C–Cl), 1339 (C–N), 1625 (C=CH), 1683 (CO), 1748 (CO cyclic), 3012 (C=CH), 1445, 2855, 2928 (CH_2),

2012 Copyright (CC) SCS

3034 (CH–Ar), 3390 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.32–2.38 (2H, *m*, H-12), 3.65–3.70 (2H, *m*, H-13), 4.38 (2H, *t*, *J* = 7.50 Hz, H-11), 5.96 (1H, *s*, H-1'), 5.30 (1H, *s*, H-2"), 6.74 (1H, *s*, H-20), 6.41–8.15 (16H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 42.6 (C-12), 146.3 (C-5"), 50.7 (C-13), 55.5 (C-11), 66.3 (C-2"), 115.0 (C-4 and C-5), 123.7 (C-1 and C-8), 126.4 (C-2 and C-7), 127.5 (C-3 and C-6), 128.7 (C-15 and C-19), 129.5 (C-22 and C-26), 130.1 (C-16 and C-18), 131.6 (C-23 and C-25), 132.2 (C-17), 133.5 (C-24), 134.0 (C-14), 139.7 (C-21), 140.0 (C-20), 142.3 (C-4a and C-5a), 146.0 (C-1a and C-8a), 165.3 (C-2'), 172.2 (C-4"); FAB mass (*m*/*z*): 618 [M^+].

5-(3-Chlorobenzylidene)-2-(3-chlorophenyl)-4-oxo-N-*[3-(10*H*-phenothiazin--10-yl)propyl]-3-thiazolidinecarboxamide (**5c**)*. Yield: 66 %; m.p. 158–159 °C; Anal. Calcd. for $C_{32}H_{25}Cl_2N_3O_2S_2$: C, 62.13; H, 4.07; N, 6.79 %. Found: C, 62.08; H, 4.03; N, 6.75 %; IR (KBr, cm^{-1}): 696 (C–S–C), 741 (C–Cl), 1342 (C–N), 1622 (C=CH), 1688 (CO), 1747 (CO cyclic), 3009 (C=CH), 1456, 2857, 2932 (CH_2), 3034 (CH–Ar), 3386 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.35––2.40 (2H, *m*, H-12), 3.60–3.67 (2H, *m*, H-13), 4.40 (2H, *t*, *J* = 7.55 Hz, H-11), 6.00 (1H, *s*, H-1'), 5.32 (1H, *s*, H-2"), 6.72 (1H, *s*, H-20), 6.32–7.99 (16H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm) δ: 43.3 (C-12), 146.3 (C-5"), 48.6 (C-13), 55.3 (C-11), 66.7 (C-2"), 113.0 (C-4 and C-5), 122.3 (C-1 and C-8), 125.5 (C-2 and C-7), 126.6 (C-3 and C-6), 127.5 (C-15), 127.9 (C-19), 128.9 (C--22), 129.2 (C-26), 129.4 (C-16), 129.8 (C-18), 130.2 (C-23), 130.7 (C-25), 131.1 (C-17), 131.7 (C-24), 132.5 (C-14), 139.5 (C-21), 141.0 (C-20), 143.3 (C--4a and C-5a), 143.0 (C-1a and C-8a), 168.2 (C-2'), 174.4 (C-4"); FAB mass (*m*/*z*): 618 [M^+].

5-(2-Chlorobenzylidene)-2-(2-chlorophenyl)-4-oxo-N-*[3-(10*H*-phenothiazin--10-yl)propyl]-3-thiazolidinecarboxamide (**5d**)*. Yield: 67 %; m.p. 156–157 °C; Anal. Calcd. for $C_{32}H_{25}Cl_2N_3O_2S_2$: C, 62.13; H, 4.07; N, 6.79 %. Found: C, 62.02; H, 4.04; N, 6.76 %; IR (KBr, cm^{-1}): 739 (C–Cl), 1347 (C–N), 1610 (C=C), 1684 (CO), 1755 (CO cyclic), 2999 (C=CH), 1447, 2852, 2929 (CH_2), 3039 (CH–Ar), 3383 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.37–2.42 (2H, *m*, H-12), 3.59–3.63 (2H, *m*, H-13), 4.43 (2H, *t*, *J* = 7.50 Hz, H-11), 6.07 (1H, *s*, H-1'), 5.34 (1H, *s*, H-2"), 6.73 (1H, *s*, H-20), 6.49–8.14 (16H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 41.3 (C-12), 145.8 (C-5"), 50.7 (C-13), 54.8 (C-11), 65.1 (C-2"), 117.0 (C-4 and C-5), 120.6 (C-1 and C-8), 125.2 (C-2 and C-7), 126.9 (C-3 and C-6), 127.4 (C-15), 127.8 (C-19), 128.4 (C-22), 128.8 (C-26), 129.8 (C-16), 130.0 (C-18), 130.4 (C-23), 130.7 (C-25), 131.6 (C-17), 132.7 (C-24), 133.3 (C-14), 136.9 (C-21), 141.5 (C-20), 141.2 (C-4a and C-5a), 146.0 (C-1a and C-8a), 167.3 (C-2'), 177.8 (C-4"); FAB mass (*m*/*z*): 618 [M^+].

5-(4-Bromobenzylidene)-2-(4-bromophenyl)-4-oxo-N-*[3-(10*H*-phenothiazin--10-yl)propyl]-3-thiazolidinecarboxamide (**5e**)*. Yield: 65 %; m.p. 152–153 °C; Anal. Calcd. for $C_{32}H_{25}Br_2N_3O_2S_2$: C, 54.32; H, 3,56; N, 5.93 %. Found: C,

2012 Copyright (CC) SCS

54.23; H, 3.51; N, 5.88 %; IR (KBr, cm^{-1}): 563 (C–Br), 1610 (C=CH), 1350 (C–H), 1678 (CO), 1745 (CO cyclic), 2995 (C=CH), 1448, 2859, 2935 (CH_2), 3035 (CH–Ar), 3384 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.33–2.37 (2H, *m*, H-12), 3.67–3.71 (2H, *m*, H-13), 4.45 (2H, *t*, *J* = 7.55 Hz, H-11), 6.03 (1H, *s*, H--1'), 5.37 (1H, *s*, H-2"), 6.70 (1H, *s*, H-20), 6.32–8.03 (16H, *m*, Ar–H); ^{13}C--NMR (75 MHz, $CDCl_3$, δ / ppm): 44.2 (C-12), 143.2 (C-5"), 46.6 (C-13), 54.9 (C-11), 65.4 (C-2"), 112.0 (C-4 and C-5), 122.5 (C-1 and C-8), 124.4 (C-2 and C-7), 125.8 (C-3 and C-6), 126.3 (C-15 and C-19), 127.3 (C-22 and C-26), 128.6 (C-16 and C-18), 129.5 (C-23 and C-25), 130.8 (C-17), 131.6 (C-24), 132.8 (C--14), 137.1 (C-21), 139.8 (C-20), 143.6 (C-4a and C-5a), 150.0 (C-1a and C-8a), 165.2 (C-2'), 1174.4 (C-4"); FAB mass (*m*/*z*): 707 [M^+].

5-(3-Bromobenzylidene)-2-(3-bromophenyl)-4-oxo-N-*[3-(10*H*-phenothiazin--10-yl)propyl]-3-thiazolidinecarboxamide (**5f**)*. Yield: 63 %; m.p. 154–156 °C; Anal. Calcd. for $C_{32}H_{25}Br_2N_3O_2S_2$: C, 54.32; H, 3,56; N, 5.93 %. Found: C, 54.27; H, 3.53; N, 5.86 %; IR (KBr, cm^{-1}): 570 (C–Br), 1350 (C–N), 1587 (C=CH), 1681 (CO), 1750 (CO cyclic), 2989 (C=CH), 1453, 2854, 2934 (CH_2), 3045 (CH–Ar), 3381 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.34–2.39 (2H, *m*, H-12), 3.70–3.75 (2H, *m*, H-13), 4.41 (2H, *t*, *J* = 7.60 Hz, H-11), 5.97 (1H, *s*, H-1'), 5.38 (1H, *s*, H-2"), 6.68 (1H, *s*, H-20), 6.22–7.79 (16H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 40.2 (C-12), 144.0 (C-5"), 49.5 (C-13), 56.7 (C-11), 67.5 (C-2"), 113.0 (C-4 and C-5), 119.2 (C-1 and C-8), 127.6 (C-2 and C-7), 128.2 (C-3 and C-6), 129.1 (C-15), 130.2 (C-19), 130.6 (C-22), 131.1 (C-26), 131.6 (C-16), 131.9 (C-18), 132.7 (C-23), 132.9 (C-25), 133.2 (C-17), 133.9 (C-24), 134.7 (C-14), 138.6 (C-21), 138.9 (C-20), 142.9 (C-4a and C-5a), 148.0 (C-1a and C-8a), 167.7 (C-2'), 175.3 (C-4"); FAB mass (*m*/*z*): 707 [M^+].

5-(2-Bromobenzylidene)-2-(2-bromophenyl)-4-oxo-N-*[3-(10*H*-phenothiazin--10-yl)propyl]-3-thiazolidinecarboxamide (**5g**)*. Yield: 64 %; m.p. 151–152 °C; Anal. Calcd. for $C_{32}H_{25}Br_2N_3O_2S_2$: C, 54.32; H, 3,56; N, 5.93 %. Found: C, 54.25; H, 3.52; N, 5.83 %; IR (KBr, cm^{-1}): 577 (C–Br), 1348 (C–NH), 1597 (C=C), 1686 (CO), 1753 (CO cyclic), 2988 (C=CH), 1450, 2855, 2926 (CH_2), 3042 (CH–Ar), 3380 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.36–2.40 (2H, *m*, H-12), 3.72–3.76 (2H, *m*, H-13), 4.42 (2H, *t*, *J* = 7.55 Hz, H-11), 5.98 (1H, *s*, H-1'), 5.40 (1H, *s*, H-2"), 6.65 (1H, *s*, H-20), 6.37–7.88 (16H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 43.7 (C-12), 143.2 (C-5"), 49.4 (C-13), 56.3 (C-11), 67.2 (C-2"), 117.0 (C-4 and C-5), 123.4 (C-1 and C-8), 126.9 (C-2 and C-7), 127.5 (C-3 and C-6), 128.7 (C-15), 129.1 (C-19), 129.5 (C-22), 129.8 (C-26), 130.4 (C-16), 130.8 (C-18), 131.9 (C-23), 132.1 (C-25), 132.5 (C-17), 133.6 (C-24), 134.9 (C-14), 138.7 (C-21), 139.8 (C-20), 144.4 (C-4a and C-5a), 147.0 (C-1a and C-8a), 165.1 (C-2'), 177.3 (C-4"); FAB mass (*m*/*z*): 707 [M^+].

5-(4-Nitrobenzylidene)-2-(4-nitrophenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10--yl)propyl]-3-thiazolidinecarboxamide (**5h**)*. Yield: 70 %; m.p. 149–151 °C;

2012 Copyright (CC) SCS

Anal. Calcd. for $C_{32}H_{25}N_5O_6S_2$: C, 60.08; H, 3,93; N, 10.94 %. Found: C, 60.04; H, 3.89; N, 10.91 %; IR (KBr, cm^{-1}): 695 (C–S–C), 870 (C–NO), 1347 (C–NH), 1521 (N=O), 1588 (C=CH), 1680 (CO), 1754 (CO cyclic), 3014 (C=CH), 1450, 2853, 2933 (CH_2), 3036 (CH–Ar), 3382 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.31–2.36 (2H, *m*, H-12), 3.74–3.80 (2H, *m*, H-13), 4.37 (2H, *t*, *J* = 7.50 Hz, H-11), 6.04 (1H, *s*, H-1'), 5.29 (1H, *s*, H-2"), 6.62 (1H, *s*, H--20), 6.29–797 (16H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 42.9 (C--12), 142.0 (C-5"), 47.3 (C-13), 57.4 (C-11), 64.5 (C-2"), 115.0 (C-4 and C-5), 121.4 (C-1 and C-8), 127.5 (C-2 and C-7), 128.6 (C-3 and C-6), 129.8 (C-15 and C-19), 130.4 (C-22 and C-26), 131.5 (C-16 and C-18), 132.6 (C-23 and C-25), 133.2 (C-17), 134.5 (C-24), 134.9 (C-14), 138.4 (C-21), 139.0 (C-20), 144.2 (C--4a and C-5a), 146.0 (C-1a and C-8a), 168.8 (C-2'), 177.4 (C-4"); FAB mass (*m*/*z*): 639 [M^+].

5-(3-Nitrobenzylidene)-2-(3-nitrophenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10--yl)propyl]-3-thiazolidinecarboxamide (**5i**)*. Yield: 72 %; m.p. 150–151 °C; Anal. Calcd. for $C_{32}H_{25}N_5O_6S_2$: C, 60.08; H, 3,93; N, 10.94 %. Found: C, 60.06; H, 3.90; N, 10.89 %; IR (KBr, cm^{-1}): 679 (C–S–C), 868 (C–NO), 1351 (C–N), 1594 (C=CH), 1511 (N=O), 1685 (CO), 1750 (CO cyclic), 3011 (C=CH), 1449, 2852, 2930 (CH_2), 3041 (CH–Ar), 3384 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.33–2.38 (2H, *m*, H-12), 3.72–3.77 (2H, *m*, H-13), 4.39 (2H, *t*, *J* = 7.50 Hz, H--11), 5.99 (1H, *s*, H-1'), 5.36 (1H, *s*, H-2"), 6.58 (1H, *s*, H-20), 6.38–7.95 (16H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 44.8 (C-12), 144.5 (C-5"), 48.7 (C-13), 57.6 (C-11), 65.5 (C-2"), 114.0 (C-4 and C-5), 121.3 (C-1 and C-8), 125.7 (C-2 and C-7), 126.4 (C-3 and C-6), 127.5 (C-15), 128.2 (C-19), 128.7 (C--22), 129.1 (C-26), 129.6 (C-16), 129.8 (C-18), 130.3 (C-23), 130.8 (C-25), 131.6 (C-17), 132.5 (C-24), 133.6 (C-14), 137.9 (C-21), 140.0 (C-20), 145.5 (C--4a and C-5a), 147.0 (C-1a and C-8a), 166.3 (C-2'), 178.6 (C-4"); FAB mass (*m*/*z*): 639 [M^+].

5-(2-Nitrobenzylidene)-2-(2-nitrophenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10--yl)propyl]-3-thiazolidinecarboxamide (**5j**)*. Yield: 69 %; m.p. 153–155 °C; Anal. Calcd. for $C_{32}H_{25}N_5O_6S_2$: C, 60.08; H, 3,93; N, 10.94 %. Found: C, 60.02; H, 3.88; N, 10.92 %; IR (KBr, cm^{-1}): 697 (C–S–C), 872 (C–NO), 1356 (C–NH), 1509 (N=O), 1584 (C=CH), 1679 (CO), 1751 (CO cyclic), 2980 (C=CH), 1457, 2860, 2931 (CH_2), 3040 (CH–Ar), 3388 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / / ppm): 2.32–2.37 (2H, *m*, H-12), 3.64–3.68 (2H, *m*, H-13), 4.44 (2H, *t*, *J* = 7.55 Hz, H-11), 6.05 (1H, *s*, H-1'), 5.38 (1H, *s*, H-2"), 6.69 (1H, *s*, H-20), 6.31–7.83 (16H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 41.3 (C-12), 145.6 (C--5"), 47.2 (C-13), 57.1 (C-11), 66.5 (C-2"), 113.0 (C-4 and C-5), 120.1 (C-1 and C-8), 126.5 (C-2 and C-7), 127.6 (C-3 and C-6), 128.2 (C-15), 128.9 (C-19), 129.6 (C-22), 129.9 (C-26), 130.1 (C-16), 130.7 (C-18), 131.4 (C-23), 131.8 (C--25), 132.1 (C-17), 133.6 (C-24), 133.8 (C-14), 137.5 (C-21), 140.1 (C-20),

2012 Copyright (CC) SCS

144.7 (C-4a and C-5a), 145.0 (C-1a and C-8a), 168.8 (C-2'), 176.4 (C-4"); FAB mass (*m*/*z*): 639 [M^+].

5-(4-Methoxybenzylidene)-2-(4-methoxyphenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide (**5k**)*. Yield: 63 %; m.p. 146–147 °C; Anal. Calcd. for $C_{33}H_{31}N_3O_2S_2$: C, 66.97; H, 5.12; N, 6.89 %. Found: C, 66.89; H, 5.08; N, 6.82 %; IR (KBr, cm^{-1}): 692 (C–S–C), 1085 (C–O), 1341 (C–N), 1590 (C=CH), 1675 (CO), 1741 (CO cyclic), 2995 (C=CH), 1443, 2846, 2923 (CH_2), 2965 (OCH_3), 3030 (CH–Ar), 3373 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.32–2.36 (2H, *m*, H-12), 3.22 (6H, *s*, 2×OCH_3), 3.64–3.69 (2H, *m*, H--13), 4.35 (2H, *t*, *J* = 7.40 Hz, H-11), 5.27 (1H, *s*, H-2"), 5.95 (1H, *s*, H-1'), 6.66 (1H, *s*, H-20), 6.35–7.68 (16H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 40.3 (C-12), 145.8 (C-5"), 45.3 (C-13), 53.1 (C-11), 52.4 (2×OCH_3), 64.5 (C-2"), 112.0 (C-4 and C-5), 118.9 (C-1 and C-8), 124.3 (C-2 and C-7), 125.1 (C-3 and C-6), 126.1 (C-15 and C-19), 127.7 (C-22 and C-26), 128.6 (C-16 and C-18), 129.5 (C-23 and C-25), 130.1 (C-17), 131.3 (C-24), 131.8 (C-14), 137.2 (C-21), 139.5 (C-20), 141.2 (C-4a and C-5a), 144.0 (C-1a and C-8a), 164.7 (C-2'), 170.5 (C-4"); FAB mass (*m*/*z*): 609 [M^+].

5-(3-Methoxybenzylidene)-2-(3-methoxyphenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide (**5l**)*. Yield: 62 %; m.p. 142–144 °C; Anal. Calcd. for $C_{33}H_{31}N_3O_2S_2$: C, 66.97; H, 5.12; N, 6.89 %. Found: C, 66.86; H, 5.05; N, 6.80 %; IR (KBr, cm^{-1}): 690 (C–S–C), 1089 (C–O), 1346 (C–N), 1594 (C=CH), 1673 (CO), 1744 (CO cyclic), 2982 (C=CH), 1447, 2849, 2925 (CH_2), 2958 (OCH_3), 3033 (CH–Ar), 3377 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.35–2.41 (2H, *m*, H-12), 3.65 (6H, *s*, 2×OCH_3), 3.65–3.73 (2H, *m*, H--13), 4.38 (2H, *t*, *J* = 7.40 Hz, H-11), 5.26 (1H, *s*, H-2"), 5.97 (1H, *s*, H-1'), 6.70 (1H, *s*, H-20), 6.22–7.73 (16H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 44.6 (C-12), 145.2 (C-5"), 48.4 (C-13), 55.8 (C-11), 55.4 (2×OCH_3), 66.8 (C-2"), 113.0 (C-4 and C-5), 119.5 (C-1 and C-8), 123.5 (C-2 and C-7), 124.5 (C-3 and C-6), 125.7 (C-15), 126.4 (C-19), 128.5 (C-22), 128.9 (C-26), 129.4 (C-16), 129.9 (C-18), 130.2 (C-23), 130.8 (C-25), 131.6 (C-17), 132.5 (C-24), 132.9 (C--14), 134.2 (C-21), 137.5 (C-20), 144.7 (C-4a and C-5a), 148.0 (C-1a and C-8a), 166.8 (C-2'), 171.7 (C-4"); FAB mass (*m*/*z*): 609 [M^+].

5-(2-Methoxybenzylidene)-2-(2-methoxyphenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide (**5m**)*. Yield: 61 %; m.p. 148–150 °C; Anal. for Calcd. $C_{33}H_{31}N_3O_2S_2$: C, 66.97; H, 5.12; N, 6.89 %. Found: C, 66.87; H, 5.04; N, 6.79 %; IR (KBr, cm^{-1}): 699 (C–S–C), 1088 (C–O), 1345 (C–N), 1598 (C=CH), 1671 (CO), 1743 (CO cyclic), 2986 (C=CH), 1442, 2845, 2927 (CH_2), 2966 (OCH_3), 3032 (CH–Ar), 3377 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.37–2.44 (2H, *m*, H-12), 3.54 (6H, *s*, 2×OCH_3), 3.69–3.75 (2H, *m*, H--13), 4.38 (2H, *t*, *J* = 7.40 Hz, H-11), 5.31 (1H, *s*, H-2"), 5.97 (1H, *s*, H-1'), 6.45 (1H, *s*, H-20), 6.55–7.92 (16H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm):

2012 Copyright (CC) SCS

41.9 (C-12), 46.2 (C-13), 52.7 (C-11), 56.4 (2×OCH_3), 61.3 (C-2”), 116.0 (C-4 and C-5), 118.3 (C-1 and C-8), 124.9 (C-2 and C-7), 125.4 (C-3 and C-6), 126.7 (C-15), 126.8 (C-19), 127.2 (C-22), 127.8 (C-26), 128.9 (C-16), 129.1 (C-18), 129.4 (C-23), 130.2 (C-25), 131.9 (C-17), 132.7 (C-24), 133.5 (C-14), 134.6 (C--21), 136.5 (C-20), 140.9 (C-4a and C-5a), 142.0 (C-5”), 145.0 (C-1a and C-8a), 163.7 (C-2’), 172.3 (C-4”); FAB mass (*m*/*z*): 609 [M^+].

5-(4-Metylbenzylidene)-2-(4-methylphenyl)-4-oxo-N-*[3-(10*H-*phenothiazin--10-yl)propyl]-3-thiazolidinecarboxamide (**5n**)*. Yield: 62 %; m.p. 136–138 °C; Anal. Calcd. for $C_{34}H_{31}N_3O_2S_2$: C, 70.68; H, 5.40; N, 7.27 %. Found: C, 70.65; H, 4.37; N, 7.21 %; IR (KBr, cm^{-1}): 687 (C–S–C), 1336 (C–N), 1580 (C=CH), 1672 (CO), 1738 (CO cyclic), 2991 (C=CH), 1440, 2842, 2919 (CH_2), 2992 (CH_3), 3027 (CH–Ar), 3370 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.04 (6H, *s*, 2×CH_3), 2.27–2.30 (2H, *m*, H-12), 3.58–3.62 (2H, *m*, H-13), 4.29 (2H, *t*, *J* = 7.45 Hz, H-11), 5.23 (1H, *s*, H-2”), 5.89 (1H, *s*, H-1’), 6.49 (1H, *s*, H-20), 6.42–7.74 (16H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 22.5 (2×CH_3), 39.7 (C-12), 140.2 (C-5”), 45.1 (C-13), 52.4 (C-11), 63.1 (C-2”), 116.0 (C-4 and C-5), 118.5 (C-1 and C-8), 123.4 (C-2 and C-7), 124.7 (C-3 and C-6), 125.3 (C--15 and C-19), 126.6 (C-22 and C-26), 127.1 (C-16 and C-18), 128.0 (C-23 and C-25), 129.5 (C-17), 130.4 (C-24), 131.1 (C-14), 137.5 (C-21), 137.6 (C-20), 139.6 (C-4a and C-5a), 148.0 (C-1a and C-8a), 163.3 (C-2’), 167.5 (C-4”); FAB mass (*m*/*z*): 577 [M^+].

5-(3-Metylbenzylidene)-2-(3-methylphenyl)-4-oxo-N-*[3-(10*H-*phenothiazin--10-yl)propyl]-3-thiazolidinecarboxamide (**5o**)*. Yield: 65 %; m.p. 141–142 °C; Anal. Calcd. for $C_{34}H_{31}N_3O_2S_2$: C, 70.68; H, 5.40; N, 7.27 %. Found: C, 70.61; H, 4.33; N, 7.19 %; IR (KBr, cm^{-1}): 684 (C–S–C), 1332 (C–N), 1586 (C=CH), 1677 (CO), 1740 (CO cyclic), 2989 (C=CH), 1443, 2847, 2915 (CH_2), 2878 (CH_3), 3030 (CH–Ar), 3373 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.00 (6H, *s*, 2×CH_3), 2.26–2.32 (2H, *m*, H-12), 3.55–3.61 (2H, *m*, H-13), 4.25 (2H, *t*, *J* = 7.45 Hz, H-11), 5.21 (1H, *s*, H-2”), 5.86 (1H, *s*, H-1’), 6.42 (1H, *s*, H-20), 6.29-7.71 (16H, *m*, Ar-H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 23.1 (2×CH_3), 37.6 (C-12), 43.5 (C-13), 54.7 (C-11), 65.4 (C-2”), 118.0 (C-4 and C-5), 119.5 (C-1 and C-8), 122.3 (C-2 and C-7), 123.7 (C-3 and C-6), 124.5 (C-15), 124.9 (C-19), 125.2 (C-22), 125.8 (C-26), 126.7 (C-16), 127.1 (C-18), 127.4 (C-23), 127.9 (C-25), 128.7 (C-17), 129.4 (C-24), 130.8 (C-14), 133.2 (C-21), 135.1 (C--20), 138.9 (C-4a and C-5a), 141.1 (C-5”), 151.0 (C-1a and C-8a), 164.6 (C-2’), 168.5 (C-4”); FAB mass (*m*/*z*): 577 [M^+].

5-(2-Metylbenzylidene)-2-(2-methylphenyl)-4-oxo-N-*[3-(10*H-*phenothiazin--10-yl)propyl]-3-thiazolidinecarboxamide (**5p**)*. Yield: 62 %; m.p. 138–139 °C; Anal. Calcd. for $C_{34}H_{31}N_3O_2S_2$: C, 70.68; H, 5.40; N, 7.27 %. Found: C, 70.60; H, 4.31; N, 7.24 %; IR (KBr, cm^{-1}): 686 (C–S–C), 1339 (C–N), 1594 (C=CH), 1674 (CO), 1736 (CO cyclic), 2989 (C=CH), 1443, 2848, 2914 (CH_2), 2875

2012 Copyright (CC) SCS

(CH_3), 3023 (CH–Ar), 3377 (NH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / ppm): 2.05 (6H, *s*, 2×CH_3), 2.24–2.28 (2H, *m*, H-12), 3.53–3.68 (2H, *m*, H-13), 4.30 (2H, *t*, *J* = 7.45 Hz, H-11), 5.25 (1H, *s*, H-2"), 5.83 (1H, *s*, H-1'), 6.39 (1H, *s*, H-20), 6.44–7.80 (16H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 22.1 (2×CH_3), 38.5 (C-12), 45.1 (C-13), 52.9 (C-11), 65.7 (C-2"), 116.0 (C-4 and C-5), 117.4 (C-1 and C-8), 122.5 (C-2 and C-7), 123.6 (C-3 and C-6), 125.4 (C-15), 125.8 (C-19), 126.2 (C-22), 126.9 (C-26), 127.6 (C-16), 127.9 (C-18), 128.3 (C-23), 129.7 (C-25), 130.1 (C-17), 131.9 (C-24), 132.4 (C-14), 136.4 (C-21), 134.6 (C--20), 138.4 (C-4a and C-5a), 142.1 (C-5"), 154.4 (C-1a and C-8a), 161.6 (C-2'), 168.4 (C-4"); FAB mass (*m*/*z*): 577 [M^+].

5-(4-Hydroxybenzylidene)-2-(4-hydroxylphenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide (**5q**)*. Yield: 60 %; m.p. 154–155 °C; Anal. Calcd. for $C_{32}H_{27}N_3O_4S_2$: C, 66.07; H, 4.67; N, 7.22 %. Found: C, 65.97; H, 4.62; N, 7.18 %; IR (KBr, cm^{-1}): 693 (C–S–C), 1134 (C–O), 1344 (C–N), 1602 (C=CH), 1677 (CO), 1743 (CO cyclic), 2981 (C=CH), 1444, 2848, 2925 (CH_2), 3031 (CH–Ar), 3374 (NH), 3487 (OH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / / ppm): 2.33–2.37 (2H, *m*, H-12), 3.75–3.80 (2H, *m*, H-13), 4.35 (2H, *t*, *J* = 7.40 Hz, H-11), 5.85 (1H, *s*, H-1'), 4.52 (2H, *s*, 2×OH), 6.58 (1H, *s*, H-20), 6.32–7.86 (16H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 40.7 (C-12), 142.3 (C--5"), 46.5 (C-13), 53.6 (C-11), 64.2 (C-2"), 115.0 (C-4 and C-5), 119.8 (C-1 and C-8), 124.6 (C-2 and C-7), 125.4 (C-3 and C-6), 126.9 (C-15 and C-19), 127.6 (C-22 and C-26), 128.6 (C-16 and C-18), 129.8 (C-23 and C-25), 130.3 (C-17), 131.7 (C-24), 132.2 (C-14), 137.7 (C-21), 139.2 (C-20), 140.6 (C-4a and C-5a), 155.0 (C-1a and C-8a), 164.1 (C-2'), 171.5 (C-4"); FAB mass (*m*/*z*): 581 [M^+].

5-(3-Hydroxybenzylidene)-2-(3-hydroxylphenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide (**5r**)*. Yield: 63 %; m.p. 158–160 °C; Anal. Calcd. for $C_{32}H_{27}N_3O_4S_2$: C, 66.07; H, 4.67; N, 7.22 %. Found: C, 66.03; H, 4.60; N, 7.16 %; IR (KBr, cm^{-1}): 696 (C–S–C), 1133 (C–O), 1348 (C–N), 1617 (C=CH), 1673 (CO), 1749 (CO cyclic), 2998 (C=CH), 1440, 2847, 2921 (CH_2), 3038 (CH–Ar), 3378 (NH), 3486 (OH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / / ppm): 2.32–2.39 (2H, *m*, H-12), 3.73–3.82 (2H, *m*, H-13), 4.37 (2H, *t*, *J* = 7.40 Hz, H-11), 5.82 (1H, *s*, H-1'), 4.72 (2H, *s*, 2×OH), 6.62 (1H, *s*, H-20), 6.35–7.87 (16H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 40.1 (C-12), 49.3 (C-13), 51.5 (C-11), 65.6 (C-2"), 115.0 (C-4 and C-5), 117.3 (C-1 and C-8), 122.3 (C-2 and C-7), 124.7 (C-3 and C-6), 127.3 (C-15), 127.9 (C-19), 128.9 (C-22), 129.1 (C-26), 129.3 (C-16), 130.4 (C-18), 130.8 (C-23), 131.8 (C-25), 132.4 (C-17), 133.5 (C-24), 135.3 (C-14), 139.3 (C-21), 140.2 (C-20), 143.5 (C-4a and C-5a), 145.2 (C-5"), 153.0 (C-1a and C-8a), 165.1 (C-2'), 171.3 (C-4"); FAB mass (*m*/*z*): 581 [M^+].

5-(2-Hydroxybenzylidene)-2-(2-hydroxylphenyl)-4-oxo-N-*[3-(10*H*-phenothiazin-10-yl)propyl]-3-thiazolidinecarboxamide (**5s**)*. Yield: 60 %; m.p. 162–164 °C;

2012 Copyright (CC) SCS

Anal. Calcd. for $C_{32}H_{27}N_3O_4S_2$: C, 66.07; H, 4.67; N, 7.22 %. Found: C, 66.05; H, 4.59; N, 7.15 %; IR (KBr, cm^{-1}): 695 (C–S–C), 1138 (C–O), 1341 (C–N), 1612 (C=CH), 1674 (CO), 1748 (CO cyclic), 2987 (C=CH), 1449, 2842, 2925 (CH_2), 3037 (CH–Ar), 3378 (NH), 3480 (OH); ^{1}H-NMR (300 MHz, $CDCl_3$, δ / / ppm): 2.31–2.36 (2H, *m*, H-12), 3.72–3.73 (2H, *m*, H-13), 4.38 (2H, *t*, J = 7.40 Hz, H-11), 5.80 (1H, *s*, H-1'), 4.55 (2H, *s*, 2×OH), 6.68 (1H, *s*, H-20), 6.36–7.91 (16H, *m*, Ar–H); ^{13}C-NMR (75 MHz, $CDCl_3$, δ / ppm): 45.8 (C-12), 46.5 (C-13), 55.8 (C-11), 62.9 (C-2"), 114.0 (C-4 and C-5), 116.7 (C-1 and C-8), 122.5 (C-2 and C-7), 123.6 (C-3 and C-6), 126.5 (C-15), 126.8 (C-19), 127.9 (C-22), 128.3 (C-26), 128.6 (C-16), 128.9 (C-18), 129.5 (C-23), 130.2 (C-25), 131.6 (C-17), 132.7 (C-24), 134.6 (C-14), 138.4 (C-21), 139.9 (C-20), 142.4 (C-4a and C-5a), 144.6 (C-5"), 154.5 (C-1a and C-8a), 163.1 (C-2'), 170.2 (C-4"); FAB mass (*m*/*z*): 581 [M^+].

2012 Copyright (CC) SCS