Journal of the Serbian Chemical Society
JSCS@tmf.bg.ac.rs • www.shd.org.rs/JSCS
J. Serb. Chem. Soc. 79 (2) S12–S17 (2014) *Supplementary material*

SUPPLEMENTARY MATERIAL TO

Synthesis and antimicrobial activity of some new *N*-(aryloxoalkyl)-5-arylidenethiazolidine-2,4-diones

ANCA STANA[1]*, BRÎNDUŞA TIPERCIUC[1], MIHAELA DUMA[2], ADRIAN PÎRNĂU[3], PHILIPPE VERITÉ[4] and OVIDIU ONIGA[1]

[1]*Department of Pharmaceutical Chemistry, "Iuliu Haţieganu" University of Medicine and Pharmacy, 12 Ion Creangă Street, 400010 Cluj Napoca, Romania,* [2]*State Veterinary Laboratory for Animal Health and Food Safety, 400572 Cluj-Napoca, Romania,* [3]*National Institute for Research and Development of Isotopic and Molecular Technologies, 400293 Cluj Napoca, Romania and* [4]*University of Medicine and Pharmacy Rouen, Faculty of Pharmacy, Department of Analytical Chemistry, 22 Boulevard Gambetta, F-76183 Rouen Cedex, France*

J. Serb. Chem. Soc. 79 (2) (2014) 115–123

PHYSICAL, ANALYTICAL AND SPECTRAL DATA OF THE PREPARED COMPOUNDS

*5-(2,6-Dichlorobenzylidene)-3-(2-oxo-2-phenylethyl)thiazolidine-2,4-dione (**3a**)*. Yield: 85 %; yellow solid; m.p.: 128–130 °C; Anal. Calcd. for $C_{18}H_{11}Cl_2NO_3S$: C, 55.12; H, 2.83; N, 3.57; S, 8.17 %. Found: C, 55.23; H, 2.91; N, 3.48; S, 8.05 %; IR (ATR, cm^{-1}): 1673 ($C{=}O_{ketone}$), 1695 ($C{=}O_{thiazolidinedione}$), 1738 ($C{=}O_{thiazolidinedione}$); ^{1}H-NMR (500 MHz, DMSO-d_6, δ / ppm): 7.97 (1H, *s*, CH=), 7.76 (2H, *d*, *J* = 7.8 Hz, Ar-H), 7.65 (2H, *d*, *J* = = 8.7 Hz, Ar-H), 7.62 (1H, *t*, *J* = 7.8 Hz, Ar-H), 7.55 (1H, *t*, *J* = 8.7 Hz, Ar-H), 7.53 (2H, *t*, *J* = 7.8 Hz, Ar-H), 5.29 (2H, *s*, CH_2); ^{13}C-NMR (125 MHz, DMSO-d_6, δ / ppm): 185.88 (C=O), 170.13 (C=O), 164.98 (C=O), 133.67 (2C), 132.34 (C), 131.96 (C), 131.73 (CH), 131.23 (CH), 130.63 (C), 129.16 (2CH), 127.52 (2CH), 127.08 (2CH), 123.89 (CH), 50.98 (CH_2); MS (*m*/*z* (relative abundance, %)): 392 (M+1, 100), 393 (M+2, 19.8), 394 (M+3, 62.4), 286 (15.3), 274 (22.7), 233 (39.1), 169 (69.9).

*5-(2,6-Dichlorobenzylidene)-3-[2-(4-methoxyphenyl)-2-oxoethyl]thiazolidine--2,4-dione (**3b**)*. Yield: 93 %; white solid; m.p.: 165–166 °C; Anal. Calcd. for $C_{19}H_{13}Cl_2NO_4S$: C, 54.04; H, 3.10; N, 3.32; S, 7.59 %. Found: C, 54.30; H, 2.98; N, 3.58; S, 7.26 %; IR (ATR, cm^{-1}): 1038, 1254 ($C{-}O_{methoxy}$), 1676 ($C{=}O_{ketone}$), 1698 ($C{=}O_{thiazolidinedione}$), 1735 ($C{=}O_{thiazolidinedione}$); ^{1}H-NMR (500 MHz, DMSO-d_6, δ / ppm): 8.08 (2H, *d*, *J* = 9.0 Hz, Ar-H), 7.97 (1H, *s*,

* Corresponding author. E-mail: teodora_anca@yahoo.com

CH=), 7.66 (2H, *d*, *J* = 8.7 Hz, Ar-H), 7.55 (1H, *t*, *J* = 8.7 Hz, Ar-H), 7.13 (2H, *d*, *J* = 9.0 Hz, Ar-H), 5.29 (2H, *s*, CH_2), 3.89 (3H, *s*, OCH_3); ^{13}C-NMR (125 MHz, DMSO-d_6, δ / ppm): 185.66 (C=O), 170.32 (C=O), 165.41 (C), 164.76 (C=O), 133.87 (2C), 132.62 (C), 131.86 (C), 131.65 (CH), 129.74 (2CH), 129.12 (2CH), 128.34 (C), 123.44 (CH), 111.15 (2CH), 55.69 (CH_3), 50.84 (CH_2); MS (*m*/*z* (relative abundance, %)): 423 (M+1, 100), 424 (M+2, 76), 425 (M+3, 12.1), 391 (39), 316 (18.4), 288 (8.1), 286 (9.2), 260 (45.9).

*5-(2,6-Dichlorobenzylidene)-3-[2-(4-nitrophenyl)-2-oxoethyl]thiazolidine--2,4-dione (**3c**)*. Yield: 69 %; dark brown solid; m.p.: 172–175 °C; Anal. Calcd. for $C_{18}H_{10}Cl_2N_2O_5S$: C, 49.44; H, 2.31; N, 6.41; S, 7.33. Found: C, 49.54; H, 2.12; N, 6.59; S, 7.25; IR (ATR, cm^{-1}): 1324 (NO_2, sym.), 1521 (NO_2, asym.), 1671 (C=O_{ketone}), 1692 (C=$O_{thiazolidinedione}$), 1733 (C=$O_{thiazolidinedione}$); ^{1}H-NMR (500 MHz, DMSO-d_6, δ / ppm): 8.41 (2H, *d*, *J* = 9.0 Hz, Ar-H), 8.32 (2H, *d*, *J* = 9.0 Hz, Ar-H), 7.99 (1H, *s*, CH=), 7.67 (2H, *d*, *J* = 8.7 Hz, Ar-H), 7.55 (1H, *t*, *J* = 8.7 Hz, Ar-H), 5.42 (2H, *s*, CH_2); ^{13}C-NMR (125 MHz, DMSO-d_6, δ / / ppm): 186.21 (C=O), 170.12 (C=O), 164.84 (C=O), 150.42 (C), 140.57 (C), 133.66 (2C), 132.44 (C), 131.81 (CH), 129.89 (2CH), 129.18 (2CH), 128.57 (C), 123.34 (CH), 123.15 (2CH), 50.72 (CH_2); MS (*m*/*z* (relative abundance, %)): 437 (M+1, 100), 438 (M+2, 43.1) 439 (M+3, 25.2), 391 (13), 315 (11.8), 291 (37.5), 286 (9.6), 280 (8.3).

*3-[2-(4-Chlorophenyl)-2-oxoethyl]-5-(2,6-dichlorobenzylidene)thiazolidine--2,4-dione (**3d**)*. Yield: 74 %; brown solid; m.p.: 106–108 °C; Anal. Calcd. for $C_{18}H_{10}Cl_3NO_3S$: C, 50.67; H, 2.36; N, 3.28; S, 7.51 %. Found: C, 50.88; H, 2.22; N, 3.42; S, 7.65 %; IR (ATR, cm^{-1}): 1674 (C=O_{ketone}), 1696 (C=$O_{thiazolidinedione}$), 1731 (C=$O_{thiazolidinedione}$); ^{1}H-NMR (500 MHz, DMSO-d_6, δ / ppm): 7.98 (1H, *s*, CH=), 7.83 (2H, *d*, *J* = 8.9 Hz, Ar-H), 7.68 (2H, *d*, *J* = 8.9 Hz, Ar-H), 7.55 (1H, *t*, *J* = 8.7 Hz, Ar-H), 7.54 (2H, *d*, *J* = 8.7 Hz, Ar-H), 5.32 (2H, *s*, CH_2); ^{13}C-NMR (125 MHz, DMSO-d_6, δ / ppm): 186.34 (C=O), 169.98 (C=O), 164.76 (C=O), 138.34 (C), 133.69 (2C), 133.01 (C), 132.41 (C), 131.60 (CH), 130.38 (C), 130.07 (2CH), 129.32 (2CH), 128.76 (2CH), 123.38 (CH), 50.77 (CH_2); MS (*m*/*z* (relative abundance, %)): 428 (M+1, 100), 429 (M+2, 6.3), 430 (M+3, 32.2), 391 (25.7), 314 (5.9), 288 (18.4), 260 (58.6), 233 (20.6), 168 (72.2).

*4-{2-[5-(2,6-Dichlorobenzylidene)-2,4-dioxothiazolidin-3-yl]acetyl}benzonitrile (**3e**)*. Yield: 51 %; yellow solid; m.p.: 163–164 °C; Anal. Calcd. for $C_{19}H_{10}Cl_2N_2O_3S$: C, 54.69; H, 2.42; N, 6.71; S, 7.68 %. Found: C, 54.98; H, 2.17; N, 6.87; S, 7.77 %; IR (ATR, cm^{-1}): 1681 (C=O_{ketone}), 1699 (C=$O_{thiazolidinedione}$), 1745 (C=$O_{thiazolidinedione}$), 2235 (C≡N); ^{1}H-NMR (500 MHz, DMSO-d_6, δ / ppm): 8.01 (2H, *d*, *J* = 8.6 Hz, Ar-H), 7.99 (2H, *d*, *J* = 8.6 Hz, Ar-H), 7.97 (1H, *s*, CH=), 7.66 (2H, *d*, *J* = 8.7 Hz, Ar-H), 7.54 (1H, *t*, *J* = 8.7 Hz, Ar-H), 5.41 (2H, *s*, CH_2); ^{13}C-NMR (125 MHz, DMSO-d_6, δ / ppm): 186.54

(C=O), 170.89 (C=O), 164.98 (C=O), 135.74 (C), 133.83 (2C), 132.49 (C), 132.01 (2CH), 131.24 (CH), 130.32 (C), 129.19 (2CH), 128.76 (2CH), 123.22 (CH), 116.66 (C≡N), 116.13 (C), 50.79 (CH_2); MS (*m*/*z* (relative abundance, %)): 418 (M+1, 100), 419 (M+2, 23.4), 420 (M+3, 34.1), 391 (11.5), 288 (39.7), 274 (15.6), 161 (44.1).

*5-{2-[5-(2,6-Dichlorobenzylidene)-2,4-dioxothiazolidin-3-yl]acetyl}-2-hydroxybenzamide (**3f**)*. Yield: 53 %; brown solid; m.p.: 116–118 °C; Anal. Calcd. for $C_{19}H_{12}Cl_2N_2O_5S$: C, 50.57; H, 2.68; N, 6.21; S, 7.11 %. Found: C, 50.37; H, 2.61; N, 6.49; S, 7.28 %; IR (ATR, cm^{-1}): 1231 ($C–O_{phenol}$), 1628 ($C=O_{amide}$), 1668 ($C=O_{ketone}$), 1695 ($C=O_{thiazolidinedione}$), 1749 ($C=O_{thiazolidinedione}$), 3417 (OH); ^{1}H-NMR (500 MHz, DMSO-d_6, δ / ppm): 13.87 (1H, *s*, OH), 8.65 (1H, *d*, *J* = 1.1 Hz, Ar-H), 8.44 (1H, *s*, NH amide), 8.11 (1H, *s*, NH amide), 8.03 (1H, *dd*, J_1 = 8.8 Hz, J_2 = 1.1 Hz, Ar-H), 7.98 (1H, *s*, CH=), 7.69 (2H, *d*, *J* = = 8.7 Hz, Ar-H), 7.54 (1H, *t*, *J* = 8.7 Hz, Ar-H,), 7.09 (1H, *d*, *J* = 8.8 Hz, Ar-H), 5.29 (2H, *s*, CH_2); ^{13}C-NMR (125 MHz, DMSO-d_6, δ / ppm): 191.88 (C=O), 175.12 (C=O), 170.45 (C=O), 164.91 (C=O), 157.66 (C–OH), 133.97 (2C), 132.58 (C), 132.09 (CH), 131.67 (CH), 129.99 (C), 129.31 (2CH), 128.77 (CH), 128.22 (C), 123.59 (CH), 122.41 (C), 117.24 (CH), 51.03 (CH_2); MS (*m*/*z* (relative abundance, %)): 452 (M+1, 100), 453 (M+2, 95.9), 454 (M+3, 21), 392 (8.1), 304 (4.8), 289 (3.1).

*5-(2,6-Dichlorobenzylidene)-3-(1-methyl-2-oxo-2-phenylethyl)thiazolidine--2,4-dione (**3g**)*. Yield: 45 %; yellow liquid; m.p.: 16 °C; Anal. Calcd. for $C_{19}H_{13}Cl_2NO_3S$: C, 56.17; H, 3.23; N, 3.45; S, 7.89 %. Found: C, 56.26; H, 3.05; N, 3.72; S, 7.97 %; IR (ATR, cm^{-1}): 1678 ($C=O_{ketone}$), 1702 ($C=O_{thiazolidinedione}$), 1743 ($C=O_{thiazolidinedione}$); ^{1}H-NMR (500 MHz, DMSO-d_6, δ / ppm): 7.98 (1H, *s*, CH=), 7.78 (2H, *d*, *J* = 7.8 Hz, Ar-H), 7.67 (2H, *d*, *J* = 8.7 Hz, Ar-H), 7.61 (1H, *t*, *J* = 7.8 Hz, Ar-H), 7.55 (1H, *t*, *J* = 8.7 Hz, Ar-H), 7.50 (2H, *t*, *J* = 7.8 Hz, Ar-H), 5.58 (1H, *q*, *J* = 6.9 Hz, CH), 1.53 (3H, *d*, *J* = 6.9 Hz, CH_3); ^{13}C-NMR (125 MHz, DMSO-d_6, δ / ppm): 193.24 (C=O), 171.05 (C=O), 163.88 (C=O), 136.80 (C), 133.61 (2C), 132.75 (C), 131.43 (CH), 130.84 (2CH), 129.97 (2CH), 128.56 (C), 126.88 (2CH), 124.78 (CH), 123.12 (CH), 54.13 (CH), 20.92 (CH_3); MS (*m*/*z* (relative abundance, %)): 407 (M+1, 100) 408 (M+2, 90.9), 409 (M+3, 5.5), 391 (14.7), 302 (67.4), 274 (44.2), 231 (56.9), 261 (11.5), 168 (62.9).

*5-(2,6-Dichlorobenzylidene)-3-[2-(naphthalen-2-yl)-2-oxoethyl]thiazolidine--2,4-dione (**3h**)*. Yield: 78 %; white solid; m.p.: 176–178 °C; Anal. Calcd. for $C_{22}H_{13}Cl_2NO_3S$: C, 59.74; H, 2.96; N, 3.17; S, 7.25 %. Found: C, 60.05; H, 2.81; N, 3.25; S, 7.32 %; IR (ATR, cm^{-1}): 1672 ($C=O_{ketone}$), 1705 ($C=O_{thiazolidinedione}$), 1741 ($C=O_{thiazolidinedione}$); ^{1}H-NMR (500 MHz, DMSO-d_6, δ / ppm): 8.90 (1H, *s*, Ar-H), 8.18 (1H, *d*, *J* = 8.0 Hz, Ar-H), 8.10 (1H, *d*, *J* = 8.0 Hz, Ar-H), 8.04 (2H, *t*, *J* = 8.6 Hz, Ar-H), 7.89 (1H, *s*, CH=), 7.74 (1H, *t*, *J* = 8.6

Hz, Ar-H), 7.69 (1H, *t*, *J* = 8.6 Hz, Ar-H), 7.65 (2H, *d*, *J* = 8.7 Hz, Ar-H), 7.55 (1H, *t*, *J* = 8.7 Hz, Ar-H), 5.50 (2H, *s*, CH_2); ^{13}C-NMR (125 MHz, DMSO-d_6, δ / / ppm): 191.79 (C=O), 170.45 (C=O), 164.83 (C=O), 136.68 (C), 135.72 (C), 133.85 (2C), 133.44 (CH), 132.78 (C), 130.25 (CH), 130.11 (CH), 129.77 (CH), 129.17 (2CH), 128.71 (CH), 128.30 (CH), 128.15 (C), 127.74 (CH), 127.68 (CH), 125.27 (CH), 123.29 (CH), 50.39 (CH_2); MS (*m*/*z* (relative abundance, %)): 443 (M+1, 100), 444 (M+2, 43.9), 445 (M+3, 27.4), 297 (21.1), 274 (45.1), 288 (67.4), 168 (33.5).

*5-(4-Methoxybenzylidene)-3-(2-oxo-2-phenylethyl)thiazolidine-2,4-dione (**5a**)*. Yield: 79 %; white solid; m.p. 239–240 °C; Anal. Calcd. for $C_{19}H_{15}NO_4S$: C, 64.58; H, 4.28; N, 3.96; S, 9.07 %. Found: C, 64.73; H, 4.32; N, 4.07; S, 9.41 %; IR (ATR, cm^{-1}): 1031, 1257 (C–$O_{methoxy}$), 1675 (C=O_{ketone}), 1693 (C=$O_{thiazolidinedione}$), 1739 (C=$O_{thiazolidinedione}$); ^{1}H-NMR (500 MHz, DMSO-d_6, δ / ppm): 7.95 (1H, *s*, CH=), 7.73 (2H, *d*, *J* = 7.8 Hz, Ar-H), 7.6 (2H, *d*, *J* = 9.0 Hz, Ar-H), 7.61 (1H, *t*, *J* = 7.8 Hz, Ar-H), 7.52 (2H, *t*, *J* = 7.8 Hz, Ar-H), 7.14 (2H, *d*, *J* = 9.0 Hz, Ar-H), 5.33 (2H, *s*, CH_2), 3.82 (3H, *s*, OCH_3); ^{13}C-NMR (125 MHz, DMSO-d_6, δ / ppm): 189.85 (C=O), 170.33 (C=O), 163.76 (C=O), 162.65 (C), 136.53 (C), 135.87 (C), 131.96 (C), 131.34 (CH), 129.34 (CH), 129.23 (2CH), 127.52 (2CH), 127.04 (2CH), 118.32 (2CH), 56.18 (CH_3), 49.78 (CH_2); MS (*m*/*z* (relative abundance, %)): 354 (M+1, 100), 355 (M+2, 4.1), 356 (M+3, 6), 249 (5.7), 236 (4.9), 165 (60.5), 150 (16.5).

*5-(4-Methoxybenzylidene)-3-(2-(4-methoxyphenyl)-2-oxoethyl)thiazolidine-2,4--dione (**5b**)*. Yield: 95 %; white solid; m.p.: 223–224 °C; Anal. Calcd. for $C_{20}H_{17}NO_5S$: C, 62.65; H, 4.47; N, 3.65; S %, 8.36. Found: C, 62.82; H, 4.27; N, 3.88; S, 8.23 %; IR (ATR, cm^{-1}): 1036, 1255 (C–$O_{methoxy}$), 1683 (C=O_{ketone}), 1701 (C=$O_{thiazolidinedione}$), 1742 (C=$O_{thiazolidinedione}$); ^{1}H-NMR (500 MHz, DMSO-d_6, δ / ppm): 8.05 (2H, *d*, *J* = 9.0 Hz, Ar-H), 7.96 (1H, *s*, CH=), 7.65 (2H, *d*, *J* = 9.0 Hz, Ar-H), 7.14 (2H, *d*, *J* = 9.0 Hz, Ar-H), 7.12 (2H, *d*, *J* = 9.0 Hz, Ar-H), 5.29 (2H, *s*, CH_2), 3.90 (3H, *s*, OCH_3), 3.86 (3H, *s*, OCH_3); ^{13}C-NMR (125 MHz, DMSO-d_6, δ / ppm): 191.09 (C=O), 170.54 (C=O), 163.89 (C=O), 162.42 (C), 160.56 (C), 134.57 (C), 132.47 (C), 130.95 (C), 130.63 (2CH), 129.45 (CH), 129.31 (2CH), 118.62 (2CH), 116.43 (2CH), 56.11 (CH_3), 55.78 (CH_3), 49.95 (CH_2); MS (*m*/*z* (relative abundance, %)): 384 (M+1, 100), 385 (M+2, 2.6), 386 (M+3, 1.7), 277 (95), 269 (84), 250 (2.2).

*5-(4-Methoxybenzylidene)-3-(2-(4-nitrophenyl)-2-oxoethyl)thiazolidine-2,4--dione (**5c**)*. Yield: 92 %; pale yellow solid; m.p.: 227–229 °C; Anal. Calcd. for $C_{19}H_{14}N_2O_6S$: C, 57.28; H, 3.54; N, 7.03; S, 8.05 %. Found: C, 57.03; H, 3.32; N, 7.34; S, 8.22 %; IR (ATR, cm^{-1}): 1037, 1251 (C–$O_{methoxy}$), 1331 (NO_2, *sym*.), 1517 (NO_2, *asym*.), 1687 (C=O_{ketone}), 1704 (C=$O_{thiazolidinedione}$), 1747 (C=$O_{thiazolidinedione}$); ^{1}H-NMR (500 MHz, DMSO-d_6, δ / ppm): 8.41 (2H, *d*, *J* = = 9.0 Hz, Ar-H), 8.34 (2H, *d*, *J* = 9.0 Hz, Ar-H), 7.98 (1H, *s*, CH=), 7.66 (2H, *d*,

J = 9.0 Hz, Ar-H), 7.15 (2H, *d*, *J* = 9.0 Hz, Ar-H), 5.44 (2H, *s*, CH_2), 3.86 (3H, *s*, OCH_3); ^{13}C-NMR (125 MHz, DMSO-d_6, δ / ppm): 186.79 (C=O), 170.53 (C=O), 164.92 (C=O), 162.33 (C), 151.61 (C), 140.77 (C), 133.26 (C), 132.24 (C), 129.81 (2CH), 129.44 (CH), 129.29 (2CH), 123.76 (2CH), 114.99 (2CH), 56.01 (CH_3), 49.98 (CH_2); MS (*m*/*z* (relative abundance, %)): 399 (M+1, 100), 400 (M+2, 9.7), 401 (M+3, 5.7), 276 (3.4), 236 (7.4), 193 (84), 150 (30.3).

*3-[2-(4-Chlorophenyl)-2-oxoethyl]-5-(4-methoxybenzylidene)thiazolidine--2,4-dione (**5d**)*. Yield: 78 %; white solid; m.p.: 239–241 °C; Anal. Calcd. for $C_{19}H_{14}ClNO_4S$: C, 58.84; H, 3.64; N, 3.61; S, 8.27 %. Found: C, 60.12; H, 3.87; N, 3.44; S, 8.46 %; IR (ATR, cm^{-1}): 1041, 1248 (C–$O_{methoxy}$), 1681 (C=O_{ketone}), 1697 (C=$O_{thiazolidinedione}$), 1744 (C=$O_{thiazolidinedione}$); ^{1}H-NMR (500 MHz, DMSO-d_6, δ / ppm): 7.98 (1H, *s*, CH=), 7.70 (2H, *d*, *J* = 8.9 Hz, Ar-H), 7.67 (2H, *d*, *J* = 9.0 Hz, Ar-H), 7.51 (2H, *d*, *J* = 8.9 Hz, Ar-H), 7.14 (2H, *d*, *J* = = 9.0 Hz, Ar-H), 5.34 (2H, *s*, CH_2), 3.83 (3H, *s*, OCH_3); ^{13}C-NMR (125 MHz, DMSO-d_6, δ / ppm): 186.97 (C=O), 169.84 (C=O), 164.63 (C=O), 160.46 (C), 138.65 (C), 133.99 (C), 133.19 (C), 132.58 (C), 130.25 (2CH), 129.32 (CH), 129.12 (2CH), 128.64 (2CH), 118.06 (2CH), 55.87 (CH_3), 50.23 (CH_2); MS (*m*/*z* (relative abundance, %)): 388 (M+1, 100), 389 (M+2, 18.6), 390 (M+3, 53.3), 266 (48.8), 248 (55.7), 236 (9.6), 178 (27.9), 166 (55.1).

*4-{2-[5-(4-methoxybenzylidene)-2,4-dioxothiazolidin-3-yl]acetyl}benzonitrile (**5e**)*. Yield: 53 %; light brown solid; m.p.: 212–214 °C; Anal. Calcd. for $C_{20}H_{14}N_2O_4S$: C, 63.48; H, 3.73; N, 7.40; S, 8.47 %. Found: C, 63.29; H, 3.51; N, 7.48; S, 8.69 %; IR (ATR, cm^{-1}): 1043, 1253 (C–$O_{methoxy}$), 1679 (C=O_{ketone}), 1698 (C=$O_{thiazolidinedione}$), 1748 (C=$O_{thiazolidinedione}$), 2231 (C≡N); ^{1}H-NMR (500 MHz, DMSO-d_6, δ / ppm): 8.02 (2H, *d*, *J* = 8.6 Hz, Ar-H), 7.99 (2H, *d*, *J* = 8.6 Hz, Ar-H), 7.96 (1H, *s*, CH=), 7.61 (2H, *d*, *J* = 9.0 Hz, Ar-H), 7.15 (2H, *d*, *J* = 9.0 Hz, Ar-H), 5.41 (2H, *s*, CH_2), 3.84 (3H, *s*, OCH_3); ^{13}C-NMR (125 MHz, DMSO-d_6, δ / ppm): 186.97 (C=O), 170.34 (C=O), 164.23 (C=O), 160.30 (C), 135.43 (C), 134.08 (C), 132.38 (C), 132.27 (2CH), 129.69 (2CH), 129.41 (CH), 128.99 (2CH), 116.65 (C≡N), 116.14 (C), 114.51 (2CH), 55.89 (CH_3), 50.11 (CH_2); MS (*m*/*z* (relative abundance, %)): 379 (M+1, 100), 380(M+1, 10.1), 381 (M+2, 5.4), 274 (3.8), 193 (87.3), 165 (71.8), 150 (28.5), 121 (12.7).

*2-Hydroxy-5-{2-[5-(4-methoxybenzylidene)-2,4-dioxothiazolidin-3-yl]acetyl}benzamide (**5f**)*. Yield: 62 %; yellow solid; m.p.: 295–296 °C; Anal. Calcd. for $C_{20}H_{16}N_2O_6S$: C, 58.25; H, 3.91; N, 6.79; S, 7.77 %. Found: C, 58.38; H, 3.59; N, 6.69; S, 7.91 %; IR (ATR, cm^{-1}): 1040, 1252 (C–$O_{methoxy}$), 1233 (C–O_{phenol}), 1635 (C=O_{amide}), 1677 (C=O_{ketone}), 1694 (C=$O_{thiazolidinedione}$), 1741 (C=$O_{thiazolidinedione}$), 3411 (OH); ^{1}H-NMR (500 MHz, DMSO-d_6, δ / ppm): 14.01 (1H, *s*, OH), 8.81 (1H, *s*, NH amide), 8.67 (1H, *d*, *J* = 1.1 Hz, Ar-H), 8.20 (1H, *s*, NH amide), 8.07 (1H, *dd*, J_1 = 8.8 Hz, J_2 = 1.1 Hz, Ar-H), 7.98 (1H, *s*,

CH=), 7.66 (2H, *d*, *J* = 9.0 Hz, Ar-H), 7.15 (2H, *d*, *J* = 9.0 Hz, Ar-H), 7.05 (1H, *d*, *J* = 8.8 Hz, Ar-H), 5.28 (2H, *s*, CH_2), 3.86 (3H, *s*, OCH_3); ^{13}C-NMR (125 MHz, DMSO-d_6, δ / ppm): 191.66 (C=O), 174.78 (C=O), 170.23 (C=O), 164.94 (C=O), 160.44 (C), 157.78 (C–OH), 133.98 (C), 132.74 (C), 132.22 (CH), 129.96 (C), 129.63 (CH), 129.35 (2CH), 128.46 (CH), 122.34 (C), 117.71 (CH), 116.38 (2CH), 55.78 (CH_3), 50.03 (CH_2); MS (*m*/*z* (relative abundance, %)): 413 (M+1, 100), 414 (M+2, 13.9), 415 (M+3, 8.8), 391 (10.8), 276 (30.7), 248 (10.1), 266 (37.4), 177 (16.8).

*5-(4-Methoxybenzylidene)-3-(1-methyl-2-oxo-2-phenylethyl)thiazolidine-2,4--dione (**5g**)*. Yield: 64 %; white solid; m.p.: 146–148 °C; Anal. Calcd. for $C_{20}H_{17}NO_4S$: C, 65.38; H, 4.66; N, 3.81; S, 8.73 %. Found: C, 65.56; H, 4.61; N, 3.70; S, 8.87 %; IR (ATR, cm^{-1}): 1035, 1250 (C–$O_{methoxy}$), 1686 (C=O_{ketone}), 1703 (C=$O_{thiazolidinedione}$), 1736 (C=$O_{thiazolidinedione}$); ^{1}H-NMR (500 MHz, DMSO-d_6, δ / ppm): 7.88 (1H, *s*, CH=), 7.70 (2H, *d*, *J* = 7.8 Hz, Ar-H), 7.59 (1H, *t*, *J* = 7.8 Hz, Ar-H), 7.56 (2H, *d*, *J* = 9.0 Hz, Ar-H), 7.49 (2H, *t*, *J* = 7.8 Hz, Ar-H), 7.09 (2H, *d*, *J* = 9.0 Hz, Ar-H), 5.88 (1H, *q*, *J* = 6.9 Hz, CH), 3.82 (3H, *s*, OCH_3), 1.54 (3H, *d*, *J* = 6.9 Hz, CH_3); ^{13}C-NMR (125 MHz, DMSO-d_6, δ / ppm): 188.34 (C=O), 170.95 (C=O), 163.76 (C=O), 160.37 (C), 137.89 (C), 136.46 (C), 132.39 (C), 129.99 (2CH), 129.61 (2CH), 129.43 (CH), 126.67 (2CH), 124.89 (CH), 116.22 (2CH), 56.03 (CH_3), 52.46 (CH), 20.79 (CH_3); MS (*m*/*z* (relative abundance, %)): 368 (M+1, 100), 369 (M+2, 1.4), 370 (M+3, 1.4), 290 (14), 262 (97.9), 237 (17.3), 167 (11.7).

*5-(4-Methoxybenzylidene)-3-[2-(naphthalen-2-yl)-2-oxoethyl]thiazolidine-2,4--dione (**5h**)*. Yield: 81 %; white solid; m.p.: 265–267 °C; Anal. Calcd. for $C_{23}H_{17}NO_4S$: C, 68.47; H, 4.25; N, 3.47; S, 7.95 %. Found: C, 68.61; H, 4.31; N, 3.29; S, 8.12 %; IR (ATR, cm^{-1}): 1038, 1258 (C–$O_{methoxy}$), 1673 (C=O_{ketone}), 1700 (C=$O_{thiazolidinedione}$), 1746 (C=$O_{thiazolidinedione}$); ^{1}H-NMR (500 MHz, DMSO-d_6, δ / ppm): 8.90 (1H, *s*, Ar-H), 8.17 (1H, *d*, *J* = 8.0 Hz, Ar--H), 8.11 (1H, *d*, *J* = 8.0 Hz, Ar-H), 8.03 (2H, *t*, *J* = 8.6 Hz, Ar-H), 7.89 (1H, *s*, CH=), 7.74 (1H, *t*, *J* = 8.6 Hz, Ar-H), 7.69 (1H, *t*, *J* = 8.6 Hz, Ar-H), 7.59 (2H, *d*, *J* = 9.0 Hz, Ar-H), 7.12 (2H, *d*, *J* = 9.0 Hz, Ar-H), 5.45 (2H, *s*, CH_2), 3.85 (3H, *s*, OCH_3); ^{13}C-NMR (125 MHz, DMSO-d_6, δ / ppm): 190.89 (C=O), 170.24 (C=O), 164.88 (C=O), 160.54 (C), 136.57 (C), 135.31 (C), 134.46 (C), 133.40 (C), 132.61 (C), 130.13 (CH), 129.69 (2CH), 129.30 (CH), 129.24 (CH), 128.81 (CH), 128.54 (CH), 128.18 (CH), 127.68 (CH), 124.50 (CH), 116.27 (2CH), 55.29 (CH_3), 50.12 (CH_2); MS (*m*/*z* (relative abundance, %)): 404 (M+1, 100), 405 (M+2, 24.6), 406 (M+3, 10.8), 373 (5.4), 286 (32.4), 250 (7.9), 237 (19.5).