Table 1 The physicochemical, elemental and spectral characteristics of synthesized thiazolidine-2,4-dione derivatives.

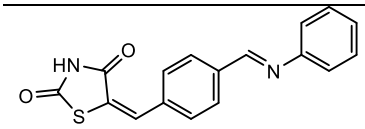
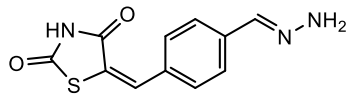
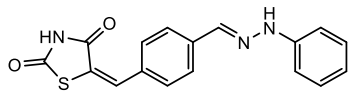
Compound	Physicochemical and spectral characteristics
 (**1**)	*5-((E)-4-((E)-(phenylimino)methyl)benzylidene)thiazolidine-2,4-dione*: m.p. ^{o}C: 260-262; R*f* value: 0.60**; % yield: 80; IR (KBr pellets) cm^{-1}: 3375.41 (N-H str., thiazolidine ring), 1742.41 (C=O str., thiazolidin-2,4-dione ring), 1696.11 (C=N str., imine group), 1414.1 (C=C str., aromatic ring), 1602.13 (C=C str., methylene group), 3044.78 (C-H str., aromatic ring), 2919.12 (C-H str., aliphatic), 1317.75 (C-N str., thiazolidine ring), 614.77 (C-S bend., thiazolidine ring); ^{1}H-NMR (δ, DMSO): 6.52-7.75 (m, 9H, Ar-H), 7.77 (s, 1H, -CH=), 8.71(s, 1H, CH=N), 12.49 (s, 1H, NH); M. Formula: $C_{17}H_{12}N_2O_2S$; MS: *m/z* 308 (M^+); Elemental analysis (CHN) Theoretical calc: C, 66.22; H, 3.92; N, 9.08 Found: C, 66.25; H, 3.90; N, 9.09
 (**2**)	*5-((E)-4-((E)-hydrazonomethyl)benzylidene)thiazolidine-2,4-dione:* m.p. ^{o}C: 220-222; R*f* value: 0.74$^{\$}$; % yield: 60; IR (KBr pellets) cm^{-1}: 1740.11 (C=O str., thiazolidin-2,4-dione ring), 1682.74 (C=N str., imine group), 1412.68 (C=C str., aromatic ring), 1615.22 (C=C str., methylene group), 3197.24 (C-H str., aromatic ring), 2922.17 (C-H str., aliphatic), 1224.86 (C-N str., thiazolidine ring), 618.11 (C-S bend., thiazolidine ring); ^{1}H-NMR (δ, DMSO): 6.58-7.79 (m, 4H, Ar-H), 7.81 (s, 1H, -CH=), 8.68(s, 1H, CH=N), 1.92 (s, 2H, NH_2), 12.49 (s, 1H, NH); M. Formula: $C_{11}H_9N_3O_2S$; Elemental analysis (CHN) Theoretical calc: C, 53.43; H, 3.67; N, 16.99 Found: C, 53.45; H, 3.68; N, 16.95
 (**3**)	*5-((E)-4-((E)-(2-phenylhydrazono)methyl)benzylidene)thiazolidine-2,4-dione*: m.p. ^{o}C: 308-310; R*f* value: 0.8$^{\$\$}$; % yield: 78; IR (KBr pellets) cm^{-1}: 3441.91 (N-H str., phenyl hydrazine group), 3286.35 (N-H str., thiazolidine ring), 1726.16 (C=O str., thiazolidin-2,4-dione ring), 1677.76 (C=N str., imine group), 1413.66 (C=C str., aromatic ring), 1584.3 (C=C str., methylene group), 3043.30 (C-H str., aromatic ring), 1328.68 (C-N str., thiazolidine ring), 613.72 (C-S bend., thiazolidine ring); ^{1}H-NMR (δ, DMSO): 6.77-7.79 (m, 4H, Ar-H), 7.80 (s, 1H, -CH=), 7.88(s, 1H, CH=N), 10.61 (s, 1H, NH adjacent to phenyl ring), 12.49 (s, 1H, NH of thiazolidine ring); M. Formula: $C_{17}H_{13}N_3O_2S$; MS: *m/z* 323.9 (M^++1), 321.9 (M^+-1); Elemental analysis (CHN) Theoretical calc: C, 63.14; H, 4.05; N, 12.99 Found: C, 63.16; H, 4.05; N, 12.98

Table 1 Contd..

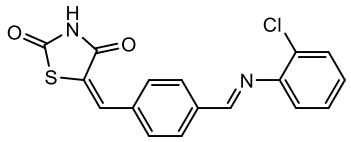
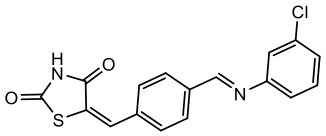
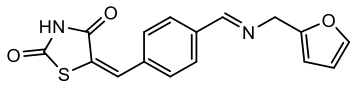
 (**4**)	*5-((E)-4-((E)-((2-chlorophenyl)imino)methyl)benzylidene)thiazolidine-2,4-dione*: m.p. ^{o}C: 292-294; R*f* value: 0.71[$$]; % yield: 70; IR (KBr pellets) cm^{-1}: 3381.37 (N-H str., thiazolidine ring), 1741.97 (C=O str., thiazolidin-2,4-dione ring), 1694.84 (C=N str., imine group), 1505.9 (C=C str., aromatic ring), 1606.57 (C=C str., methylene group), 3044.79 (C-H str., aromatic ring), 2978.2 (C-H str., aliphatic), 1305.25 (C-N str., thiazolidine ring), 606.87 (C-S bend., thiazolidine ring), 750.70 (C-Cl bend., o-substitution on phenyl ring); ^{1}H NMR (δ, DMSO): 6.77-7.79 (m, 4H, Ar-H), 7.80 (s, 1H, -CH=), 7.88(s, 1H, CH=N), 10.61 (s, 1H, NH adjacent to phenyl ring), 12.49 (s, 1H, NH of thiazolidine ring); M. Formula: $C_{17}H_{11}ClN_2O_2S$; Elemental analysis (CHN) Theoretical calc: C, 59.56; H, 3.23; N, 8.17 Found: C, 59.60; H, 3.25; N, 8.12
 (**5**)	*5-((E)-4-((E)-((3-chlorophenyl)imino)methyl)benzylidene) thiazolidine-2,4-dione*: m.p. ^{o}C: 280-282; R*f* value: 0.73[$$]; % yield: 75; IR (KBr pellets) cm^{-1}: 3381.59 (N-H str., thiazolidine ring), 1741.81 (C=O str., thiazolidin-2,4-dione ring), 1695.1 (C=N str., imine group), 1479.44 (C=C str., aromatic ring), 1596.41 (C=C str., methylene group), 3050.78 (C-H str., aromatic ring), 2978.82 (C-H str., aliphatic), 1308.79 (C-N str., thiazolidine ring), 594.24 (C-S bend., thiazolidine ring), 777.34 (C-Cl bend., m-substitution on phenyl ring); ^{1}H NMR (δ, DMSO): 7.23-8.07 (m, 8H, Ar-H), 7.81 (s, 1H, -CH=), 8.68 (s, 1H, CH=N), 12.58 (s, 1H, NH); M. Formula: $C_{17}H_{11}ClN_2O_2S$; MS: *m/z* 341.43 (M^{+}-1); Elemental analysis (CHN) Theoretical calc: C, 59.56; H, 3.23; N, 8.17 Found: C, 59.62; H, 3.23; N, 8.18
 (**6**)	*5-((E)-4-((E)-((furan-2-ylmethyl)imino)methyl)benzylidene) thiazolidine-2,4-dione*: m.p. ^{o}C: 92-94; R*f* value: 0.71[*]; % yield: 70; IR IR (KBr pellets) cm^{-1}: 3328.11 (N-H str., thiazolidine ring), 1694.77 (C=O str., thiazolidin-2,4-dione ring), 1610.48 (C=N str., imine group), 1423.16 (C=C str., aromatic ring), 1548.31 (C=C str., methylene group), 3045.54 (C-H str., aromatic ring), 2975.08 (C-H str., aliphatic), 1306.66 (C-N str., thiazolidine ring), 603.55 (C-S bend., thiazolidine ring), 1159.90 (C-C str.), 1012.66 (C-O-C str., furan ring); ^{1}H NMR (δ, DMSO): 7.18-7.88 (m, 4H, Ar-H), 7.78 (s, 1H, -CH=), 8.76 (s, 1H, CH=N), 12.48 (s, 1H, NH), 4.77 (d, 2H, -CH_2 adjacent to furan ring), 6.30 (d, 1H, CH of furan ring at 3rd position), 6.42 (t, 1H, CH of furan ring at 4th position), 7.47 (d, 1H, CH of furan ring adjacent to O); M. Formula: $C_{16}H_{12}N_2O_3S$; MS: *m/z* 313.16 (M^{+}+1); Elemental analysis (CHN) Theoretical calc: C, 61.53; H, 3.87; N, 8.97 Found: C, 61.55; H, 3.90; N, 8.95

Table 1 Contd..

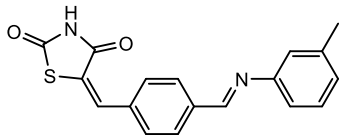
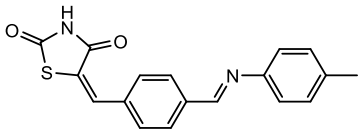
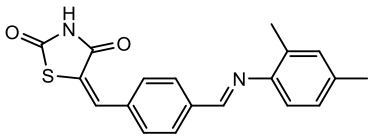
 (**7**)	*5-((E)-4-((E)-(m-tolylimino)methyl)benzylidene)thiazolidine-2,4-dione*: m.p. ^{o}C: 90-92; R*f* value: 0.81*; % yield: 65; IR (KBr pellets) cm^{-1}: 3378.54 (N-H str., thiazolidine ring), 1743.48 (C=O str., thiazolidin-2,4-dione ring), 1691.85 (C=N str., imine group), 1487.15 (C=C str., aromatic ring), 1602.26 (C=C str., methylene group), 3036.12 (C-H str., aromatic ring), 2967.46 (C-H str., aliphatic), 1321.95 (C-N str., thiazolidine ring), 597.53 (C-S bend., thiazolidine ring), 1154.43 (C-C str.); ^{1}H NMR (δ, DMSO): 7.08-8.06 (m, 8H, Ar-H), 7.62 (s, 1H, -CH=), 8.43 (s, 1H, CH=N), 12.34 (s, 1H, NH), 2.14(s, 3H, CH_3); M. Formula: $C_{18}H_{14}N_2O_2S$; MS: *m/z* 320.96 (M^+-1); Elemental analysis (CHN) Theoretical calc: C, 67.06; H, 4.38; N, 8.69 Found: C, 67.09; H, 4.39; N, 8.71
 (**8**)	*5-((E)-4-((E)-(p-tolylimino)methyl)benzylidene)thiazolidine-2,4-dione*: m.p. ^{o}C: 160-162; R*f* value: 0.84*; % yield: 75; IR (KBr pellets) cm^{-1}: 3375.37 (N-H str., thiazolidine ring), 1744.26 (C=O str., thiazolidin-2,4-dione ring), 1695.41 (C=N str., imine group), 1507.28 (C=C str., aromatic ring), 1604.31 (C=C str., methylene group), 3162.34 (C-H str., aromatic ring), 3048.39 (C-H str., aliphatic), 1330.13 (C-N str., thiazolidine ring), 607.48 (C-S bend., thiazolidine ring), 1155.49 (C-C str.); ^{1}H NMR (δ, DMSO): 6.80-8.06 (m, 8H, Ar-H), 7.72 (s, 1H, -CH=), 8.71 (s, 1H, CH=N), 12.32 (s, 1H, NH), 2.33(s, 3H, CH_3); M. Formula: $C_{18}H_{14}N_2O_2S$; MS: *m/z* 322.01 (M^+); Elemental analysis (CHN) Theoretical calc: C, 67.06; H, 4.38; N, 8.69 Found: C, 67.11; H, 4.39; N, 8.65
 (**9**)	*5-((E)-4-((E)-((2,4-dimethylphenyl)imino)methyl)benzylidene) thiazolidine-2,4-dione*: m.p. ^{o}C: 134-136; R*f* value: 0.81*; % yield: 65; IR (KBr cm^{-1}): 3398.47 (N-H str., thiazolidine ring), 1744.74 (C=O str., thiazolidin-2,4-dione ring), 1699.13 (C=N str., imine group), 1498.40 (C=C str., aromatic ring), 1601.47 (C=C str., methylene group), 3012.68 (C-H str., aromatic ring), 2973.04 (C-H str., aliphatic), 1291.9 (C-N str., thiazolidine ring), 605.41 (C-S bend., thiazolidine ring), 1152.01 (C-C str.); ^{1}H NMR (δ, DMSO): 7.02-8.06 (m, 7H, Ar-H), 7.82 (s, 1H, -CH=), 8.58 (s, 1H, CH=N), 12.12 (s, 1H, NH), 2.28(s, 3H, CH_3 o-position), 2.29(s, 3H, CH_3 p-position); M. Formula: $C_{19}H_{16}N_2O_2S$; MS: *m/z* 334.99 (M^+-1); Elemental analysis (CHN) Theoretical calc: C, 67.84; H, 4.79; N, 8.33 Found: C, 67.87; H, 4.79; N, 8.36

Table 1 Contd..

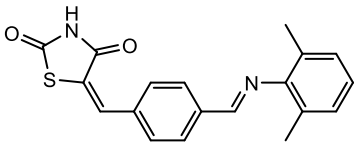
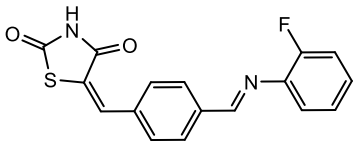
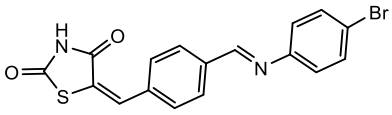
 (**10**)	*5-((E)-4-((E)-((2,6-dimethylphenyl)imino)methyl)benzylidene) thiazolidine-2,4-dione*: m.p. ^{o}C: 100-102; R*f* value: 0.73*; % yield: 60; IR (KBr cm^{-1}): 3394.22 (N-H str., thiazolidine ring), 1744.97 (C=O str., thiazolidin-2,4-dione ring), 1702.53 (C=N str., imine group), 1470.88 (C=C str., aromatic ring), 1602.92 (C=C str., methylene group), 3032.72 (C-H str., aromatic ring), 2971.09 (C-H str., aliphatic), 1294.35 (C-N str., thiazolidine ring), 606.56 (C-S bend., thiazolidine ring), 1159.9 (C-C str.); ^{1}H NMR (δ, DMSO): 6.77-8.10 (m, 7H, Ar-H), 7.84 (s, 1H, -CH=), 8.42 (s, 1H, CH=N), 12.32 (s, 1H, NH), 2.08(s, 6H, $CH_{3\ o}$-position); M. Formula: $C_{19}H_{16}N_2O_2S$; MS: *m/z* 334.98 (M^{+}-1), 337 (M^{+}+1); Elemental analysis (CHN) Theoretical calc: C, 67.84; H, 4.79; N, 8.33 Found: C, 67.85; H, 4.79; N, 8.36
 (**11**)	*5-((E)-4-((E)-((2-fluorophenyl)imino)methyl)benzylidene) thiazolidine-2,4-dione*: m.p. ^{o}C: 108-110; R*f* value: 0.69*; % yield: 75; IR (KBr cm^{-1}): 3429.95 (N-H str., thiazolidine ring), 1745.15 (C=O str., thiazolidin-2,4-dione ring), 1695.31 (C=N str., imine group), 1492.16 (C=C str., aromatic ring), 1604.74 (C=C str., methylene group), 3051.62 (C-H str., aromatic ring), 2979.31 (C-H str., aliphatic), 1323.63 (C-N str., thiazolidine ring), 606.47 (C-S bend., thiazolidine ring), 1158.78 (C-C str.), 1009.17 (C-F bend., o-substitution on phenyl ring); ^{1}H NMR (δ, DMSO): 7.26-7.76 (m, 8H, Ar-H), 7.83 (s, 1H, -CH=), 8.68 (s, 1H, CH=N), 12.51 (s, 1H, NH); M. Formula: $C_{17}H_{11}N_2O_2SF$; MS: *m/z* 327.05 (M^{+}+1); Elemental analysis (CHN) Theoretical calc: C, 62.57; H, 3.40; N, 8.58 Found: C, 62.60; H, 3.41; N, 8.60
 (**12**)	*5-((E)-4-((E)-((3-bromophenyl)imino)methyl)benzylidene) thiazolidine-2,4-dione*: m.p. ^{o}C: 98-100; R*f* value: 0.82*; % yield: 80; IR (KBr cm^{-1}): 3437.95 (N-H str., thiazolidine ring), 1744.75 (C=O str., thiazolidin-2,4-dione ring), 1698.27 (C=N str., imine group), 1484.71 (C=C str., aromatic ring), 1606.87 (C=C str., methylene group), 3052.46 (C-H str., aromatic ring), 2976.98 (C-H str., aliphatic), 1328.18 (C-N str., thiazolidine ring), 606.38 (C-S bend., thiazolidine ring), 1161.85 (C-C str.), 637.54 (C-Br bend., p-substitution on phenyl ring); ^{1}H NMR (δ, DMSO): 7.03-8.12 (m, 8H, Ar-H), 7.78 (s, 1H, -CH=), 8.72 (s, 1H, CH=N), 12.64 (s, 1H, NH); M. Formula: $C_{17}H_{11}N_2O_2SBr$; Elemental analysis (CHN) Theoretical calc: C, 52.73; H, 2.86; N, 7.23 Found: C, 52.75; H, 2.87; N, 7.23

Table 1 Contd..

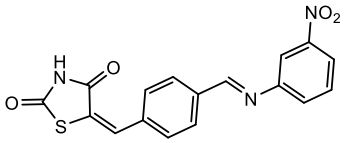
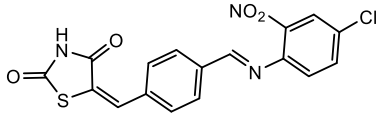
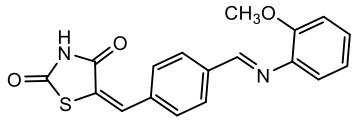
 (**13**)	*5-((E)-4-((E)-((3-nitrophenyl)imino)methyl)benzylidene)thiazolidine-2,4-dione*: m.p. ^{o}C: 128-130; R*f* value: 0.79*; % yield: 80; IR (KBr cm^{-1}): 3379.48 (N-H str., thiazolidine ring), 1747.82 (C=O str., thiazolidin-2,4-dione ring), 1700.55 (C=N str., imine group), 1522.68 (C=C str., aromatic ring), 1600.01 (C=C str., methylene group), 3034.11 (C-H str., aromatic ring), 2928.16 (C-H str., aliphatic), 1347.29 (C-N str., thiazolidine ring), 606.91 (C-S bend., thiazolidine ring), 1153.91 (C-C str.), 1208.69 (N-O str., m-substitution on phenyl ring), 1413.00 (N=O str., m-substitution on phenyl ring); ^{1}H NMR (δ, DMSO): 7.23-8.09 (m, 8H, Ar-H), 7.77 (s, 1H, -CH=), 8.80 (s, 1H, CH=N), 12.67 (s, 1H, NH); M. Formula: $C_{17}H_{11}N_3O_4S$; MS: *m/z* 352.04 (M^{+}-1); Elemental analysis (CHN) Theoretical calc: C, 57.79; H, 3.14; N, 11.89 Found: C, 57.82; H, 3.15; N, 11.91
 (**14**)	*5-((E)-4-((E)-((4-chloro-2-nitrophenyl)imino)methyl)benzylidene) thiazolidine-2,4-dione*: m.p. ^{o}C: 92-94; R*f* value: 0.81*; % yield: 75; IR (KBr cm^{-1}): 3356. 19 (N-H str., thiazolidine ring), 1747.59 (C=O str., thiazolidin-2,4-dione ring), 1700.69 (C=N str., imine group), 1502.15 (C=C str., aromatic ring), 1602.45 (C=C str., methylene group), 3030.51 (C-H str., aromatic ring), 2926.60 (C-H str., aliphatic), 1338.08 (C-N str., thiazolidine ring), 607.48 (C-S bend., thiazolidine ring), 1160.38 (C-C str.), 1249.21 (N-O str., o-substitution on phenyl ring), 1456.19 (N=O str., o-substitution on phenyl ring), 764.11 (C-Cl bend., p-substitution on phenyl ring); ^{1}H NMR (δ, DMSO): 7.03-8.01 (m, 7H, Ar-H), 7.73 (s, 1H, -CH=), 8.03 (s, 1H, CH=N), 12.70 (s, 1H, NH); M. Formula: $C_{17}H_{10}N_3O_4SCl$; Elemental analysis (CHN) Theoretical calc: C, 52.65; H, 2.60; N, 10.84 Found: C, 52.67; H, 2.60; N, 10.87
 (**15**)	*5-((E)-4-((E)-((2-methoxyphenyl)imino)methyl)benzylidene) thiazolidine-2,4-dione*: m.p. ^{o}C: 104-106; R*f* value: 0.81*; % yield: 70; IR (KBr cm^{-1}): 3396.28 (N-H str., thiazolidine ring), 1744.31 (C=O str., thiazolidin-2,4-dione ring), 1702.51 (C=N str., imine group), 1504.09 (C=C str., aromatic ring), 1602.96 (C=C str., methylene group), 3050.93 (C-H str., aromatic ring), 2930.71 (C-H str., aliphatic), 1293.57 (C-N str., thiazolidine ring), 606.45 (C-S bend., thiazolidine ring), 1161.16 (C-C str.), 1018.82 (O-CH_3 str., o-substitution on phenyl ring); ^{1}H NMR (δ, DMSO): 6.75-7.72 (m, 8H, Ar-H), 7.78 (s, 1H, -CH=), 8.58 (s, 1H, CH=N), 12.61 (s, 1H, NH), 3.77 (s, 3H, OCH_3); M. Formula: $C_{18}H_{14}N_2O_3S$; MS: *m/z* 339.12 (M^{+}+1); Elemental analysis (CHN) Theoretical calc: C, 63.89; H, 4.17; N, 8.28 Found: C, 63.91; H, 4.17; N, 8.33

Table 1 Contd..

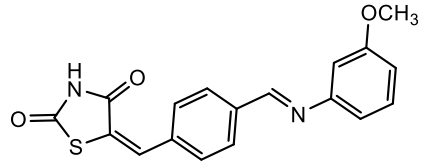
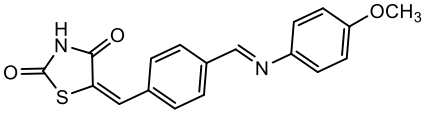
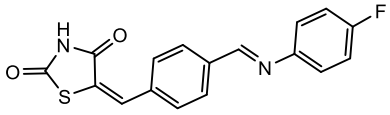
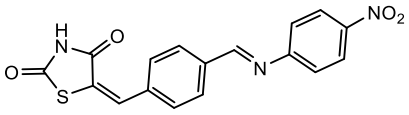
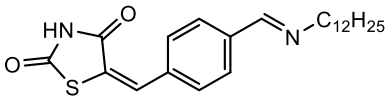
 (**16**)	*5-((E)-4-((E)-((3-methoxyphenyl)imino)methyl)benzylidene) thiazolidine-2,4-dione*: m.p. ^{o}C: 176-178; R*f* value: 0.82*; % yield: 65; IR (KBr cm^{-1}): 3380.83 (N-H str., thiazolidine ring), 1742.00 (C=O str., thiazolidin-2,4-dione ring), 1696.51 (C=N str., imine group), 1498.71 (C=C str., aromatic ring), 1601.06 (C=C str., methylene group), 2926.44 (C-H str., aliphatic), 1321.31 (C-N str., thiazolidine ring), 605.30 (C-S bend., thiazolidine ring), 1155.65 (C-C str.), 1029.32 (O-CH_3 str., m-substitution on phenyl ring); ^{1}H NMR (δ, DMSO): 6.58-8.05 (m, 8H, Ar-H), 7.73 (s, 1H, -CH=), 8.68 (s, 1H, CH=N), 12.32 (s, 1H, NH), 3.85(s, 3H, OCH_3); M. Formula: $C_{18}H_{14}N_2O_3S$; MS: *m/z* 338.8 (M^{+}+1); Elemental analysis (CHN) Theoretical calc: C, 63.89; H, 4.17; N, 8.28 Found: C, 63.92; H, 4.17; N, 8.31
 (**17**)	*5-((E)-4-((E)-((4-methoxyphenyl)imino)methyl)benzylidene) thiazolidine-2,4-dione*: m.p. ^{o}C: 130-132; R*f* value: 0.77*; % yield: 75; IR (KBr cm^{-1}): 3444.26 (N-H str., thiazolidine ring), 1743.88 (C=O str., thiazolidin-2,4-dione ring), 1702.79 (C=N str., imine group), 1505.14 (C=C str., aromatic ring), 1614.33 (C=C str., methylene group), 3065.92 (C-H str., aromatic ring), 2926.15 (C-H str., aliphatic), 1291.79 (C-N str., thiazolidine ring), 606.22 (C-S bend., thiazolidine ring), 1155.22 (C-C str.), 1024.26 (O-CH_3 str., o-substitution on phenyl ring); ^{1}H NMR (δ, DMSO): 6.98-8.04 (m, 8H, Ar-H), 7.78 (s, 1H, -CH=), 8.71 (s, 1H, CH=N), 12.42 (s, 1H, NH), 3.78(s, 3H, OCH_3); M. Formula: $C_{18}H_{14}N_2O_3S$; MS: *m/z* 338.98 (M^{+}+1); Elemental analysis (CHN) Theoretical calc: C, 63.89; H, 4.17; N, 8.28 Found: C, 63.93; H, 4.17; N, 8.30
 (**18**)	*5-((E)-4-((E)-((4-fluorophenyl)imino)methyl)benzylidene) thiazolidine-2,4-dione*: m.p. ^{o}C: 104-106; R*f* value: 0.83*; % yield: 70; IR (KBr cm^{-1}): 3431.86 (N-H str., thiazolidine ring), 1743.59 (C=O str., thiazolidin-2,4-dione ring), 1697.01 (C=N str., imine group), 1501.17 (C=C str., aromatic ring), 1612.03 (C=C str., methylene group), 3039.20 (C-H str., aromatic ring), 2925.63 (C-H str., aliphatic), 1292.50 (C-N str., thiazolidine ring), 604.82 (C-S bend., thiazolidine ring), 1152.02 (C-C str.), 1012.73 (C-F str., p-substitution on phenyl ring); ^{1}H NMR (δ, DMSO): 6.77-7.78 (m, 8H, Ar-H), 7.77 (s, 1H, -CH=), 7.87 (s, 1H, CH=N), 12.60 (s, 1H, NH); M. Formula: $C_{17}H_{11}N_2O_2SF$; MS: *m/z* 324.85 (M^{+}-1); Elemental analysis (CHN) Theoretical calc: C, 62.57; H, 3.40; N, 8.58 Found: C, 62.58; H, 3.40; N, 8.59

Table 1 Contd..

 (**19**)	*5-((E)-4-((E)-((4-nitrophenyl)imino)methyl)benzylidene)thiazolidine-2,4-dione*: m.p. ^{o}C: 118-120; R*f* value: 0.83[*]; % yield: 75; IR (KBr cm^{-1}): 3369.56 (N-H str., thiazolidine ring), 1743.23 (C=O str., thiazolidin-2,4-dione ring), 1698.03 (C=N str., imine group), 1503.33 (C=C str., aromatic ring), 1601.16 (C=C str., methylene group), 3052.03 (C-H str., aromatic ring), 2925.51 (C-H str., aliphatic), 1310.97 (C-N str., thiazolidine ring), 608.61 (C-S bend., thiazolidine ring), 1163.00 (C-C str.), 1212.91 (N-O str., p-substitution on phenyl ring), 1412.67 (N=O str., p-substitution on phenyl ring); ^{1}H NMR (δ, DMSO): 6.60-8.28 (m, 8H, Ar-H), 7.78 (s, 1H, -CH=), 8.72 (s, 1H, CH=N), 12.62 (s, 1H, NH); M. Formula: $C_{17}H_{11}N_3O_4S$; Elemental analysis (CHN) Theoretical calc: C, 57.79; H, 3.14; N, 11.89 Found: C, 57.80; H, 3.14; N, 11.88
 (**20**)	*5-((E)-4-((E)-(dodecylimino)methyl)benzylidene)thiazolidine-2,4-dione*: m.p. ^{o}C: 106-108; R*f* value: 0.43[*]; % yield: 60; IR (KBr cm^{-1}): 3339.52 (N-H str., thiazolidine ring), 1699.02 (C=O str., thiazolidin-2,4-dione ring), 1608.43 (C=N str., imine group), 1461.90 (C=C str., aromatic ring), 1562.34 (C=C str., methylene group), 3047.23 (C-H str., aromatic ring), 2923.03 (C-H str., aliphatic), 1296.98 (C-N str., thiazolidine ring), 608.00 (C-S bend., thiazolidine ring), 1165.06 (C-C str.); ^{1}H NMR (δ, DMSO): 7.28-7.98 (m, 4H, Ar-H), 7.78 (s, 1H, -CH=), 8.35 (s, 1H, CH=N), 12.62 (s, 1H, NH), 1.23-1.69 (m, 20H, CH_2), 0.84 (t, *J* = 9.00 Hz, 3H, CH_3), 3.66 (m, 2H, CH_2 adjacent to CH=N); M. Formula: $C_{23}H_{32}N_2O_2S$; MS: *m/z* 401.12 (M^{+}+1), 399.09 (M^{+}-1); Elemental analysis (CHN) Theoretical calc: C, 68.96 ; H, 8.05; N, 6.99 Found: C, 68.97; H, 8.05; N, 6.98

TLC mobile phase= [*]Chloroform : Methanol :: 9 : 1, [**]Chloroform : Toluene : GAA :: 1: 1: 0.1, [$]Ethyl Acetate, [$$]Methanol : Toluene : GAA :: 1: 1: 0.1

Table 2 *In vitro* antimicrobial activity of the synthesized compounds

Comp.	Antimicrobial screening (MIC = µM)						
	SA	***BS***	***EC***	***KP***	***ST***	***CA***	***AN***
1.	81.1	40.5	81.1	40.5	40.5	40.5	40.5
2.	101.2	50.6	50.6	50.6	50.6	50.6	50.6
3.	77.3	38.6	77.3	38.6	38.6	38.6	38.6
4.	**18.2**	36.5	73.0	36.5	36.5	36.5	36.5
5.	36.5	36.5	73.0	36.5	36.5	36.5	36.5
6.	40.0	40.0	80.1	40.0	40.0	40.0	40.0
7.	38.8	38.8	77.6	38.8	38.8	38.8	38.8
8.	77.6	38.8	77.6	38.8	38.8	38.8	38.8
9.	37.2	37.2	74.4	**18.6**	**18.6**	37.2	37.2
10.	74.4	**18.6**	74.4	37.2	37.2	37.2	37.2
11.	38.3	38.3	**19.2**	38.3	38.3	38.3	38.3
12.	32.2	32.2	64.5	32.2	32.2	**16.1**	32.2
13.	**17.9**	35.9	70.8	**17.9**	35.9	**17.9**	**17.9**
14.	64.6	32.3	64.6	32.3	32.3	32.3	32.3
15.	74.0	37.0	74.0	37.0	**18.5**	18.5	**18.5**
16.	74.0	**18.5**	37.0	37.0	37.0	37.0	37.0
17.	74.0	37.0	74.0	37.0	74.0	37.0	37.0
18.	76.6	38.3	38.3	38.3	38.3	38.3	38.3
19.	35.9	35.9	35.9	35.9	35.9	35.9	35.9
20.	31.3	31.3	62.5	31.3	31.3	31.3	31.3
Cefadroxil	34.4	34.4	17.2	34.4	34.4	-	-
Fluconazole	-	-	-	-	-	40.8	40.8

SA: *Staphylococcus aureus,* ***BS****: Bacillus subtilis,* ***EC:*** *Escherichia coli,* ***KP:*** *Klebsiella pneumoniae,* ***ST:*** *Salmonella typhi;* ***CA****: Candida albicans,* ***AN****: Aspergillus niger*

Table 3 *In vitro* antioxidant activity of the synthesized compounds

Comp.	Antioxidant activity (IC_{50} = µg/ml)
1.	22.70
2.	17.37
3.	18.02
4.	17.46
5.	27.11
6.	**09.18**
7.	22.45
8.	26.65
9.	23.44
10.	17.96
11.	20.51
12.	23.78
13.	26.44
14.	32.43
15.	28.47
16.	21.81
17.	30.87
18.	29.75
19.	15.93
20.	12.67
Ascorbic Acid	40

Table 4 *In silico* docking score of the synthesized compounds with 3U2D protein.

Comp.	Docking Score
1.	-2.967
2.	-4.07
3.	-2.724
4.	**-4.73**
5.	-4.221
6.	-4.199
7.	**-4.61**
8.	-4.354
9.	-3.184
10.	-2.436
11.	-3.24
12.	-3.859
13.	-3.198
14.	-3.474
15.	-3.663
16.	-3.987
17.	-4.601
18.	-2.818
19.	-4.043
20.	-3.098
Ofloxacin	-5.107

Table 5 Docking score and binding energy of compound **4** and **7** with standard drug ofloxacin

Compound	Docking Score	Interacting Residues
4	-4.73	PRO87, ILE86, GLY85, ARG84, GLY83, ASP81, THR173, GLU 58, SER55, ASN54, ILE51, GLU50, VAL131, VAL130, SER129, SER128, LEU103, ILE102
7	-4.61	PRO87, ARG144, ILE86, GLY85, ARG84, GLY83, ASP81, THR173, GLU 58, SER55, ASN54, GLU50, VAL130, SER129, SER128, LEU103, ILE102
Ofloxacin	-5.107	PRO87, ILE86, GLY85, ARG84, GLY83, ASP81, VAL131, SER129, SER128, LEU103, ILE102, THR173, ILE175, GLU58, SER55, ASN54, ILE51

Table 6 ADME parameters of synthesized compounds

Comp.	ADME parameters										
	Mol MW	**Rule of Five**	**QPlogPo/w**	**Human Oral Absorption**	**Volume**	**% Human Oral Absorption**	**QPlogP$_w$**	**QPlogK$_p$**	**QPlogBB**	**Donor HB**	**Accept HB**
1	308.354	0	3.38	3	957.885	100.0	8.709	-1.987	-0.778	1.0	4.0
2	247.271	0	0.656	3	743.851	67.916	11.506	-4.204	-1.339	3.0	5.0
3	323.369	0	2.789	3	999.18	91.672	11.575	-2.168	-1.011	2.0	5.5
4	342.799	0	3.817	3	995.909	100.0	8.468	-2.092	-.0.613	1.0	4.0
5	342.799	0	3.871	3	1001.91	100.0	8.469	-2.155	-0.631	1.0	4.0
6	312.342	0	2.331	3	947.57	91.759	9.026	-2.078	-0.808	1.0	5.0
7	322.381	0	3.687	3	1017.578	100.0	8.404	-2.183	-0.813	1.0	4.0
8	322.381	0	3.688	3	1017.852	100.0	8.405	-2.184	-0.814	1.0	4.0
9	336.408	0	3.986	3	1072.652	100.0	8.091	-2.333	-0.807	1.0	4.0
10	336.408	0	3.958	3	1063.481	100.0	8.109	-2.259	-0.758	1.0	4.0
11	326.344	0	3.583	3	971.486	100.0	8.509	-2.081	-0.674	1.0	4.0

Table 6 Contd..

Comp.	ADME parameters										
	Mol MW	**Rule of Five**	**QPlogPo/w**	**Human Oral Absorption**	**Volume**	**% Human Oral Absorption**	**QPlogP_w**	**QPlogK_p**	**QPlogBB**	**Donor HB**	**Accept HB**
12	387.25	0	3.949	3	1010.987	100.0	8.477	-2.157	-0.622	1.0	4.0
13	353.352	0	2.681	3	1031.006	77.031	9.831	-3.889	-1.84	1.0	5.0
14	387.797	0	3.239	3	1073.076	82.122	9.524	-3.85	-1.579	1.0	5.0
15	338.38	0	3.509	3	1036.846	100.0	8.946	-2.059	-0.866	1.0	4.75
16	338.38	0	3.475	3	1032.883	100.0	8.937	-2.085	-0.869	1.0	4.75
17	338.38	0	3.477	3	1033.285	100.0	8.943	-2.086	-0.872	1.0	4.75
18	326.344	0	3.615	3	974.01	100.0	8.488	-2.121	-0.674	1.0	4.0
19	353.352	0	2.677	3	1030.425	77.006	9.824	-3.892	-1.835	1.0	5.0
20	400.578	0	5.921	1	1434.834	100.0	6.164	-1.791	-1.671	1.0	4.5