**Experimental section**

The starting 2-chloroquinoline-3-carbaldehyde **(1)** was previously reported [23].

***Condensation of quinoline aldehyde 1 with barbituric acid 2***

***a) Conventional method***

A mixture of 2-chloroquinoline-3-carbaldehyde **(1)** (2 mmol) and barbituric acid **2** (2 mmol) in ethanol (20 mL) was heated under reflux for 3 h. The precipitated solid while hot was collected by filtration and recrystallized from ethanol/dioxane mixture (2:1) afforded compound **4**.

***b) Microwave irradiation***

An equimolar mixture of 2-chloroquinoline-3-carbaldehyde **(1),** barbituric acid **2** (2 mmol) and acetic acid (2 mL) was allowed to react under microwave irradiation at 200-400 W power for 2-4 min. The solvent was evaporated under reduced pressure. The residue was recrystallized from ethanol/dioxane mixture (2:1) afforded compound **4**.

***2-(2,4,6-Trioxotetrahydropyrimidin-1(2H)-yl)quinoline-3-carbaldehyde (4)***

Red crystals, mp. >360oC, IR (KBr, *ν*, cm-1): 3441 (*br*. OH, lactim form), 3215 (NH), 1747, 1711 (C=O barbituric), 1676 (CHO). 1H NMR (400 *MHz*, DMSO-*d*6, *δ*, ppm): 12.15 (br.s, 1H, NH, exchangeable), 11.39 (br.s, 1H, OH, lactim form, exchangeable), 11.26 (br.s, 1H, OH, enol form, exchangeable), 9.14 (s, 1H, CHO), 8.48 (s, 1H, C4-H quinoline), 7.73-7.71 (dd, 1H, C5-H, *J*= 7.6 *Hz*), 7.63-7.59 (dd, 1H, C7-H quinoline, *J*= 8.4 and 7.2 *Hz*), 7.32 (d, 1H, C8-H quinoline, *J*= 8.4 *Hz*), 7.25-7.21 (dd, 1H, C6-H quinoline, *J*= 8.0 and 6.8 *Hz*), 3.15 (s, 2H, CH2). MS (70 eV, *m/z*, %): 283 (M.+, 12.9), 267 (96.1), 251 (16.1), 207 (15.2), 193 (17.6), 158 (23.2), 130 (18.3), 119 (63.4), 93 (100.0), 77 (33.1), 64 (36.7). Anal. Calcd. for C14H9N3O4 (283.24): C, 59.37; H, 3.20; N, 14.84. Found: C, 59.22; H, 3.01; N, 14.80%.

***Condensation of quinoline 4 with 4-toluidine***

***a) Conventional method***

A solution of quinoline **4** (2 mmol) and 4-toluidine (2 mmol) in dioxane (20 mL) was heated under reflux for 2 h. The precipitated solid after cooling was filtered off and recrystallized from dioxane to afford compound **5**.

***b) Microwave irradiation***

An equimolar mixture of 2-chloroquinoline-3-carbaldehyde **(1)**, barbituric acid **2** (2 mmol) and acetic acid (2 mL) was allowed to react under microwave irradiation at 200-400 W power for 2-4 min. The solvent was evaporated under reduced pressure. The residue was recrystallized from dioxane to produce compound **5**.

***1-(3-((p-Tolylimino)methyl)quinolin-2-yl)pyrimidine-2,4,6(1H,3H,5H)-trione (5)***

Yellow crystals, mp. 234-236oC. IR (KBr, *ν*, cm-1): 3450 (*br*. OH, lactim form), 1730, 1708, 1655 (C=O), 1630 (C=N). 1H NMR (400 *MHz*, DMSO-*d*6, *δ*, ppm): 12.13 (br.s, 1H, NH, exchangeable), 11.24 (br.s, 1H, OH, lactim form, exchangeable), 11.09 (br.s, 1H, OH, enol form, exchangeable), 9.15 (s, 1H, CH=N), 8.45 (s, 1H, C4-H quinoline), 7.72 (d, 1H, C5-H, *J*= 8.0 *Hz*), 7.28-7.23 (dd, 1H, C7-H quinoline, *J*= 8.0 and 7.6 *Hz*), 7.31 (d, 1H, C8-H quinoline, *J*= 7.6 *Hz*), 7.19-6.91 (dd, 1H, C6-H quinoline, *J*= 7.6 and 7.2 *Hz*), 6.71 (d, 2H,Ar-H, *J*= 8.4 *Hz*), 6.62 (d, 2H, Ar-H, *J*= 8.4 *Hz*), 3.44 (s, 2H, CH2), 2.30 (s, 3H, CH3). Anal. Calcd. for C21H16N4O3 (372.38): C, 67.73; H, 4.33; N, 15.05. Found: C, 67.54; H, 4.09; N, 15.03%.

***Condensation of quinoline aldehyde 1 with 1,3-dimethylbarbituric acid 6***

***b) Conventional method***

An equimolar mixture of 2-chloroquinoline-3-carbaldehyde **(1)** or 2-oxoquinoline-3-carbaldehyde **(10)** and 1,3-dimethylbarbituric acid **6** (2 mmol) in ethanol (20 mL) was heated under reflux for 2 h. The precipitated solid while hot was collected by filtration and recrystallized from ethanol/dioxane mixture (2:1) to afford compound **8**.

***b) Microwave Irradiation***

An equimolar mixture of 2-oxoquinoline-3-carbaldehyde **(10)**, 1,3-dimethylbarbituric acid **6** (2 mmol) and acetic acid (2 mL) was allowed to react under microwave irradiation at 200-400 W power for 2-4 min. The solvent was evaporated under reduced pressure. The residue was recrystallized from ethanol/dioxane mixture (2:1) to produce compound **8**.

***1,3-Dimethyl-5-((2-oxo-1,2-dihydroquinolin-3-yl)methylene)pyrimidine-2,4,6(1H,3H,5H)-trione (8)***

Yellow crystals, mp. 280-282oC. IR (KBr, *ν*, cm-1): 3449 (*br*. OH, lactim form), 1727, 1700 (C=O barbituric), 1666 (C=O quinolone). 1H NMR (400 *MHz*, DMSO-*d*6, *δ*, ppm): 12.16 (br.s, 1H, NH, exchangeable), 9.06 (s, 1H, CH=), 8.55 (s, 1H, C4-H quinoline), 7.74 (d, 1H, C8-H quinoline, *J*= 8.0 *Hz*), 7.61-7.59 (dd, 1H, C7-H quinoline, *J*= 8.4 and 6.8 *Hz*), 7.33 (d, 1H, C5-H quinoline, *J*= 8.4 *Hz*), 7.25-7.23 (dd, 1H, C6-H quinoline, *J*= 8.0 and 7.2 *Hz*), 3.23 (s, 3H, CH3), 3.19 (s, 3H, CH3). Anal. Calcd. for C16H13N3O4 (311.30): C, 61.73; H, 4.21; N, 13.50. Found: C, 61.59; H, 4.08; N, 13.45%.

***Reaction of barbiturate 8 with methyl 4-aminobenzoate***

A solution of barbiturate **8** (2 mmol) and methyl 4-aminobenzoate (2 mmol) in dioxane (15 mL) was heated under reflux for 4 h. The reaction mixture was concentrated and cooled to room temperature. The obtained solid was filtered off and recrystallized from ethanol/dioxane mixture (2:1) to afford Schiff base derivative **9**.

***b) Microwave Irradiation***

An equimolar mixture of compound **8** (2 mmol) and methyl 4-aminobenzoate (2 mmol) and acetic acid (2 mL) was added. The reaction mixture was allowed to react under microwave irradiation at 200-400 W power for 3-5 min. The solvent was evaporated under reduced pressure. The residue was recrystallized from ethanol/dioxane mixture (2:1) to afford compound **9**.

***Methyl 4-(((2-oxo-1,2-dihydroquinolin-3-yl)methylene)amino)benzoate (9)***

Yellow crystals, mp. 324-326oC. IR (KBr, *ν*, cm-1): 3446 (*br*. OH, lactim form), 1699 (C=O ester), 1685 (C=O quinolone), 1621 (C=N). 1H NMR (400 *MHz*, DMSO-*d*6, *δ*, ppm): 12.25 (br.s, 1H, NH, exchangeable), 10.22 (s, 1H, CH=N), 8.48 (s, 1H, C4-H quinoline), 7.89 (d, 2H, benzoate, *J*= 6.8 *Hz*), 7.64 (d, 1H, C8-H quinoline, *J*= 8.1 *Hz*), 7.65-7.61 (dd, 1H, C7-H quinoline, *J*= 8.2 and 7.2 *Hz*), 7.34 (d, 1H, C5-H quinoline, *J*= 8.4 *Hz*), 7.24-7.21 (dd, 1H, C6-H quinoline, *J*= 7.3 and 8.4 *Hz*), 7.24 (d, 2H, benzoate, *J*= 6.8 *Hz*), 3.55 (s, 3H, CH3). Anal. Calcd. for C18H14N2O3 (306.32): C, 70.58; H, 4.61; N, 9.15. Found: C, 70.41; H, 4.42; N, 9.09%.

***General procedure for synthesis of quinolone derivatives* 11a,b** and **10**.

***a) Conventional Method***

A mixture of 2-chloroquinoline-3-carbaldehyde **(1)** (2 mmol) and the appropriate amine compound namely, 4-aminoacetophenone, 2-aminobenzothiazole or benzimidazole (2 mmol) in ethanol (20 mL) and acetic acid (3 mL) as a catalyst. The reaction mixture was heated under reflux for 4 h, the solvent was evaporated under reduced pressure. The residue was recrystallized from the suitable solvent to afford compounds **11a,b** and **10**, respectively. The later product **10** was identical in all respects (IR, mp, mixed mp and TLC) with an authentic sample prepared by heating the starting aldehyde **1** in 70% acetic acid.[23]

***b) Microwave Irradiation***

A mixture of 2-chloroquinoline-3-carbaldehyde **1** (2 mmol) and the appropriate amine compound namely, 4-aminoacetophenone, 2-aminobenzothiazole or benzimidazole (2 mmol) in glacial acetic acid (3 mL) was allowed to react under microwave irradiation at 200-300 W power for 3-4 min. The solvent was evaporated under reduced pressure. The residue was recrystallized from the suitable solvent to afford compounds **11a,b** and **10**, respectively.

***2-Oxoquinoline-3-carbaldehyde (10)***

Yellow crystals, mp. 322-324oC [Lit. [23] mp. 304-306oC].

***2-((4-Acetylphenyl)amino)quinoline-3-carbaldehyde (11a)***

Purple crystals, mp. 220-222oC (Ethanol). IR (KBr, *ν*, cm-1): 3354 (NH), 1669 (C=O). 1H NMR (400 *MHz*, DMSO-*d*6, *δ*, ppm): 10.37 (br.s, 1H, NH, exchangeable), 9.22 (s, 1H, CHO), 8.43 (s, 1H, C4-H quinoline), 8.31-8.29 (d, 2H, acetophenone, *J*= 8.8 *Hz*), 8.18-8.16 (d, 1H, C5-H quinoline, *J*= 8.6 *Hz*), 8.03 (d, 2H, acetophenone, *J*= 8.9 *Hz*), 7.98 (d, 1H, C8-H quinoline, *J*= 7.6 *Hz*), 7.93-7.88 (dd, 1H, C7-H quinoline, *J*= 8.8 and 7.2 *Hz*), 7.63-7.57 (dd, 1H, C6-H quinoline, *J*= 8.8 and 7.1 *Hz*), 2.43 (s, 3H, CH3). Anal. Calcd. for C18H14N2O2 (290.32): C, 74.47; H, 4.86; N, 9.65. Found: C, 74.31; H, 4.69; N, 9.62%.

***2-(Benzo[d]thiazol-2-ylamino)quinoline-3-carbaldehyde (11b)***

Grey powder, mp. 232-234oC (Ethanol/dioxane, 2:1). IR (KBr, *ν*, cm-1): 3354 (NH), 1656 (C=O), 1621 (C=N). 1H NMR (400 *MHz*, DMSO-*d*6, *δ*, ppm): 9.73 (br.s, 1H, NH, exchangeable), 9.29 (s, 1H, CHO), 9.13 (s, 1H, C4-H quinoline), 8.33 (d, 1H, C4-H benzothiazole, *J*= 8.0 *Hz*), 8.29 (d, 1H, C7-H benzothiazole, *J*= 8.8 *Hz*), 8.07 (d, 1H, C5-H quinoline, *J*= 8.4 *Hz*), 7.91 (d, 1H, C8-H quinoline, *J*= 8.0 *Hz*), 7.78-7.74 (dd, 1H, C7-H quinoline, *J*= 8.4 and 7.6 *Hz*), 7.55-7.52 (dd, 1H, C6-H quinoline, *J*= 8.0 and 7.6 *Hz*), 7.23-7.20 (dd, 1H, C5-H benzothiazole, *J*= 8.0 and 7.2 *Hz*), 7.04-7.01 (dd, 1H, C6-H benzothiazole, *J*= 8.8 and 7.2 *Hz*). Anal. Calcd. for C17H11N3OS (305.36): C, 66.87; H, 3.63; N, 13.76. Found: C, 66.69; H, 3.48; N, 13.74%.

***General procedure for the synthesis of compounds 14-16.***

An equimolar mixture of 2-chloroquinoline-3-carbaldehyde **(1)**, the appropriate amine compound namely, 4-aminoacetophenone, 2-aminobenzothiazole or benzimidazole, and the active methylene compound namely, 1,3-dimethylbarbituric acid, thiobarbituric acid or 2,4-dioxothiazolidine (2 mmol) in ethanol (20 mL) and glacial acetic acid (3 mL) as catalyst. The reaction mixture was heated under reflux for 4 h, the solvent was evaporated under reduced pressure. The residue was recrystallized from the suitable solvent to afford compounds **14-16**, respectively.

***b) Microwave Irradiation***

An equimolar mixture of 2-chloroquinoline-3-carbaldehyde **1**, the appropriate amine compound namely, 4-aminoacetophenone, 2-aminobenzothiazole or benzimidazole, and the active methylene compound namely, 1,3-dimethylbarbituric acid, thiobarbituric acid or 2,4-dioxothiazolidine (2 mmol) in glacial acetic acid (3 mL) was allowed to react under microwave irradiation at 200-400 W power for 3-5 min. The solvent was evaporated under reduced pressure. The residue was recrystallized from the suitable solvent to afford the corresponding compounds **14-16**, respectively.

***5-((2-((4-acetylphenyl)amino)quinolin-3-yl)methylene)pyrimidine-2,4,6(1H,3H,5H)-trione***

***(14a)***

 Brown crystals, mp. 262-264oC (Ethanol). IR (KBr, *ν*, cm-1): 3441 (*br*. OH, lactim form), 1745, 1710 (C=O barbituric), 1674 (C=O acetophenone), 1649 (C=N). 1H NMR (400 *MHz*, DMSO-*d*6, *δ*, ppm): 11.08 (br.s, 2H, 2NH barbituric, exchangeable), 11.05 (br.s, 1H, NH acetophenone, exchangeable), 9.87 (s, 1H, CH=), 8.49 (s, 1H, C4-H quinoline), 8.31 (d, 1H, C5-H quinoline, *J*= 8.4 *Hz*), 8.21 (d, 1H, C8-H quinoline, *J*= 8.6 *Hz*), 7.67-7.59 (dd, 1H, C7-H quinoline, *J*= 8.8 and 7.4 *Hz*), 7.27-7.22 (dd, 1H, C6-H quinoline, *J*= 8.4 and 7.5 *Hz*), 6.53 (d, 2H, acetophenone, *J*= 8.8 *Hz*), 6.44 (d, 2H, acetophenone, *J*= 8.8 *Hz*), 2.69 (s, 3H, CH3). MS (70 eV, *m/z*, %): 400 (M+., 13), 346 (26), 331 (21), 284 (31), 197 (20), 170 (20), 128 (13), 92 (29), 78 (79), 77 (36), 42 (100). Anal. Calcd. for C22H16N4O4 (400.39): C, 66.00; H, 4.03; N, 13.99. Found: C, 65.85; H, 3.89; N, 13.92%.

***5-((2-(Benzo[d]thiazol-2-ylamino)quinolin-3-yl)methylene)-1,3-dimethylpyrimidine-2,4,6(1H,3H,5H)-trione (14b)***

Brown crystals, mp. 354-356oC (Ethanol/dioxane, 1:1). IR (KBr, *ν*, cm-1): 3154 (NH), 1733, 1695, 1664 (C=O), 1620 (C=N). 1H NMR (400 *MHz*, DMSO-*d*6, *δ*, ppm): 12.16 (br.s, 1H, NH, exchangeable), 9.08 (s, 1H, CH=), 8.53 (s, 1H, C4-H quinoline), 8.01 (d, 1H, C4-H benzothiazole, *J*= 8.0 *Hz*), 7.74 (d, 1H, C7-H benzothiazole, *J*= 7.2 *Hz*), 7.67 (d, 1H, C5-H quinoline, *J*= 7.2 *Hz*), 7.62 (d, 1H, C8-H quinoline, *J*= 8.0 *Hz*), 7.59-7.55 (dd, 1H, C7-H quinoline, *J*= 7.4 and 7.2 *Hz*), 7.54-7.51 (dd, 1H, C6-H quinoline, *J*= 8.0 and 7.2 *Hz*), 7.33-7.31 (dd, 1H, C5-H benzothiazole, *J*= 8.4 and 8.0 *Hz*), 7.24-7.20 (dd, 1H, C6-H benzothiazole, *J*= 7.6 and 7.2 *Hz*), 3.22 (s, 3H, CH3), 3.18 (s, 3H, CH3). MS (70 eV, *m/z*, %): 445 (M+.+2, 8), 443 (M+., 11), 412 (9), 312 (19), 199 (17), 140 (39), 107 (31), 99 (33), 77 (100). Anal. Calcd. for C23H17N5O3S (443.48): C, 62.29; H, 3.86; N, 15.79. Found: C, 62.09; H, 3.71; N, 15.76%.

***5-((2-((4-Acetylphenyl)amino)quinolin-3-yl)methylene)-2-thioxodihydropyrimidine-4,6(1H,5H)-dione (15a)***

Grey crystals, mp. 304-306oC (Ethanol/Dioxane, 2:1). IR (KBr, *ν*, cm-1): 3427 (*br*. OH, lactim form), 1660 (C=O), 1630 (C=N), 1361 (C=S). 1H NMR (400 *MHz*, DMSO-*d*6, *δ*, ppm): 12.55 (br.s, 1H, NH barbituric, exchangeable), 12.08 (br.s, 1H, NH thiobarbituric, exchangeable), 11.41 (br.s, 1H, NH acetophenone, exchangeable), 12.00 (br.s, 1H, SH, thiolactim form, exchangeable), 9.30 (s, 1H, CH=), 8.67 (s, 1H, C4-H quinoline), 8.46 (d, 1H, C5-H quinoline, *J*= 8.4 *Hz*), 8.21 (d, 1H, C8-H quinoline, *J*= 8.6 *Hz*), 7.67-7.59 (dd, 1H, C7-H quinoline, *J*= 8.8 and 7.4 *Hz*), 7.27-7.22 (dd, 1H, C6-H quinoline, *J*= 8.4 and 7.5 *Hz*), 6.53 (d, 2H, acetophenone, *J*= 8.8 *Hz*), 6.44 (d, 2H, acetophenone, *J*= 8.8 *Hz*), 1.90 (s, 3H, CH3). MS (70 eV, *m/z*, %): 417 (M+.+1, 33), 416 (M+., 32), 403 (100), 397 (63), 343 (19), 300 (96), 239 (86), 205 (64), 161 (67), 115 (33), 98 (64), 91 (56), 82 (35), 77 (10). Anal. Calcd. for C22H16N4O3S (416.46): C, 63.45; H, 3.87; N, 13.45. Found: C, 63.21; H, 3.70; N, 13.41%.

***5-((2-(Benzo[d]thiazol-2-ylamino)quinolin-3-yl)methylene)-2-thioxodihydropyrimidine-4,6(1H,5H)-dione (15b)***

Yellow crystals, mp. 290-292oC (Ethanol/dioxane, 2:1). IR (KBr, *ν*, cm-1): 3419 (*br*. OH, lactim form), 1660 (C=O), 1635 (C=N), 1365 (C=S). 1H NMR (400 *MHz*, DMSO-*d*6, *δ*, ppm): 12.47 (br.s, 1H, NH barbituric, exchangeable), 12.40 (br.s, 1H, NH barbituric, exchangeable), 12.33 (br.s, 1H, SH, thiolactim form, exchangeable), 11.46 (br.s, 1H, NH benzothiazole, exchangeable), 9.55 (s, 1H, CH=), 9.25 (s, 1H, C4-H quinoline), 8.48-8.46 (d, 1H, C4-H benzothiazole, *J*= 8.3 *Hz*), 8.01 (d, 1H, C7-H benzothiazole, *J*= 8.0 *Hz*), 7.94 (d, 1H, C5-H quinoline, *J*= 8.0 *Hz*), 7.90 (d, 1H, C8-H quinoline, *J*= 8.8 *Hz*), 7.80-7.65 (dd, 1H, C7-H quinoline, *J*= 8.0 and 7.6 *Hz*), 7.73-7.69 (dd, 1H, C6-H quinoline, *J*= 8.8 and 7.6 *Hz*), 7.60-7.55 (dd, 1H, C5-H benzothiazole, *J*= 8.4 and 7.2 *Hz*), 7.22-7.17 (dd, 1H, C6-H benzothiazole, *J*= 8.0 and 7.3 *Hz*). MS (70 eV, *m/z*, %): 433 (M+.+2, 63), 432 (M+.+1, 63), 431 (M+., 28), 408 (65), 400 (100), 364 (55), 333 (27), 302 (40), 279 (24), 255 (24), 223 (62). Anal. Calcd. for C21H13N5O2S2 (431.49): C, 58.46; H, 3.04; N, 16.23. Found: C, 58.31; H, 2.93; N, 16.18%.

***5-((2-((4-Acetylphenyl)amino)quinolin-3-yl)methylene)thiazolidine-2,4-dione (16a)***

Brown crystals, mp. 154-156oC (decomp.) (Ethanol). IR (KBr, *ν*, cm-1): 3352 (NH), 1741, 1690 (C=O thiazolidinedione), 1657 (C=O acetophenone). 1H NMR (400 *MHz*, DMSO-*d*6, *δ*, ppm): 12.00 (br.s, 1H, NH thiazolidine, exchangeable), 10.20 (br.s, 1H, NH acetophenone, exchangeable), 8.53 (s, 1H, CH=), 8.24 (s, 1H, C4-H quinoline), 7.85-7.83 (d, 2H, acetophenone, *J*= 8.5 *Hz*), 7.72 (d, 1H, C5-H quinoline, *J*= 7.2 *Hz*), 7.66 (d, 1H, C8-H quinoline, *J*= 7.6 *Hz*), 7.56-7.21 (m, 2H, quinoline), 6.62 (d, 2H, acetophenone, *J*= 8.4 *Hz*), 2.43 (s, 3H, CH3). MS (70 eV, *m/z*, %): 391 (M+.+2, 17), 389 (M+., 14), 385 (57), 382 (100), 371 (20), 336 (14), 297 (17), 247 (20), 200 (17), 170 (68), 139 (27), 111 (51). Anal. Calcd. for C21H15N3O3S (389.43): C, 64.77; H, 3.88; N, 10.79. Found: C, 64.58; H, 3.71; N, 10.71%.

***5-((2-(Benzo[d]thiazol-2-ylamino)quinolin-3-yl)methylene)thiazolidine-2,4-dione (16b)***

Yellow crystals, mp. 310-312oC (Ethanol/dioxane, 1:1). IR (*ν*, cm-1): 3390 (NH), 1735, 1690 (C=O thiazolidinedione), 1617 (C=N). 1H NMR (400 *MHz*, DMSO-*d*6, *δ*, ppm): 12.19 (br.s, 1H, NH thiazolidine, exchangeable), 12.13 (br.s, 1H, OH lactim form, exchangeable), 10.22 (br.s, 1H, NH, exchangeable), 9.15 (s, 1H, CH=), 9.09 (s, 1H, C4-H quinoline), 8.46 (d, 1H, C4-H benzothiazole, *J*= 8.4 *Hz*), 8.08 (d, 1H, C7-H benzothiazole, *J*= 8.0 *Hz*), 7.97 (d, 1H, C5-H quinoline, *J*= 8.1 *Hz*), 7.89 (d, 1H, C8-H quinoline, *J*= 8.5 *Hz*), 7.85-7.82 (dd, 1H, C7-H quinoline, *J*= 8.4 and 7.5 *Hz*), 7.79-7.76 (dd, 1H, C6-H quinoline, *J*= 8.1 and 7.6 *Hz*), 7.65-7.61 (dd, 1H, C5-H benzothiazole, *J*= 8.4 and 7.2 *Hz*), 7.56-7.52 (dd, 1H, C6-H benzothiazole, *J*= 8.0 and 7.3 *Hz*). Anal. Calcd. for C20H12N4O2S2 (404.46): C, 59.39; H, 2.99; N, 13.85. Found: C, 59.21; H, 2.83; N, 10.89%.

***General procedure for the synthesis of 2-oxoquinolines 8, 17 and 18.***

*Method I:*

An equimolar mixture of 2-chloroquinoline-3-carbaldehyde **(1)**, benzimidazole and the appropriate active methylene compound namely, 1,3-dimethylbarbituric acid, thiobarbituric acid or 2,4-dioxothiazolidine (2 mmol) in glacial acetic acid (3 mL) was allowed to react under microwave irradiation at 200-400 W power for 3-5 min. The solvent was evaporated under reduced pressure. The residue was recrystallized from the suitable solvent to produce compounds **8** (identity: mp., mixed mp., TLC, IR), **17** and **18**, respectively.

*Method II:*

A mixture of 2-oxoquinoline-3-carbaldehyde **(10)** (2 mmol) and the appropriate active methylene compound namely, 1,3-dimethylbarbituric acid, thiobarbituric acid or 2,4-dioxothiazolidine (2 mmol) in glacial acetic acid (3 mL) was allowed to react under microwave irradiation at 200-400 W power for 3-5 min. The solvent was evaporated under reduced pressure. The residue was recrystallized from the suitable solvent to produce compounds **8** (identity: mp., mixed mp., TLC, IR), **17** and **18**, respectively.

***5-((2-Oxo-1,2-dihydroquinolin-3-yl)methylene)-2-thioxodihydropyrimidine-4,6(1H,5H)-dione (17)***

Red crystals, mp. >360oC (Dioxane). IR (*ν*, cm-1): 3445 (*br*. OH, lactim form), 3250 (NH), 1665 (C=O), 1352 (C=S). 1H NMR (400 *MHz*, DMSO-*d*6, *δ*, ppm): 12.47 (br.s, 1H, NH barbituric, exchangeable), 12.37 (br.s, 1H, NH barbituric, exchangeable), 12.19 (br.s, 1H, NH quinolone, exchangeable), 11.45 (br.s, 1H, SH, thiolactim form, 1:1, exchangeable), 9.26 (s, 1H, CH=), 8.52 (s, 1H, C4-H quinoline), 7.73 (d, 1H, C5-H quinoline, *J*= 7.6 *Hz*), 7.64-7.61 (dd, 1H, C6-H quinoline, *J*= 7.5 and 6.8 *Hz*), 7.33 (d, 1H, C8-H quinoline, *J*= 8.0 *Hz*), 7.25-7.21 (dd, 1H, C7-H quinoline, *J*= 8.0 and 6.8 *Hz*). Anal. Calcd. for C14H9N3O3S (299.30): C, 56.18; H, 3.03; N, 14.04. Found: C, 55.99; H, 2.89; N, 14.01%.

***5-((2-Oxo-1,2-dihydroquinolin-3-yl)methylene)thiazolidine-2,4-dione (18)***

Yellow crystals, mp. 330-332oC (Dioxane). IR (KBr,*ν*, cm-1): 3150 (NH), 1735, 1690 (C=O thiazolidinedione), 1659 (C=O quinolone). 1H NMR (400 *MHz*, DMSO-*d*6, *δ*, ppm): 12.68 (br.s, 1H, NH thiazolidine, exchangeable), 12.31 (br.s, 1H, NH quinolone, exchangeable), 8.25 (s, 1H, CH=), 7.97 (s, 1H, C4-H quinoline), 7.72-7.40 (m, 4H, Ar-H). Anal. Calcd. for C13H8N2O3S (272.28): C, 57.35; H, 2.96; N, 10.29. Found: C, 57.19; H, 2.71; N, 10.22%.