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Synthesis and evaluation of some novel quinazolinone derivatives as diuretic agents.

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A new series of quinazolin-4(3H)-one derivatives containing either a thiazole or a 1, 3, 4-thiadiazole moiety were prepared in order to study the effect of such a heterocyclic combination on the expected diuretic activity. Synthesis of the target compounds (2, 4, and 6) has been achieved through an interaction of the starting 7-chloro-2-methyl-4H-3, 1-benzoxazin-4-one 1 with different heterocyclic amines. Alkylation of 3-(2-mercapto-1, 3, 4-thiadiazol-5-yl)quinazolin-4(3H)-one derivative 4 with different alkyl halides or chloroacetic acid afforded the corresponding thioethers 5 while interaction of 2-methyl-3-(1, 3, 4-thiadiazol-5-yl or thiazol-5-yl)quinazolin-4(3H)-ones (2 and 6) with various aromatic aldehydes resulted in the formation of the arylvinyl analogs 3 and 7, respectively. On the other hand, 2-morpholinomethyl-3-(2-sulfamoyl or mercapto-1, 3, 4-thiadiazol-5-yl)quinazolin-4(3H)-one derivatives 10 have also been synthesized through an interaction of the sulfonamide or thiol analog 9 with the appropriate amine. Biological evaluation of some of the target compounds as diuretic agents was carried out. The results showed that 2-[2-(4-chlorophenyl)vinyl]-7-chloro-3-(2-sulfamoyl-1, 3, 4-thiadiazol-5-yl)quinazolin-4(3H)-one 7b exhibited significant diuretic activity. The detailed synthesis, spectroscopic and biological data are reported.

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