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Abstract: In the present work, sixteen novel 3-(2-(4-(4-substituted benzylideneamino)-5-phenyl-4*H*-1,2,4-triazol-3-ylthio)acetyl)-2-(arylimino)thiazolidin-4-one (10a-p) derivatives were synthesized by clubbing 3-(2-chloroacetyl)-2-(arylimino)thiazolidin-4-one derivatives (4a-h) with SH group of triazole Schiff bases (9a-b). The structures of the newly synthesized compounds were confirmed by analytical and spectral methods (^{1}H NMR and IR). The biological potential of newly synthesized compounds was investigated through hydrogen peroxide scavenging assay, anthelmintic activity and *in vitro* α-amylase inhibition activity. Among synthesized compounds, 10l showed the most potent hydrogen peroxide scavenging activity 71.44%, 72.32% and 73.99% at different concentrations 10 μg/ml, 30 μg/ml, and 50 μg/ml respectively. Compound 10f showed the most potent anthelmintic activity with mean paralysis time 5.20±0.05 min and mean death time 7.64±0.16 min. Highest α-amylase inhibition activity 92.17% was exhibited by compound 10j.

Key words: Thiazolidin-4-one, 1,2,4-triazoles, Schiff's base, H_2O_2 scavenging assay.

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