Design, Synthesis, and Antimicrobial Activity of (*E*)-4-Phenyl-2*H*-chromene-3-carbaldehyde *O*-[(1-Phenyl-1*H*-1,2,3-triazol-4-yl)methyl]oxime Derivatives

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Abstract—A new series of 1,4-disubstituted 1,2,3-triazole derivatives tethered to a 2*H*-chromene scaffold have been synthesized via a click reaction. The synthesized chromene–triazole conjugates were screened for their antibacterial activity against *E. coli*, *S. aureus*, *P. aeruginosa* and *B. subtilis*, as well as for antifungal activity against *A. niger* and C. *albicans*. Among the 17 synthesized compounds, 6 derivatives showed the best antimicrobial activity. Molecular docking studies of the title compounds with carotenoid dehydrosqualene synthase (PDB: 2ZCS) revealed docking scores within the range 98.241–91.488 against 106.573 for the reference ligand Ciprofloxacin and with lanosterol 14α-demethylase (CYP51; PDB ID: 5V5Z), 103.672–96.917 against 110.839 for the reference ligand Voriconazole.

Keywords: chromanone, Michael addition, Vilsmeier–Haack formylation, Suzuki coupling, click reactions, antimicrobial activity

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