(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :20/07/2025
(21) Application No.202511069158 A
(43) Publication Date : 08/08/2025

(54) Title of the invention : 1,2,3-TRIAZOLE-BENZOXAZOLE HYBRIDS AS DNA GYRASE B INHIBITOR AND USE THEREOF

(51) International classification	:A61P0031040000, A61K0031496000, A61P0013020000, A61P0031000000, C07D0413140000
(86) International Application No Filing Date	:NA :NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number Filing Date	:NA :NA
(62) Divisional to Application Number Filing Date	:NA :NA

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(57) Abstract :
The present invention relates to 1,2,3-triazole-benzoxazole hybrid compounds of Formula I and their pharmaceutically acceptable salts, solvates, or stereoisomers. These compounds are synthesized via copper(I)-catalyzed azide-alkyne cycloaddition and exhibit potent antibacterial activity by targeting Escherichia coli DNA Gyrase B. Lead compounds, particularly 10g and 10k, showed strong in vitro efficacy with MIC values of 0.12 and 0.11 mM, respectively, and favorable binding interactions in molecular docking and dynamics studies. Some compounds also displayed antifungal activity. The invention further provides pharmaceutical compositions and methods for treating bacterial infections, especially those caused by drug-resistant strains. Formula 1

No. of Pages : 24 No. of Claims : 7