

पेटेंट कार्यालय  
शासकीय जर्नल

**OFFICIAL JOURNAL  
OF  
THE PATENT OFFICE**

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निर्गमन सं. 25/2025  
ISSUE NO. 25/2025

शुक्रवार  
**FRIDAY**

दिनांक: 20/06/2025  
DATE: 20/06/2025

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पेटेंट कार्यालय का एक प्रकाशन  
PUBLICATION OF THE PATENT OFFICE

(54) Title of the invention : SYNTHESIS AND CHARACTERIZATION OF NOVEL HETEROCYCLIC COMPOUND 4-(4-(1H-BENZO[1,2,3]TRIAZOL-1-YL)PHENYL)THIAZOL-2-AMINE

(51) International classification :G01N0030900000, C07D0277420000, G01N0024080000, C07C0211290000, G01N0021350000

(86) International Application No :NA  
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA  
Filing Date :NA

(62) Divisional to Application Number :NA  
Filing Date :NA

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## (57) Abstract :

The present invention discloses a novel method for synthesizing 4-(4-(1H-benzo[1,2,3]triazol-1-yl)phenyl)thiazol-2-amine, a heterocyclic compound with potential pharmacological applications. The synthesis involves the reaction of benzotriazole with 4-bromophenylthiazol-2-amine in the presence of anhydrous potassium carbonate within an anhydrous acetonitrile medium. The reaction mixture is refluxed for 12 hours, followed by filtration and solvent removal under reduced pressure. The resultant product is purified and recrystallized from ethanol, yielding the desired compound. Characterization of the synthesized compound is performed using melting point determination, thin-layer chromatography (TLC), infrared spectroscopy (IR), and proton nuclear magnetic resonance (<sup>1</sup>H-NMR) spectroscopy. The compound exhibits a melting point range of 138-139°C, an R<sub>f</sub> value of 0.59 (n-Hexane: Ethyl acetate; 2:1), and a percentage yield of 67%. Spectroscopic analysis confirms the structure and purity of the compound, indicating successful synthesis and potential for further pharmacological evaluation.

No. of Pages : 9 No. of Claims : 10