पेटेंट कार्यालय
शासकीय जर्नल

OFFICIAL JOURNAL
OF
THE PATENT OFFICE

निर्गमन सं. 35/2023	शुक्रवार	दिनांक: 01/09/2023
ISSUE NO. 35/2023	FRIDAY	DATE: 01/09/2023

पेटेंट कार्यालय का एक प्रकाशन
PUBLICATION OF THE PATENT OFFICE

(12) PATENT APPLICATION PUBLICATION
(19) INDIA
(22) Date of filing of Application :08/08/2023

(21) Application No.202311053024 A
(43) Publication Date : 01/09/2023

(54) Title of the invention : SYNTHESIS, CHARACTERIZATION, MOLECULAR DOCKING AND ANTI- ANXIETY EVALUATION OF SOME NOVEL PHENOTHIAZINE DERIVATIVES

(51) International classification :G16B0015300000, A61P0025220000, G16C0020500000, G01N0033580000, G01N0024080000
(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 relates to a series of novel phenothiazine derivatives, 4a-4j and 5a-5e, were successfully synthesized by condensing 2-(4-acetylphenoxy)-1-(10H-phenothiazin-10-yl)ethan-1-one (3) with various carbonyl compounds in acetonitrile. The purity and progress of the reactions were confirmed using melting point and TLC. The synthesized compounds were thoroughly characterized using IR, 1H-NMR spectroscopy, and elemental analysis. Molecular docking studies were performed using Autodock to assess their potential binding interactions. The docking scores ranged from -8.7 to -10.2, indicating good potential for binding to target receptors associated with anxiety. To evaluate their anti-anxiety activity, the synthesized derivatives were tested using the Elevated Plus Maze method on Wistar rats, with Diazepam as the standard drug. Compounds 4e, 4g, and 5c exhibited the highest potency among the derivatives, surpassing the activity of Diazepam. These findings suggest that these novel phenothiazine derivatives hold promise as potential anti-anxiety agents.

No. of Pages : 18 No. of Claims : 8