

Synthesis, anticonvulsant potential, and molecular docking studies of Schiff bases bearing 2',6-dichloro-2,3'-biquinoline

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ABSTRACT In the present manuscript, a series of new 2',6-dichloro-*N*'-(substituted-benzylidene)-[2,3'-biquinoline]-4-carbohydrazides (**6a-i**; Schiff bases) has been synthesized by the reaction of 2',6-dichloro-[2,3']biquinolyl-4-carboxylic acid hydrazide (**5**) with substituted benzaldehydes. All compounds have been screened for anticonvulsant potential by using the subcutaneous pentylenetetrazole model. From the entire series the compounds **6a**, **6c**, and **6e** showed protection against convulsions at the dose concentration of 30 mg/kg body weight in correlation with conventional drug (phenytoin). The molecules have shown effective binding affinity ranges from -8.5 kcal/mol to -9.8 kcal/mol. The most suitable orientation and binding interactions were observed with compounds **6b**, **6c**, **6h**, and **6i**. The binding energies of the compounds **6b**, **6c**, **6h**, and **6i** were found to be -9.7, -9.8, -9.7, -9.8 Kcal/mol by Autodock-w and -9.7, -9.8, -9.8 and -9.7 Kcal/mol, respectively, by autodockvina.

KEYWORDS Epilepsy, Antiepileptic potential, Schiff base, Bis quinoline, Subcutaneous pentylene tetrazole.

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