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Brine Shrimp (*Artemia salina*) Lethality Bioassay of Some 2-(Alkyl/Aryl)-6-Phenyl-4,5-Dihydropyridazin-3(2*H*)-one Derivatives

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ABSTRACT A series of pyridazinone derivatives, 2-(alkyl/aryl)-6-phenyl-4,5-dihydropyridazin-3(2*H*)-ones (**3a-h**), was synthesized from 6-phenyl-4,5-dihydropyridazin-3(2*H*)-one (**2**). Compound **2** was synthesized from benzoylpropionic acid (1). The synthesized compounds were characterized on the basis of their spectral (infrared, proton nuclear magnetic resonance, carbon-13 nuclear magnetic resonance, and mass spectra) and elemental analytical data. The compounds **2** and **3a-h** and potassium dichromate (as reference drug) were tested at the dose level of 10, 20, and 30 µg/mL. Compounds **3d** and **3b** exhibited potent brine shrimp lethality with LC_{50}values of 4.023 µg and 4.20 µg. Other compounds **3g, 3f, 3c, 3h, 2, 3a,** and **3e** also showed significant cytotoxic activity with LC_{50}values of 13.91, 12.58, 11.91, 11.76, 10.58, 9.76, and 7.46 µg, respectively. The present study supports that brine shrimp bioassay is a simple, reliable, and suitable method for estimation of bioactivity of synthesized compounds and provides support for their use in medicine.

KEYWORDS Brine shrimp assay, Cytotoxic activity, Pyridazinone derivatives, Bioactive.

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