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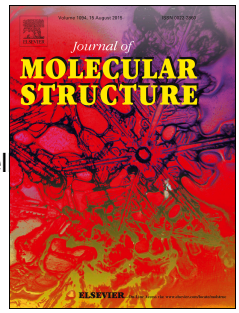

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Synthesis of imidazo [1, 2-a]pyridine-chalcones as potent inhibitors against A549 cell line and their crystal studies

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Abstract

Trisubstituted imidazo[1,2-a]pyridines were synthesized, further it was engrossed into corresponding chalcones. Amongst, the crystal structures of **3b**, **3f** and **3i** were well defined by single crystal XRD. All the compounds were screened against A549 Cell line using MTT assay, where the chalcones **3a, 3b, 3d, 3f, 3h** and **3i** showed significant activity with IC_{50} range of 7 μg/ml-42 μg/ml. The validation of the potent compounds was done by docking into the protein complex (4ph9). Furthermore, their hemocompatibility was analyzed by *in vitro* hemolytic assay.

Keywords: Imidazopyridine-chalcone; XRD; MTT assay; docking; hemolytic assay.

1. Introduction

Presently, due to several challenges endured to device a drug for scientific reasons, having two or more pharmacophores as hybrid molecule is an attractive strategy in drug discovery [1]. These hybrid molecules are the chemical entities with two or more distinct pharmacophores having different biological functions [2].

Amidst all the azole-fused heterocycles, we have chosen imidazopyridine as a lead molecule. It has been recognized as drug prejudice scaffold [3] with its remarkable biological activities as it bioisosteres with the indoles and azaindoles. Furthermore, its stride in