



## Thiazolidine-2,4-dione Derivatives Bearing Indole Moiety: Design, Synthesis, Hypoglycaemic activity and Molecular Docking Studies

K. Srikanth Kumar<sup>1,2</sup>, A. Lakshmana Rao<sup>2\*</sup> and M.V. Basaveswara Rao<sup>3</sup>

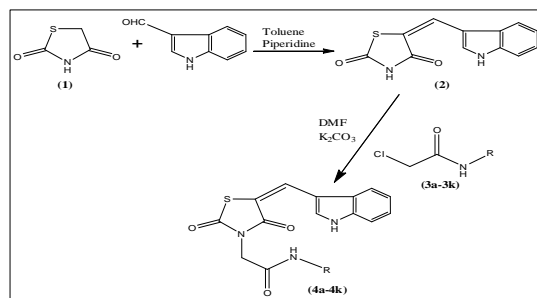
1. Faculty of Pharmaceutical Sciences, Krishna University, Machilipatnam-521002, A.P., **INDIA**
2. Department of Pharmaceutical Chemistry, V. V. Institute of Pharmaceutical Sciences, Gudlavalleru-521356, A.P., **INDIA**
3. Department of Chemistry, Krishna University, Machilipatnam-521002, A.P., **INDIA**  
Email: [dralrao@gmail.com](mailto:dralrao@gmail.com)

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### ABSTRACT

A series of novel thiazolidine-2,4-dione derivatives having *N*-aryl acetamide appendage at 3<sup>rd</sup> position and indolyl methylene appendage at 5<sup>th</sup> position was synthesized by using appropriate procedures. The synthesized compounds were characterized physically, FT-IR, <sup>1</sup>H-NMR, <sup>13</sup>C-NMR and mass spectral analysis. The newly synthesized compounds were evaluated for their hypoglycemic activity by means of tail tipping method in Alloxan induced Wister albino rats of both sexes. Compounds 4a and 4b showed promising hypoglycaemic activity in both acute studies as well as in chronic study when compared with the standard drug Rosiglitazone. Molecular docking studies were carried out using AutoDock software and revealed that compounds 4a and 4b exhibit significant binding interaction with PPAR $\gamma$  receptor compared with the standard ligand Rosiglitazone.

### Graphical Abstract



**Keywords:** Thiazolidine-2,4-dione derivatives, Conventional and microwave methods, *In vivo* hypoglycemic activity, Molecular docking studies.