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Optimized Synthesis of Active 5-benzylidine-1,3-thiazolidine-2,4-dione Derivatives

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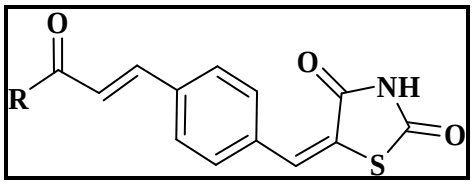
ABSTRACT

The active substrates 5-benzylidine-1,3-thiazolidine-2,4-dione derivatives which are a class of α-glucosidase inhibitors prepared from 4-((Z)-(2,4-dioxothiazolidin-5-ylidene)methyl)benzaldehyde with aromatic/ hetero aromatic ketones in presence of potassium hydroxide with ethanol as solvent. In order to improve the yields the synthesis of 5-benzylidine-1,3-thiazolidine-2,4-dione derivatives(1a-1f) has been optimized by screening different bases and solvents. Finally better conditions for preparation of these derivatives were established by Quality by design. The 5-benzylidine-1,3-thiazolidine-2,4-dione derivatives (1a-1f) were prepared with excellent yield.

Graphical Abstract



Keywords: Thiozolidinedione, α-glucosidase, 5-benzylidine-1,3-thiazolidine-2,4-dione, Derivatives.