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Synthesis and *in vitro* antihyperglycemic evaluation of some new 3-(4-ethyl-6-methyl pyrimidin-2-yl)-2-arylthiazolidin-4-one derivatives

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ABSTRACT Due to the pharmacological potential of thiazolidinedione derivatives as antidiabetic drugs, six pyrimidine hybrids of aryl thiazolidin-4-ones (**2a-f**) were synthesized in two steps. In the first step, 4-ethyl-6-methyl-pyrimidin-2-amine (**1**) was synthesized by reacting 1,3-hexane-2,4-dione with guanidine. Compound **1** reacted with appropriate aryl aldehyde and mercaptoacetic acid to form compounds **2a-f**. All the compounds **(2a-f)** exhibited varying degrees of α-amylase inhibitory activity, particularly compounds **2b** (IC_{50} = 25 µg/mL), **2f** (IC_{50} = 30 µg/mL), **2a** and **2c** (IC_{50} = 35 µg/mL) exhibited considerably potent α-amylase inhibitory as compared to the standard drug acarbose (IC_{50} = 8.26 µg/mL). It is anticipated that 3-(4-ethyl-6-methyl pyrimidin-2-yl)-2-arylthiazolidin-4-one derivatives might be used as useful lead compounds for synthesizing α-amylase inhibitors that will help manage diabetes.

KEYWORDS α-Amylase inhibition, Thiazolidinedione, Pyrimidine, Diabetes, *In-vitro* antidiabetic activity.

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