Synthesis and Biological Evaluation of Sulfonamide Derivatives as New DPP-IV Inhibitors

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Abstract

Diabetes mellitus (DM) is a chronic group of metabolic dysfunctions, characterized by elevated blood sugar level over a prolonged period, disturbance of fat, protein and carbohydrate metabolism, resulting from defect of insulin hormone secretion or insulin action or both.

The dipeptidyl peptidase-IV (DPP-IV) inhibitors, is a class of oral hypoglycemic agents that decrease the deterioration of gut-derived incretin hormone's glucagon-like peptide 1 (GLP-1), and glucose-dependent insulinotropic polypeptide (GIP), that stimulates insulin secretion and suppresses glucagon.

In this study, synthesis of four sulfonamide derivatives **3a**-**3d**, was carried out. The synthesized molecules were characterized using ^{13}C-NMR, ^{1}H-NMR, and IR. *In vitro* biological evaluation of compounds **3a**-**3d** reveals moderate DPP-IV inhibitory activities.