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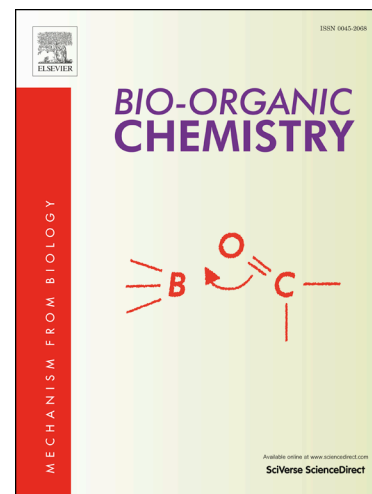
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Design, synthesis and molecular docking of thiazolidinedione based benzene sulphonamide derivatives containing pyrazole core as potential anti-diabetic agents

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Abstract

We herein report the design, synthesis and molecular docking studies of 2,4-thiazolidinedione derivatives containing benzene sulphonyl group which are docked against the Peroxisome Proliferator Activated Receptor (PPAR γ) target. Compound **7p** was most effective in lowering the blood glucose level as compared to standard drugs pioglitazone and rosiglitazone. Compound **7p** exhibited potent PPAR- γ transactivation of 61.2% with 1.9 folds increase in gene expression. In molecular docking studies **7p** showed excellent interactions with amino acids TYR 473, SER 289, HIE 449, TYR 327, ARG 288, MET 329 and LEU 228. Compound **7p** did not cause any damage to the liver without any noteworthy weight gain and may be considered as promising candidates for the development of new antidiabetic agents.

Keywords: Anti-diabetic; PPAR γ ; Gene expression; Molecular docking; Thiazolidinedione; Pyrazole.

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