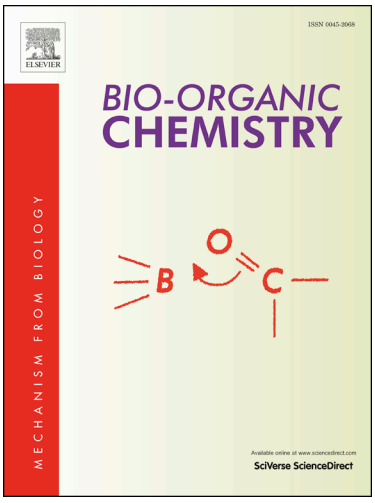

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Mohd. Javed Naim, Ozair Alam, Md. Jahangir Alam, Md. Quamrul Hassan, Nadeem Siddiqui, V.G.M. Naidu, Md. Iqbal Alam

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

Mohd. Javed Naim[1], Ozair Alam[1]*, Md. Jahangir Alam[1], Md. Quamrul Hassan[2], Nadeem Siddiqui[1], V.G.M. Naidu[3] and Md. Iqbal Alam[4]

[1] Medicinal Chemistry and Molecular Modelling lab, Department of Pharmaceutical Chemistry, School of Pharmaceutical Education and Research, Jamia Hamdard, New Delhi-110062, India

[2]Department of Pharmacology, School of Pharmaceutical Education and Research, Jamia Hamdard, New Delhi-110062, India

[3]Department of Pharmacology and Toxicology, National Institute of Pharmaceutical Education and Research, Hyderabad-500037, India

[4]Department of Physiology, Hamdard Institute of Medical Sciences & Research, Jamia Hamdard, New Delhi, 110062, India

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 (PPARγ) 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; PPARγ; Gene expression; Molecular docking; Thiazolidinedione; Pyrazole.

Corresponding author:

Dr. Ozair Alam

Assistant professor
Medicinal Chemistry and Molecular Modelling lab
Dept. of Pharmaceutical Chemistry
School of Pharmaceutical Education and Research
Jamia Hamdard, New-Delhi-110062, INDIA
E mail: dr.ozairalam@gmail.com
oalam@jamiahamdard.ac.in