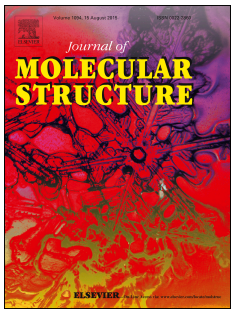
Accepted Manuscript



Novel pyrano [3,2-b]xanthen-7(2*H*)-ones: Synthesis, antimicrobial, antioxidant and molecular docking studies

Dongamanti Ashok, Mohan Gandhi Devulapally, Vikas Kumar Aamate, Srinivas Gundu, Shaik Adam, S.D.S. Murthy, Sridhar Balasubramanian, Baindla Naveen, Tigulla Parthasarathy

PII: S0022-2860(18)31040-8

DOI: 10.1016/j.molstruc.2018.08.091

Reference: MOLSTR 25612

To appear in: *Journal of Molecular Structure*

Received Date: 29 April 2018

Revised Date: 25 August 2018

Accepted Date: 28 August 2018

Please cite this article as: D. Ashok, M.G. Devulapally, V.K. Aamate, S. Gundu, S. Adam, S.D.S. Murthy, S. Balasubramanian, B. Naveen, T. Parthasarathy, Novel pyrano [3,2-b]xanthen-7(2*H*)-ones: Synthesis, antimicrobial, antioxidant and molecular docking studies, *Journal of Molecular Structure* (2018), doi: https://doi.org/10.1016/j.molstruc.2018.08.091.

Novel pyrano [3,2-*b*]xanthen-7(2*H*)-ones: Synthesis, antimicrobial, antioxidant and molecular docking studies

Ashok Dongamanti,[a,*] Mohan Gandhi Devulapally,[a] Vikas Kumar Aamate,[a] Srinivas Gundu,[a] Shaik Adam,[b] Murthy S. D. S,[b] Sridhar Balasubramanian,[c] Naveen Baindla[d] and Parthasarathy Tigulla[d]

[a] *Green and Medicinal Chemistry Lab, Department of Chemistry, Osmania University, Hyderabad-500 007, Telangana State, India*

[b] *Nanotechnology laboratory, Institute of frontier technology, Regional Agricultural Research Station (RARS), Tirupati, Andra Pradesh, India.*

[c] *X-ray Crystallography Division, CSIR-Indian Institute of Chemical Technology, Hyderabad-500 007, Telangana State, India.*

[d] *Department of Chemistry, Osmania University, Hyderabad-500 007, Telangana State, India.*

∗ Corresponding author Tel.: +91-9391024769; e-mail: ashokdou@gmail.com.

Abstract A simple, efficient, and eco-friendly synthetic protocol has been developed for the synthesis of pyranoxanthenes via one pot three-component reaction. This reaction is between aromatic aldehyde, 2,2-dimethylchroman-7-ol and 1,3-cyclohexanedione by using molecular iodine in AcOH as a reaction medium under microwave irradiation. Utilizing this protocol a variety of xanthene derivatives were synthesized in excellent yields. The synthesized compounds were established based on the spectral data and single crystal X-ray diffraction analysis of **6f**. The synthesized compounds were evaluated for their *in vitro* antimicrobial and antioxidant activity. The results clearly demonstrated that compounds **6j**, **6m** and **6n** exhibited significant antibacterial activity against bacterial strains. The results of the molecular docking studies supported the antibacterial activity of the synthesized compounds.

Keywords: Xanthenes, Chroman ring, Microwave irradiation, Antimicrobial activity, Antioxidant activity, Molecular docking;