

Serbian Chemical Society  
Serbian Young Chemists' Club



# Eight Conference of the Young Chemists of Serbia

## *Book of Abstracts*

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**Organic chemistry**

## Supramolecular architectures of selected xanthenedione derivatives

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The wide range of pharmacological activities (e.g. antiviral, antifungal, antibacterial, antiinflammatory, leishmanicidal and antidepresant) has already been attributed to the xanthenediones, a group of synthetic heterocyclic compounds possessing a pyran nucleus fused on either side with cyclohex-2-enone rings [1]. In this work, two 3,3,6,6-tetramethyl-9-substituted-3,4,5,6,7,9-hexahydro-1H-xanthene-1,8(2H)-diones (Figure 1) were synthesized and their crystal structures were determined by single crystal X-ray diffraction. The main structural feature in compound **1** is a supramolecular chain along the *a*-axis formed by O4–H4···O2 hydrogen bond and C13–H13···O4 and Br1···Br2 interactions between the adjacent asymmetric units, while the formation of supramolecular network is further achieved by C–H··· $\pi$  interactions between the adjacent chains. The main motif in **2** is a dimer formed *via* O4–H4···O2 hydrogen bond and C11··· $\pi$  interactions. The neighbouring dimers are connected through strong C7–H7A··· $\pi$  interactions, thus resulting in formation of a zigzag chain parallel to the *c*-axis. Weak C–H··· $\pi$  interactions link the adjacent chains into a supramolecular layer. This work may provide a basis for design of new biologically active xanthenediones both at the molecular and supramolecular level.

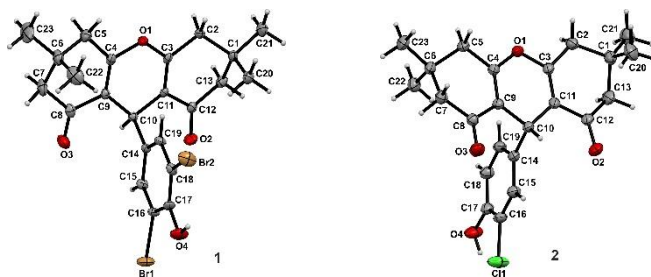


Figure 1. The asymmetric unit of **1** and **2** showing 30% displacement ellipsoids (the H atoms are presented as small spheres of arbitrary radii).

### References

1. I. E. Poly da Silva, M. Lopes da Silva, R. S. Dias, E. G. Santos, M. C. Brangioni de Paula, A. Silva de Oliveira, A. F. Costa da Silveira Oliveira, F. Marques de Oliveira, C. Canedo da Silva, R. R. Teixeira, S. Oliviera de Paula, *Microbes Infect.* **2020**, 22(9), 489.

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