



31st October - 01st November 2019
Iasi, Romania



PI-19. The cytotoxic properties of a halogenated 1,3-dithiolium flavonoid

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Flavonoids represent a wide class of plant polyphenols with a promising range of biological properties [1]. This work presents the cytotoxic effects of a 1,3-dithiolium flavonoid which displays good antibacterial properties against both Gram positive and Gram negative microorganisms [2].

Three cell lines were used in this study, Normal Human Dermal Fibroblasts (NHDF), Human osteosarcoma (HOS) and MCF7 cell lines. MTS assay revealed that the flavonoid displays an increased cytotoxic effect against HOS versus NHDF cells, when used in concentrations between 1.7-8 $\mu\text{g/mL}$. Moreover, for concentrations between 3.3-6.4 $\mu\text{g/mL}$, MCF7 cells are more affected than NHDF cells. At concentrations below 1 $\mu\text{g/mL}$, however, none of the three tested cell lines were affected. Using a live/dead staining test for a concentration of 5 $\mu\text{g/mL}$, it was confirmed that indeed, NHDF cells are notably less affected than HOS and MCF7 cancerous cells are.

In conclusion, the tested flavonoid displayed reduced cytotoxicity against the tested cell lines at low concentrations, with a slight selectivity for cancerous versus normal cells.

Acknowledgements: CNCS - UEFISCDI support within PNCDI III is acknowledged by LGS and LGB for project numbers PN-III-P1-1.1-PD-2016-0962 and PN-III-P1-1.1-PD-2016-1117, respectively. Romanian Ministry of Research and Innovation support within the Program 1 – Development of the national RD system, Subprogram 1.2 – Institutional Performance – RDI excellence funding projects, Contract no. 34PFE/19.10.2018 is acknowledged by LGS and MLB.

DP acknowledges the support provided by H2020 WIDESPREAD 2-2014: ERA Chairs Projectno 667387: SupraChem Lab Laboratory of Supramolecular Chemistry for Adaptive Delivery Systems ERACHair initiative and by the Romanian Ministry of Research and Innovation, CNCS-UEFISCDI, project number PN-III-P1-1.1-TE-2016-1180, within PNCDI III. MLB is indebted to the Alexander von Humboldt Foundation for a stay in Braunschweig.

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