Name and surname	**Witold Gładkowski**
Academic Degree	dr hab. inż. (DSc.)
Institute/Department	Department of Biocatalysis and Food Chemistry
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ORCID	0000-0002-3271-779X
UPWr Base of Knowledge - link	https://bazawiedzy.upwr.edu.pl/info.seam?id=UPWr993e480ebb5f4fb396256126b3c67ec1
Researchgate	
Personal website / Working group website	https://upwr.edu.pl/badania/wiodace-zespoly-badawcze/biokataliza-i-aktywnosc-biologiczna-bioactiv/zespol
Participation in projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca))	Research project no 2018/31/B/NZ9/00602 "Study of the physicochemical and biological properties of sterol glycerides and their products formed during thermal oxidation" financed by National Science Centre, 2019-2023 (RF).
Do you plan to engage support of second supervisor or auxiliary supervisor?	NO
PhD topic	**Synthesis and biological activity of optically active alfa-methylenelactones with aromatic ring**
Research discipline in Doctoral School	Biological Sciences
Short description of the research problem to be solved in the PhD (minimum 1000 characters)	The essence of the research problem is to obtain new lactone derivatives containing an alpha-methylene group in their structure and to correlate the structure of the obtained compounds with their biological properties, in particular anti-cancer ones. The work will be of an interdisciplinary nature, including the synthesis of new compounds, determination of their structure, antiproliferative activity and interactions with tumor cell membranes. The resulting series of new, optically active α-methylene-β-arylhalolactones will be subjected to in vitro tests for growth inhibitory activity cancer cells. For the most active derivatives, the interaction with various membrane models will be investigated: from the simplest monocomponent, through a mimetic membrane with a lipid composition that mimics a cancer cell, to membranes of cancer cells. The implementation of the project will therefore answer the question of what is the influence of the introduction of a double bond, especially of the α-methylene group, on the biological activity within the studied group of lactones. As part of the structure-activity correlation, the influence of different structural factors, such as spatial structure (configuration of stereogenic centers, spatial orientation of the lactone and aromatic rings), the type and position of substituents in the aromatic ring, the type of halogen atom in the molecule or the degree of double bond substitution, will also be examined.
Professional skills for PhD candidate (e.g. master program, specializations, softwares, language, analytical techniques, minimum 500 characters)	Master of Science in the field of biotechnology or chemistry, basic knowledge of the English language, basic knowledge of chromatographic and spectroscopic techniques and techniques of synthesis and purification of organic compounds, basic knowledge of biology and biotechnology, the ability to work with enzymes, the ability to present results at scientific conferences, communication skills, availability .
Details of the project to support PhD research	
a) Project title	none
b) Agreement number	none
c) Number of months in the project to support PhD (in months; starting from 1st of October 2022)	0
d) Project website	