Name and surname:	**Teresa Olejniczak**
Academic Degree:	prof. dr hab. (Prof.)
Institute/Department:	Department of Food Chemistry and Biocatalysis
e-mail address:	teresa.olejniczak@upwr.edu.pl
ORCID:	0000-0001-6156-5820
UPWr Base of Knowledge - link:	https://bazawiedzy.upwr.edu.pl/info/author/UPWr283c1ea8d9a84d799a1cf703f17868a1/
Researchgate:	https://www.researchgate.net/profile/Teresa-Olejniczak
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)):	no project
Do you plan to engage support of second supervisor or auxiliary supervisor?	YES
	Auxiliary supervisor
Name and surname:	Ewa Szczepańska
Academic Degree:	dr inż. (Dr. Eng.)
Faculty, Institute/Department:	Department of Food Chemistry and Biocatalysis
e-mail address:	ewa.szczepanska@upwr.edu.pl
ORCID:	0000-0001-7088-2473
UPWr Base of Knowledge - link or most important publications from last 3 year (JCR) / patents from last 3 years (maximum 5):	https://bazawiedzy.upwr.edu.pl/info/author/UPWr097d55b819ad4080addf8a4ae63aa1d7/
Researchgate:	https://www.researchgate.net/profile/Ewa-Szczepanska
Personal website / Working group website:	https://upwr.edu.pl/badania/wiodace-zespoly-badawcze/biokataliza-i-aktywnosc-biologiczna-bioactiv/zespol
Projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	LIDER project (NCBiR) Development of biotechnological production of vanillin using by-products of the agri-food industry Project manager at UPWr: Ewa Szczepańska, start date 01/01/2022, end date 01/01/2025, in progress
PhD topic:	The phenomenon of synergism as a factor limiting drug resistance of microorganisms
Research discipline in Doctoral School:	Biotechnology
Short description of the research problem to be solved in the PhD (minimum 1000 characters):	In recent decades, we have been struggling with drug resistance of pathogenic microorganisms. Research related to this subject is carried out in many research laboratories. Understanding the mechanisms of drug resistance is important, but from a practical point of view, there is a need to select new groups of compounds with fungistatic activity that may replace the existing antibiotics in the future. In recent years, we have selected a group of natural compounds with high fungistatic activity. We also have newly synthesized 1,2,3-triazole derivatives with structures similar to fluconazole. Based on preliminary studies, we believe that the mechanism of action of a selected group of natural compounds and azole derivatives is different. There is a need for research on the fungistatic activity of these compounds at the molecular and biochemical level. We assume that if the mechanism of action of these selected natural and azole compounds is different, they should be applied simultaneously. By conducting analyses, it is possible to check whether their action is synergistic or even antagonistic. The phenomenon of synergism may be a factor that reduces the drug resistance of microorganisms.
Professional skills for PhD candidate (e.g. master program, specializations, softwares, language, analytical techniques, minimum 500 characters):	Graduate of biotechnology or biology with a specialization in microbiology, interested in scientific work. Basic knowledge of biochemistry, microbiology and molecular biology is required. Experience, passion for science and a sense of duty, good time management and the ability to work in a team are welcome. The assigned tasks will require systematic work and thorough study of the literature. Knowledge of English at a communicative level is necessary for studying literature and writing scientific publications.
a) Project title:	0
b) Agreement number:	0
c) Number of months in the project to support PhD student (in months; starting from 1st of October 2024):	0
Project website:	