

Name and surname:	Anna Gliszczyńska
Academic Degree:	prof. dr hab. inż. (Prof.)
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UPWr Base of Knowledge - link:	https://bazawiedzy.upwr.edu.pl/info.seam?id=UPWr9dfc420dff3c4125b0fbedecba7b78b9&affil=&lang=pl
Researchgate:	
Personal website / Working group website:	https://www.researchgate.net/profile/Anna-Gliszczyńska/research
Participation in projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	Optymalizacji procesu ekstrakcji związków biologicznie aktywnych z wybranych odmian konopi włóknistych pod kątem otrzymania produktu o wysokiej stabilności i pożądanym parametrach organoleptycznych i fizykochemicznych* (DWD/5/0065/2021) (PI)
Do you plan to engage support of second supervisor or auxiliary supervisor?	YES
	Second supervisor (from other discipline, Polish or international research unit)
Name and surname:	Eliana Souto
Academic Degree:	dr hab. (Dr. Sc.)
Faculty, Institute/Department:	Faculty of Pharmacy, University of Porto
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ORCID:	https://orcid.org/0000-0002-9737-6017
UPWr Base of Knowledge - link or most important publications from last 3 year (JCR) / patents from last 3 years (maximum 5):	https://www.webofscience.com/wos/author/record/T-1645-2019
Researchgate:	https://www.researchgate.net/profile/Eliana-B-Souto
Personal website / Working group website:	https://www.scopus.com/authid/detail.uri?authorid=8839435500
Participation projects in last 5 years (chronological; with distinction into PI (kierownik) and RF (wykonawca)):	13/SI/2020 – Project 49865: OliveBioExtract: Sustainable valorization of olive pomace in an integrated value chain using innovative processes for zero waste (Principal Investigator). M-ERA-NET/0004 - PAIRED: Magnetically and photochemically actuated bioactive Nanowires for remotely controlled drug delivery (Principal Investigator).
PhD topic:	Development of ATRA-loaded lipid nanoparticles for effective delivery for cancer treatment
Research discipline in Doctoral School:	Biotechnology
Short description of the research problem to be solved in the PhD (minimum 1000 characters):	Retinoids are a group of compounds that exhibit activity characteristic of vitamin A, which, due to their significant effect on processes regulating cell division, have found wide application in the pharmaceutical and cosmetic industries. In this group, all-trans-retinoic acid (tretinoin, ATRA) is regarded as the most active retinoid, which inhibits the proliferation and enhances the differentiation of cancer cells by inducing the processes of apoptosis or inhibition their growth in a specific phase of the cell cycle. ATRA is clinically used to treat acute promyelocytic leukemia, however, this therapy is associated with serious side effects. A significant number of patients suffer from develop during therapy retinoic acid syndrome which is characterized by fever, respiratory distress, weight gain, hypertension or kidney failure. Sometimes also the resistance to ATRA is developed and a decrease of this drug in the blood due to increased metabolism is observed. Hence, the past two decades many new ATRA formulations with reduced side effects have been developed. The most promising strategy in this regard is the production of lipid formulations of retinoic acid that could also be administered to patients. However, the liposomal, microemulsion forms of ATRA developed to date have significant practical limitations, chief among which is the lack of physical stability. Based on that the study will focus on 1) design and production of new generation lipid nanoparticles, customized on the surface for effective targeted delivery of ATRA as well as its derivatives, 2) optimization and physicochemical characterization of nanoparticles in order to effectively deliver this drug (and derivatives) to enhance the oral bioavailability, 3) assessment of the long-term stability of ATRA-loaded nanoparticles under different stress conditions, 4) study of the biopharmaceutical properties of fabricated nanoparticles 5) in vitro proof of concept using selected cancer cell line models of developed nanoparticles, also in combination therapy with other commercially used cytostatics.
Professional skills for PhD candidate (e.g. master program, specializations, softwares, language, analytical techniques, minimum 500 characters):	Master's degree in biotechnology, chemistry, biology, pharmaceutical sciences, or other related fields, basic knowledge in the field of natural products and/or nanotechnology basic laboratory skills ability to independently plan and organize experimental work, ability to work in a team, involvement and commitment with scientific tasks, availability to do research work, fluent in English language (at the minimum B2 level)
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:	