

Prospective supervisor's form

Name of the supervisor: Gabriel Iwona

Academic title: Ph.D, D.Sc, Eng.

Orcid ID number: <https://orcid.org/0000-0003-0833-5596>

Gdańsk University of Technology Faculty of Chemistry

Department of Pharmaceutical Technology and Biochemistry

Phone: +48 583486078

E-mail: iwona.gabriel@pg.edu.pl

Personal web page: <https://pg.edu.pl/> -

Discipline: chemical sciences [NCh] none

Optional

Key words (obligatory four key words describing research interests / expertise):

antimicrobials

inhibitors

enzymology

candida

Bibliometric indicators

1. Number of journal publications in WoS/ Scopus 22/20

2. Citations excluding self-citations WoS 233 Scopus 237

3. Hirsch index WoS 8 Scopus 8

1. The number of PhD students who have graduated under your supervision: 0

2. The number of PhD students currently supervised:

a. within the current doctoral school 0

b. within doctoral studies (previous system) 0

3. Are you currently accepting new PhD students:

a. Polish Yes/No Yes

b. Foreign Yes/No Yes

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Research interests or topics offered for PhD research (no more than 2000 characters)ⁱⁱ

Opportunistic pathogenic *Candida* species remain one of the leading causes of systemic mycosis worldwide. The repertoire of antifungal chemotherapeutic agents is very limited. Although new antifungal drugs such as lanosterol 14 α -demethylase and β -glucan synthase inhibitors have been introduced into clinical practice, the development of multidrug resistance has become increasingly significant. The urgency to expand the range of therapeutic options for the treatment of fungal infections has led researchers in recent decades to seek alternative antifungal targets to the conventional ones currently used. Among them, many compounds containing an acridine scaffold have been synthesized and tested. The future project will be focused on (1) the synthesis of amino acids / peptide acridinone and acridine derivatives and their purification with the use of high-performance liquid chromatography; (2) determination of antifungal activity and mechanism of action (e.g. the analysis of the effect of analyzed derivatives on biofilm formation, permeabilizing and hemolytic activity studies, microscopic studies, DNA/RNA intercalation and yeast topoisomerase II inhibition analysis. Strong background in chemistry, microbiology and molecular biology is required from candidates.

Funding or special equipment needed to carry out a PhD projectⁱⁱⁱ:

1. Is funding available for experimental work: *Yes/No/not needed*

Yes

2. Is the equipment needed to complete a PhD project

available in your lab/department: *Yes/No/not needed*

Yes

Most important publications no more than 5 published after 1.01.2018

No	Authors/title/journal	Number of points according to the current list of the Ministry of Science and Higher Education	Publication year
1.	Rzad, K; Milewski, S; Gabriel, I; Versatility of putative aromatic aminotransferases from <i>Candida albicans</i> . FUNGAL GENETICS AND BIOLOGY, 2018, 110: 26-37	100	2018
2.	Kwiatkowska-Semrau, K; Wojciechowski, M; Gabriel, I, Crucho S; Milewski S; Modification of quaternary structure of <i>Candida albicans</i> GlcN-6-P synthase and its desensitization to inhibition by UDP-GlcNAc by site-directed mutagenesis. BIOCHIMICA ET BIOPHYSICA ACTA-PROTEINS AND PROTEOMICS, 2018, 1866	70	2018

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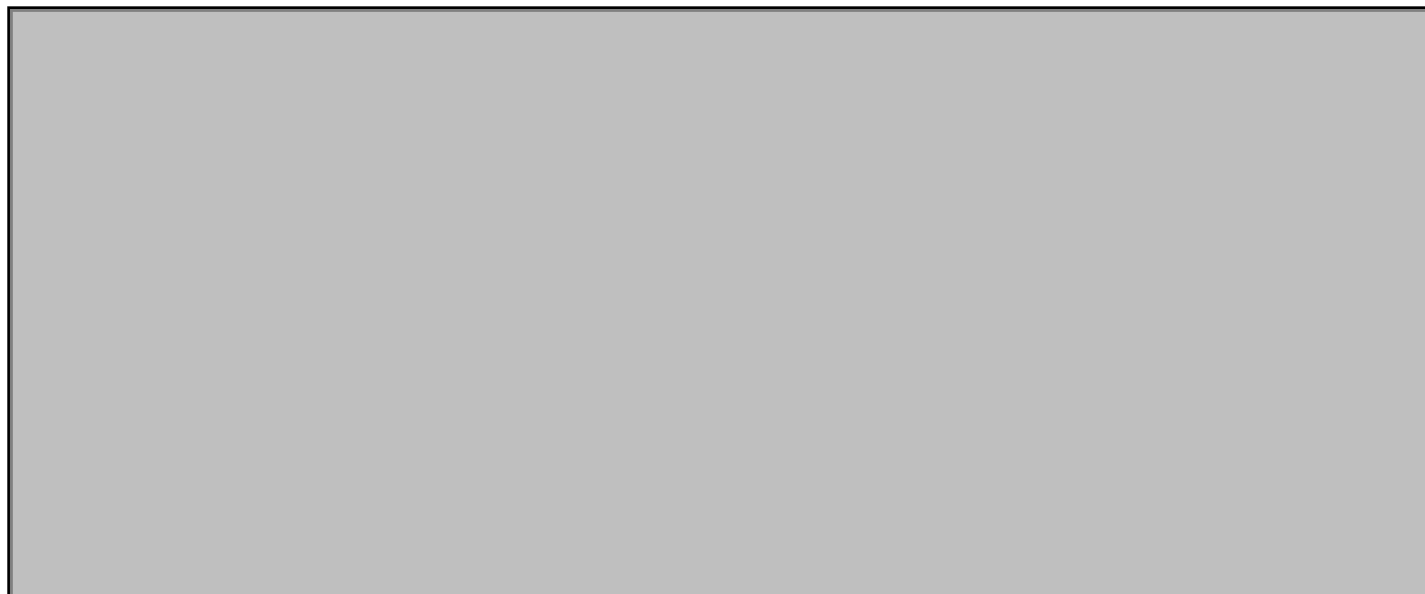
3.	Kiliszek, A; Rypniewski, W; Rząd, K; Milewski, S; Gabriel, I; Crystal structures of aminotransferases Aro8 and Aro9 from <i>Candida albicans</i> and structural insights into their properties. JOURNAL OF STRUCTURAL BIOLOGY, 2019, 205 (3): 26-33	100	2019
4.	Gabriel, I; 'Acridines' as New Horizons in Antifungal Treatment. Molecules, 2020, 25 (7) pii: E1480. doi: 10.3390/molecules25071480	100	2020
5.			

Most recent externally funded projects you were involved in – no more than 3

No	Project title, the name of the Principal Investigator (PI) and the institution the project was carried out	Years	Role in the project ^{iv}
1.	The unique fungal lysine biosynthesis enzymes: new targets for antifungal agents? Grzybowy szlak biosyntezy lizyny: nowy cel molekularny w chemoterapii przeciwgrzybowej? Gabriel Iwona, Fundacja na Rzecz Nauki Polskiej (Foundation for Polish Science)	2011-2014	PI
2.	Aromatic aminotransferases from <i>Candida albicans</i> as molecular targets for antifungal chemotherapy. Aromatyczne aminotransferazy z <i>Candida albicans</i> jako cele molekularne w chemoterapii przeciwgrzybowej. Gabriel Iwona, Narodowe Centrum Nauki (NCN) (National Science Centre)	2016-2019	PI
3.	Analiza strukturalna i funkcjonalna enzymów biosyntezy glukozamino-6-fosforanu. S. Milewski, Ministry of Science and Higher Education.	2010-2013	R

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Additional relevant informatio (no more than 1600 characters)^v



ⁱ You may select up to two disciplines out of 12 disciplines represented in the Doctoral School

ⁱⁱ Observe the limit of not more than 2000 characters

ⁱⁱⁱ Leave only one answer

^{iv} Select the role in the project: PI stands for principal investigator (refers to the holder of an independent grant and the lead researcher for the grant project), Co-I for co-investigator (Co-I assists the principal investigator in the management and leadership of the research project), R for researcher

^v Add any other relevant information e.g. awards for PhD students whom you supervised (no more than 1600 characters)