

EXPORT ÚDAJŮ O STUDIJNÍM PROGRAMU

Pharmacy Farmaceutická fakulta

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Sestavu vytvořila: PharmDr. Tünde Ambrus, Ph.D., učo 245375

1 Základní údaje o studijním programu

Pharmacy

<i>Garant</i>	prof. PharmDr. Karel Šmejkal, Ph.D.	<i>Standardní doba studia</i>	4 r.
<i>Fakulta</i>	Farmaceutická fakulta	<i>Zkratka</i>	D-FARMA
<i>Forma</i>	prezenční a kombinovaná	<i>Titul</i>	Ph.D.
<i>Ve spolupráci s</i>	—	<i>Kód</i>	P0916D***
<i>Typ</i>	doktorský	<i>Vyučovací jazyk</i>	angličtina
<i>Oblast vzdělávání</i>	Farmacie (100 %)	<i>Stav</i>	v přípravě

1.1 Charakteristika programu

Cíle

The aim of studying in the Ph.D. study program in Pharmacy is in consequence to the obtained undergraduate master's education to significantly deepen the student's education in the field of pharmaceutical sciences, with a narrower profile in accordance with the professional focus of the dissertation. The aim of the study is to develop the student's knowledge and skills, leading to independent creative activity, publication, and presentation of results in scientific journals and professional forums. The study should also develop the student competencies necessary to pass on their knowledge and experience not only to undergraduate students, but also to the professionals and general public in academia. It should also give students the knowledge necessary for industrial application of research. Furthermore, studying the PhD program in Pharmacy should significantly develop the ability of the students to work in a team and intercultural communication in international/foreign spaces. Last but not least, the study will support the development of critical and analytical thinking based on scientific evidence. The individual workplaces of the Faculty of Pharmacy cover all aspects of research and development in pharmacy. The studies are therefore realized all areas of research in the field of pharmacy and includes a wide range of branches from experimental and clinical pharmacology, pharmacognosy, pharmaceutical chemistry, pharmaceutical technology, and molecular biology in the field of pharmacy to pharmacoconomics and social pharmacy.

Interdisciplinary topics are possible and wanted. A close connection exists between the individual laboratories of the faculty's institutes, and the workplaces cooperate to solve multidisciplinary problems within their technological capabilities. The individual workplaces of faculty develop international cooperation and allow to benefit students from such contacts.

The faculty organizes joint professional seminars and Ph.D. conferences of candidates. Students are motivated by the high professional quality of research in a competitive, yet collaborative and open environment. The performance of individual students is valued both financially and also, for example, in the form of participation in prestigious foreign conferences.

The Ph.D. study program in Pharmacy is conducted in the Czech language, but all subjects can be taught in English, depending on the student's language preferences. In the same way, study literature and scientific literature are available in English, and the English language is also recommended for the preparation of the dissertation and its defense.

Výstupy z učení

Absolvent je po úspěšném ukončení studia schopen:

1. independently apply different research approaches and methods used in pharmaceutical sciences in accordance with his/her profile, with a link to the topic of the dissertation and its wider context
2. systematically apply the acquired interdisciplinary perspective and theoretical knowledge from the field of pharmaceutical and related sciences in solving research questions and practical problems in pharmacy
3. use relevant classical and electronic information sources to obtain scientific information and process literary research
4. process and present the results of his/her scientific work in the form of various outputs (dissertations, peer-reviewed publications, conference papers, etc.) in English language
5. provide individual and team work and highly professional work activities in a domestic and international environment
6. independently lead various forms of teaching in undergraduate study program subjects, lifelong learning courses and implement educational activities with a focus on the professional and lay public
7. to utilize the acquired knowledge and skills in applied research
8. to participate or to prepare grant application

Uplatnění absolventa

Graduates of the Ph.D. study program in Pharmacy can find the employment in academic and research institutions as academic, research and development workers, as well as in management positions in the application sphere, which require the ability to independently perform highly specialized activities and a broad overview of the field (e.g., managerial positions in the pharmaceutical industry, healthcare facilities, regulatory authorities). If a graduate of a doctoral study program did not complete a master's degree in the field of Pharmacy during his undergraduate studies, completion of the doctoral study program entitles him only to scientific work in the completed doctoral field, not to the practical performance of the profession of pharmacist.

Cíle kvalifikačních prací

Elaboration of a dissertation is a mandatory part of the study process in the doctoral study program. The aim of the dissertation is to demonstrate the student's ability to make an original contribution to the acquisition of new scientific knowledge and its application. The dissertation can be written in Czech, Slovak or English, currently English is preferred due to the field of studies. The work must contain new research findings that the student has obtained independently or in collaboration with other members of the research team, and which have been published or accepted for publication in internationally recognized peer-reviewed scientific journals.

The dissertation can also be submitted in the form of a set of works already published or works accepted for publication on the given topic, which the student provides with a comprehensive introduction to the issue and a commentary.

If the dissertation contains a result created with the contribution of another author, the student's declaration of the scope of his creative contribution for each such result is part of the dissertation.

The formal content (length, language, requirements for the publication activity on which the dissertation is based) is described in the faculty guidelines.

https://www.pharm.muni.cz/media/3415616/smernice_c_1_2021_studium_dsp.pdf

1.2 Studijní plány

1.2.1 Pharmacy (prezenční, jednooborový)

<i>Kód</i>	DFARMA001
<i>Zkratka</i>	DFARMAPrez
<i>Forma</i>	doktorský prezenční
<i>Stav</i>	v přípravě

Státní doktorská zkouška a obhajoba disertační práce

The state doctoral examination consists of a dissertation defense and an oral examination in the chosen field of the Pharmacy doctoral program. As part of the state doctoral examination, deep theoretical knowledge is required in the chosen study program with a focus on a specialized subfield of study (Pharmacognosy and Phytochemistry, Pharmacology, Medicinal Chemistry, Pharmaceutical Technology, Social and Clinical Pharmacy). It is possible to take the state doctoral examination after fulfilling the required obligations (passing the prescribed exams, obtaining the prescribed number of credits, submitting the dissertation and authorship of the DSP student on at least one publication in a scientific impact journal, where the student must be the first or corresponding author.

Studijní a výzkumné povinnosti

- 1) Within the educational part, the student completes the compulsory subjects Current Trends in Pharmaceutical Research as well as at least two subjects from compulsory elective subjects. The student chooses the subjects in such a way that they are related to the topic of his dissertation, and writes them down in the Individual Study Plan.
- 2) The activities and duties of doctoral students leading to the dissertation, whether study, research or other, accumulate at least 120 and at most 160 ECTS credits.
- 3) Demonstration of the ability to present knowledge gained through creative activity, within the framework of at least one contribution in a professional journal and/or two contributions at a conference, or in other recognized similar forms of applying the results of scientific and research activities.
- 4) Publication of at least one scientific article in a journal with an impact factor with a topic related to the dissertation work, as the first or corresponding author of this article.
- 5) Completion of a part of the study at a foreign institution lasting at least one month (credit evaluation: 5 credits per week + 2 credits for each subsequent week) or participation in an international creative project with results published or presented abroad or another form of direct student participation in international cooperation.
- 6) Demonstration of the ability to present the knowledge gained within the study program, within the framework of teaching for undergraduate students and within the framework of lifelong learning. Teaching duties (max. 120 hours per course), credit evaluation 1 credit per 3 hours.

Návrh témat disertačních prací a témata obhájených prací

Isolation of plant secondary metabolites from selected species/taxons (with a focus on prenylated compounds), their structural analysis and biological activity assessment

Phytochemical analysis of Ficus species and isolation of compounds with antioxidant and anti-inflammatory activity

Isolation and analysis of biological active compounds of Schisandra chinensis

Development of innovative dosage forms using 3D print

Formulation and evaluation of lyophilized parenteral medicinal products

Formulation of a therapeutic system for transport of biologically active compounds to the colon

Evaluation of compatibility and determination of stability of selected medicines administered by infusion systems

Development and production of a dosage form containing a probiotic

A new bioactive hemostatic based on collagen and cellulose

Preparation of iminosulfurans as substances with potential biological activity

Preparation of new modified poly- and oligosaccharides as substances for pharmaceutical use

Innovation of analytical methods in the Czech Pharmacopoeia

Design, synthesis and screening of antimicrobial and cytotoxic activity of new (thio)semicarbazide derivatives and their cyclic analogues

New potential inhibitors of human carbonic anhydrases: synthesis and evaluation of biological activity

Synthesis and study of properties of selected cinnamic acid derivatives

Development and synthesis of new fluorescent probes based on cyanine dyes

Use of imaging methods in stroke research

Development of new chromatin modifying substances for anticancer therapy

Design and synthesis of new fluorophores for the detection of biomolecules

Determination of medicine-important sugars / sugar alcohols by HPLC with evaporative light-scattering detector (ELSD)

Real-world data on rare diseases and the possibilities of their use in HTA

Předměty ve studijním plánu

Obligatory courses

Kód	Název	Garant	Uk.	Rozsah ⁺	Kreditů	Sem.
FDAJa_FAF	English Language for Academic and Scientific Purposes	R. Prucklová	zk	0/1/0	10	-
FDATa_FAF	Current Trends in Pharmaceutical Research	K. Šmejkal	zk	1/0/0	10	-
FDZEa_FAF	Basics of Scientific Work and Research Ethics	K. Šmejkal	zk	1/0/0	10	-
30 kreditů						

Dissertation Thesis

Kód	Název	Garant	Uk.	Rozsah ⁺	Kreditů	Sem.
FDaDIS_FAF	Dissertation Thesis	K. Šmejkal	z	0/0	160	-
160 kreditů						

Selective courses - Group I (min. 1 course required)

Kód	Název	Garant	Uk.	Rozsah ⁺	Kreditů	Sem.
FDFCa_FAF	Medicinal Chemistry	J. Csöllei	zk	2/0/0	8	-
FDFFa_FAF	Pharmacognosy and Phytochemistry	K. Šmejkal	zk	2/0/0	8	-
FDFLa_FAF	Pharmacology	P. Kollár	zk	2/0/0	8	-
FDFTa_FAF	Pharmaceutical Technology	D. Vetchý	zk	2/0/0	8	-
FDSFa_FAF	Social and Clinical Pharmacy	J. Kolář	zk	2/0/0	8	-
40 kreditů						

Selective courses - Group II (min. 1 coursesrequired, 2-3 courses recommended)

Kód	Název	Garant	Uk.	Rozsah ⁺	Kreditů	Sem.
FDACa_FAF	Analytical Chemistry	J. Pazourek	zk	2/0/0	5	-
FDALa_FAF	Analysis of Pharmaceuticals	R. Opatřilová	zk	2/0/0	5	-

pokračování na další straně

Kód	Název	Garant	Uk.	Rozsah*	Kreditů	Sem.
FDAMa_FAF	Special Analytical Methods in Pharmaceuticals Manufacture and Quality Control	J. Muselík	zk	2/0/0	5	-
FDBAa_FAF	Biopharmaceutical Aspects of Pharmaceuticals Evaluation	D. Vetchý	zk	2/0/0	5	-
FDBCa_FAF	Biochemistry	M. Brázdová	zk	2/0/0	5	-
FDBFa_FAF	Biological Medicinal Products	O. Farsa	zk	2/0/0	5	-
FDBOa_FAF	Bioorganic Chemistry	O. Farsa	zk	2/0/0	5	-
FDEFa_FAF	Health Economics and Pharmacoconomics	D. Grega	zk	2/0/0	5	-
FDFKa_FAF	Pharmacokinetics	T. Kauerová	zk	2/0/0	5	-
FDFPa_FAF	Pharmaceutical Care and Evidence-Based Clinical Practice	K. Vašut	zk	2/0/0	5	-
FDFRa_FAF	Plant Physiology and Anatomy	P. Babula	zk	2/0/0	5	-
FDFVa_FAF	Pharmacovigilance	H. Kotolová	zk	2/0/0	5	-
FDFYa_FAF	Physical Chemistry	D. Vetchý	zk	2/0/0	5	-
FDHsa_FAF	Basics of Humanities and Social Sciences in Pharmacy	T. Ambrus	zk	2/0/0	5	-
FDLfa_FAF	Dosage Forms with Controlled Drug Release and Targeting	K. Kubová	zk	2/0/0	5	-
FDMBa_FAF	Microbiology	A. Sychrová	zk	2/0/0	5	-
FDMHa_FAF	Methods of Evaluation and Formulation Dossiers of Pharmaceuticals	D. Vetchý	zk	2/0/0	5	-
FDMOa_FAF	Molecular Biology	M. Brázdová	zk	2/0/0	5	-
FDMUa_FAF	Mechanisms of Drug Release and their Statistical Evaluation	J. Muselík	zk	2/0/0	5	-
FDNMa_FAF	Physical Principles of NMR	P. Bobál'	zk	2/0/0	5	-
FDOAa_FAF	General and Inorganic Chemistry	T. Goněc	zk	2/0/0	5	-
FDOCa_FAF	Organic Chemistry	P. Bobál'	zk	2/0/0	5	-
FDPFa_FAF	Pathophysiology	P. Suchý	zk	2/0/0	5	-
FDRFa_FAF	Rational Pharmacotherapy	H. Kotolová	zk	2/0/0	5	-
FDSAa_FAF	Separation and Analytical Methods	K. Šmejkal	zk	2/0/0	5	-
FDSBa_FAF	Structural Biology and Chemistry of Drugs	O. Farsa	zk	2/0	5	-
FDTOa_FAF	Pharmaceutical Toxicology	P. Suchý	zk	2/0/0	5	-
FDZVa_FAF	Molecular Principles of Drug Design	O. Farsa	zk	2/0/0	5	-

140 kreditů

Research, publication and teaching activities

Kód	Název	Garant	Uk.	Rozsah*	Kreditů	Sem.
FDaINT_FAF	Study Stay Abroad	P. Bobál'	z	0/0	50	-
FDaPED_FAF	Teaching Activities	P. Bobál'	z	0/0	40	-
FDaPUB_FAF	Publications	P. Bobál'	z	0/0	60	-
FDaRES_FAF	Research Activities	P. Bobál'	z	0/0	50	-

200 kreditů

*Rozsah informuje o týdenní hodinové dotaci v závislosti na formě výuky. Ve formátu (přednáška/cvičení/praktické a jiné aktivity).

1.2.2 Pharmacy (kombinovaný, jednooborový)

Kód	DFARMA002
Zkratka	DFARMAKomb
Forma	doktorský kombinovaný
Stav	v přípravě

Státní doktorská zkouška a obhajoba disertační práce

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- Phytochemical analysis of Ficus species and isolation of compounds with antioxidant and anti-inflammatory activity
- Isolation and analysis of biological active compounds of Schisandra chinensis
- Development of innovative dosage forms using 3D print
- Formulation and evaluation of lyophilized parenteral medicinal products
- Formulation of a therapeutic system for transport of biologically active compounds to the colon
- Evaluation of compatibility and determination of stability of selected medicines administered by infusion systems
- Development and production of a dosage form containing a probiotic
- A new bioactive hemostatic based on collagen and cellulose
- Preparation of iminosulfurans as substances with potential biological activity
- Preparation of new modified poly- and oligosaccharides as substances for pharmaceutical use
- Innovation of analytical methods in the Czech Pharmacopoeia
- Design, synthesis and screening of antimicrobial and cytotoxic activity of new (thio)semicarbazide derivatives and their cyclic analogues
- New potential inhibitors of human carbonic anhydrases: synthesis and evaluation of biological activity
- Synthesis and study of properties of selected cinnamic acid derivatives
- Development and synthesis of new fluorescent probes based on cyanine dyes
- Use of imaging methods in stroke research
- Development of new chromatin modifying substances for anticancer therapy
- Design and synthesis of new fluorophores for the detection of biomolecules
- Determination of medicine-important sugars / sugar alcohols by HPLC with evaporative light-scattering detector (ELSD)
- Real-world data on rare diseases and the possibilities of their use in HTA

Předměty ve studijním plánu

Obligatory courses

Kód	Název	Garant	Uk.	Rozsah [†]	Kreditů	Sem.
FDAJa_FAF	English Language for Academic and Scientific Purposes	R. Prucklová	zk	0/1/0	10	-
FDATa_FAF	Current Trends in Pharmaceutical Research	K. Šmejkal	zk	1/0/0	10	-
FDZEa_FAF	Basics of Scientific Work and Research Ethics	K. Šmejkal	zk	1/0/0	10	-

30 kreditů

Dissertation Thesis

Kód	Název	Garant	Uk.	Rozsah [†]	Kreditů	Sem.
FDaDIS_FAF	Dissertation Thesis	K. Šmejkal	z	0/0	160	-

160 kreditů

Selective courses - Group I (min. 1 course required)

Kód	Název	Garant	Uk.	Rozsah [†]	Kreditů	Sem.
FDFCa_FAF	Medicinal Chemistry	J. Csöllei	zk	2/0/0	8	-
FDFFa_FAF	Pharmacognosy and Phytochemistry	K. Šmejkal	zk	2/0/0	8	-
FDFLa_FAF	Pharmacology	P. Kollár	zk	2/0/0	8	-
FDFTa_FAF	Pharmaceutical Technology	D. Vetchý	zk	2/0/0	8	-
FDSFa_FAF	Social and Clinical Pharmacy	J. Kolář	zk	2/0/0	8	-

40 kreditů

Selective courses - Group II (min. 1 coursesrequired, 2-3 courses recommended)

Kód	Název	Garant	Uk.	Rozsah [†]	Kreditů	Sem.
FDACa_FAF	Analytical Chemistry	J. Pazourek	zk	2/0/0	5	-
FDALa_FAF	Analysis of Pharmaceuticals	R. Opatřilová	zk	2/0/0	5	-
FDAMa_FAF	Special Analytical Methods in Pharmaceuticals Manufacture and Quality Control	J. Muselík	zk	2/0/0	5	-
FDBAa_FAF	Biopharmaceutical Aspects of Pharmaceuticals Evaluation	D. Vetchý	zk	2/0/0	5	-
FDBCa_FAF	Biochemistry	M. Brázdová	zk	2/0/0	5	-
FDBFa_FAF	Biological Medicinal Products	O. Farsa	zk	2/0/0	5	-
FDBOa_FAF	Bioorganic Chemistry	O. Farsa	zk	2/0/0	5	-
FDEFa_FAF	Health Economics and Pharmacoeconomics	D. Grega	zk	2/0/0	5	-
FDFKa_FAF	Pharmacokinetics	T. Kauerová	zk	2/0/0	5	-
FDFFa_FAF	Pharmaceutical Care and Evidence-Based Clinical Practice	K. Vašut	zk	2/0/0	5	-
FDFFa_FAF	Plant Physiology and Anatomy	P. Babula	zk	2/0/0	5	-
FDFFa_FAF	Pharmacovigilance	H. Kotolová	zk	2/0/0	5	-

pokračování na další straně

Kód	Název	Garant	Uk.	Rozsah*	Kreditů	Sem.
FDFYa_FAF	Physical Chemistry	D. Vetchý	zk	2/0/0	5	-
FDHSA_FAF	Basics of Humanities and Social Sciences in Pharmacy	T. Ambrus	zk	2/0/0	5	-
FDLfa_FAF	Dosage Forms with Controlled Drug Release and Targeting	K. Kubová	zk	2/0/0	5	-
FDMBa_FAF	Microbiology	A. Sychrová	zk	2/0/0	5	-
FDMHa_FAF	Methods of Evaluation and Formulation Dossiers of Pharmaceuticals	D. Vetchý	zk	2/0/0	5	-
FDMOa_FAF	Molecular Biology	M. Brázdová	zk	2/0/0	5	-
FDMUa_FAF	Mechanisms of Drug Release and their Statistical Evaluation	J. Muselík	zk	2/0/0	5	-
FDNMa_FAF	Physical Principles of NMR	P. Bobál	zk	2/0/0	5	-
FDOAa_FAF	General and Inorganic Chemistry	T. Goněc	zk	2/0/0	5	-
FDOCa_FAF	Organic Chemistry	P. Bobál	zk	2/0/0	5	-
FDPFa_FAF	Pathophysiology	P. Suchý	zk	2/0/0	5	-
FDRFa_FAF	Rational Pharmacotherapy	H. Kotolová	zk	2/0/0	5	-
FDSAa_FAF	Separation and Analytical Methods	K. Šmejkal	zk	2/0/0	5	-
FDSBa_FAF	Structural Biology and Chemistry of Drugs	O. Farsa	zk	2/0	5	-
FDTOba_FAF	Pharmaceutical Toxicology	P. Suchý	zk	2/0/0	5	-
FDZVa_FAF	Molecular Principles of Drug Design	O. Farsa	zk	2/0/0	5	-

140 kreditů

Research, publication and teaching activities

Kód	Název	Garant	Uk.	Rozsah*	Kreditů	Sem.
FDaINT_FAF	Study Stay Abroad	P. Bobál	z	0/0	50	-
FDaPED_FAF	Teaching Activities	P. Bobál	z	0/0	40	-
FDaPUB_FAF	Publications	P. Bobál	z	0/0	60	-
FDaRES_FAF	Research Activities	P. Bobál	z	0/0	50	-

200 kreditů

*Rozsah informuje o týdenní hodinové dotaci v závislosti na formě výuky. Ve formátu (přednáška/cvičení/praktické a jiné aktivity).

2 Charakteristiky předmětů

Tato kapitola obsahuje charakteristiky povinných a povinně-volitelných předmětů ze šablon studijních plánů. Doktorské studijní programy nemusí obsahovat předměty. Obecné studijní povinnosti, jež musí doktorand splnit, jsou popsány ve studijním plánu v kapitole 1.2.

2.1 Základní teoretické předměty profilujícího základu (Z)

Jedná se o podmnožinu předmětů profilujícího základu (P) (viz 2.2), které jsou pro dosažení profilu absolventa natolik významné, že tvoří zpravidla základní jádro všech studijních plánů studijního programu.

FaF:FDaDIS_FAF **Dissertation Thesis**

Předmět není v aktuálních obdobích! 160 kreditů, ukončení z, garant předmětu prof. PharmDr. Karel Šmejkal, Ph.D.

Vyučující

Žádné informace.

Cíle předmětu

As part of the course, the student will work on the preparation of his dissertation. The preparation of the dissertation includes experimental work, literature research, preparation of texts, whether original publications or literary reviews, consultation of the topic and cooperation with the supervisor.

Výukové metody

Discussion with the supervisor; Independent experimental work; Literary survey

Metody hodnocení

Credits awarded based on work done and completion of given tasks.

Primární způsob výuky

kontaktní

Výstupy z učení

Ability to regularly report work progress; Development of laboratory work skills; Development of the ability to prepare a professional text summarizing the results of experimental activity or available knowledge contained in the literature; Planning of scientific activity.

Osnova

According to the program set by the supervisor as part of the individual study plan.

Literatura

Žádné informace.

FaF:FDAJa_FAF English Language for Academic and Scientific Purposes

Předmět není v aktuálních obdobích! 10 kreditů, ukončení zk, garant předmětu PhDr. Renata Prucklová

Vyučující

PhDr. Renata Prucklová (cvičící)
Mgr. Silvie Schüllerová, Ph.D. (cvičící)

Cíle předmětu

The aim of the course is to develop and improve all language skills, specifically in academic English, in order to understand and make the most effective use of scientific literature, develop the specialised language and vocabulary related to the field of study, interpret assignment questions and select appropriate material for relevant response, write well-structured and coherently presented assignments, as well as communicate and productively work with other colleagues.

Výukové metody

individualized consultation with the tutor, independent learning and further education

Metody hodnocení

Student's performance analysis: WRITTEN EXAMINATION evaluation of submitted written documentation including student's scientific paper, academic CV and PPT presentation based on assessment of the level of interpreting, organising information, reviewing and paraphrasing information, collecting data, searching and managing information sources, observing and interpreting ORAL EXAMINATION assessment of oral presentation of personal, academic and career development a student, delivering PPT presentation and reading, translating and explaining selected phenomena or terminology from a technical text

Primární způsob výuky

kontaktní

Výstupy z učení

- acquire rules and conventions of academic language with emphasis on writing and oral presentation- improve and extend student's knowledge of technical vocabulary
- enhance skills in effective communication with both tutors and colleagues
- improving scientific presentation skills including practice, feedback, and peer evaluation

Osnova

The content of the course is made up of specific topics in the field of academic and professional English corresponding to the particular scientific work (problems of a specific field, workplace, possibilities of international cooperation etc.) and dissertation (topic, practical applications, etc.) of each student.

Literatura**doporučená literatura**

GILLETT, Andy. *Using English for Academic Purposes for Students in Higher Education*. 2018. <http://www.uefap.net/>

BROPHY, Peter. *The Academic Library*. London: Facet Publishing, 2005. ISBN 1-85604-527-7.

FaF:FDATa_FAF Current Trends in Pharmaceutical Research

Předmět není v aktuálních obdobích! 10 kreditů, ukončení zk, garant předmětu prof. PharmDr. Karel Šmejkal, Ph.D.

Vyučující

prof. PharmDr. Karel Šmejkal, Ph.D. (přednášející)

Cíle předmětu

The subject reflects the content of the professional focus and study of the Ph.D. study program Pharmacy. The areas of studied topics are formulated with a focus on current topics and development in the scientific field of pharmacy (pharmacognosy, pharmaceutical chemistry, pharmacology, pharmaceutical technology, social pharmacy). The aim of the subject is to present the student advances in the scientific field related to the field, to show various modern approaches and research methods applied in pharmaceutical sciences in accordance with the student's profile, with a link to the topic of the dissertation and its wider context. The student will acquire deep and generally applicable knowledge in the field of study (pharmacognosy, pharmaceutical chemistry, pharmacology and toxicology, pharmaceutical technology or social and applied pharmacy).

Výukové metody

Consultation Participation in lectures by foreign experts Self study

Metody hodnocení

Examination - oral discussion on selected topics

Primární způsob výuky

kontaktní

Výstupy z učení

The student will be able to: - move in the professional area of your research (according to the focus of study and work) - apply deep knowledge in the field of your research - create an overlap from one's field to relatives

Osnova

According to the focus of work and study, created on the basis of individualized parameters General and detailed knowledge of the chosen field (pharmacognosy, pharmaceutical chemistry, pharmacology and toxicology, pharmaceutical technology or social and applied pharmacy).

Literatura

Žádné informace.

FaF:FDfCa_FAF **Medicinal Chemistry**

Předmět není v aktuálních obdobích! 8 kreditů, ukončení zk, garant předmětu prof. RNDr. Jozef Csöllei, CSc.

Vyučující

prof. RNDr. Jozef Csöllei, CSc. (přednášející)

Cíle předmětu

The subject serves to broaden and deepen the knowledge of biologically active substances according to their classification into individual pharmacotherapeutic groups or according to the classification of the drug in terms of its effect at the molecular level (in terms of its mechanism of action at the level of receptor, enzyme, ion channel, etc.). It also deals with methods of molecular design, study of chemical structure relations and biological activity of pharmaceuticals in relation to physicochemical properties and studies the biological activity of the drug in relation to its spatial arrangement, including the influence of chirality on its efficiency and biotransformation.

Výukové metody

Self-study, work with scientific and professional publications and personal consultations.

Metody hodnocení

ústní zkouška

Primární způsob výuky

kontaktní

Výstupy z učení

Within the course Pharmaceutical Chemistry, the student will acquires basic knowledge in the study of the relationship between chemical structure and biological activity, knowledge of physicochemical and analytical properties of drugs, biochemical and pharmacological properties of potential or in therapeutic practice drugs. In individual therapeutic groups of drugs, he will acquires knowledge about the mechanism of action of drugs at the molecular or enzymatic level and the direction of research of potential drugs using modern analytical and synthetic procedures (drug design, etc.)

Osnova

General knowledge:- nonspecific and specific action of drugs - the importance of physicochemical properties, the binding of the drug to the target endogenous structure
- quantitative relationships between chemical structure and biological activity and molecular modeling in drug development
- drug metabolism - 1st and 2nd phase of biotransformation
Therapeutic drug groups:
- substances affecting the peripheral nervous system
- substances affecting the central nervous system
- substances affecting the cardiovascular and renal system
- drugs that affect blood clotting
- drugs that affect the nociceptive system and the therapy of the locomotory system
- antihistamines, antiallergics, prostanoids, leukotrienes, antiserotoninergics and migraine prophylaxis
- digestive and excretory drugs
- therapy of respiratory diseases
- medicines with an effect on the function of the internal secretion glands
- chemotherapeutics - microbial, viral, parasitic and cancerous diseases

Literatura**doporučená literatura**

Bultinck, P., De Winter, H., Langenaeker, W., Tollenare, J. P.: *Computational medicinal chemistry for drug discovery*, Taylor and Francis, 2003, ISBN: 0824747747.

Cairns, D.: *Essentials of pharmaceutical chemistry*, Deutscher Apotheker Verlag, 2003, ISBN: 3769234006.

Williams D. A., Lemke T L.: *Foye's Principles of Medicinal Chemistry, Fifth Edition*, Lippincot Williams and Wilkins Philadelphia, Baltimore 2002.

Reddy, I. K., Mehvar, R.: *Chirality in drug design and development*, Marcel Dekker, Inc., 2004, ISBN: 0824750624.

Wermuth, C. G.: *The practice of medicinal chemistry*, Elsevier - Harcourt, 2008, ISBN: 012374194.

MALÍK, Ivan. *Farmaceutická chemia protívirusových a vybraných protinádorových liečiv*. Prvé vydanie. Bratislava: Univerzita Komenského Bratislava, 2022, 467 stran. ISBN 9788022353151.

DOLEŽAL, Martin. *Farmaceutická chemie : léčiv působících na kardiovaskulární, trávicí a vylučovací systém*. První vydání. Praha: Univerzita Karlova, vydavatelství Karolinum, 2022, 317 stran. ISBN 9788024651026.

Green chemistry in drug discovery : from academia to industry. Edited by Paul F. Richardson. New York: Humana Press, 2022, xvi, 617. ISBN 9781071615775.

The practice of medicinal chemistry. Edited by Camille Georges Wermuth - David Aldous - Pierre Raboisson - Didier Rog. Fourth edition. Amsterdam: Elsevier, 2015, 1 online. ISBN 9780124172135. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=596616>

DOLEŽAL, Martin. *Farmaceutická chemie léčiv působících na centrální nervový systém*. Vydání 1. Praha: Karolinum, 2013, 188 stran. ISBN 9788024623825.

FaF:FDFFa_FAF Pharmacognosy and Phytochemistry

Předmět není v aktuálních obdobích! 8 kreditů, ukončení zk, garant předmětu prof. PharmDr. Karel Šmejkal, Ph.D.

Vyučující

prof. PharmDr. Karel Šmejkal, Ph.D. (přednášející)

Cíle předmětu

The course is to provide in-depth knowledge of pharmacognosy and phytochemistry, with a special focus on areas close to the content of the dissertation. The content of the course is the issue of drugs and excipients of natural origin used in human and veterinary medicine. Pharmacognosy deals with the search for and study of sources of bioactive natural substances and the possibilities of their biotechnological acquisition. It explains the interrelationships and conditions of the formation of secondary metabolites, the mechanism of their effect and the possibilities of practical use. Within phytochemistry, the course also describes the ingredients, defines their structure, which determines the biological properties, deals with their qualitative and quantitative analysis and biological activity. It uses the procedures and methods described in scientific and professional publications with emphasis on the knowledge of science and research contained in world databases containing knowledge from scientific publications and is necessary to increase the student's ability to process knowledge from the described area of knowledge into research texts.

Výukové metody

Reading, homework, discussion.

Metody hodnocení

Oral examination.

Primární způsob výuky

kontaktní

Výstupy z učení

Deep knowledge of the subject with overlaps into related areas. Ability to independently assess pharmacognostic problems. Knowledge of natural substances, structural characteristics, methods for isolation, biological activities, possible side effects.

Osnova

Pharmacognosy methodology. Natural medicines in relation to Ph.Eur./Ph.B. and mass-produced medicinal products. Pharmacopoeial methods. drug evaluation. Czech Pharmaceutical Code. Standards. Biosynthesis of natural substances, primary and secondary metabolites, precursors, mutual relations. Sugars and their derivatives. Mono-, oligo- and polysaccharides (starches, mucilages, gums), specific sugars. Glycoconjugates. Glycosides, essential oils, steroids, lipids, bitters, alkaloids, tannins, flavonoids, dyes, substances with hormonal action, proteins, peptides, vitamins. Antibiotics, macrolides, cytostatics, fungal components, animal drugs. Natural substances derived from shikimic acid. Natural substances derived from acetic acid. Natural substances derived from mevalonic acid. Natural substances derived from amino acids. Pharmacotherapeutic groups including natural substances. Pharmacokinetics, elimination, interaction potential. Toxicity of natural substances.

Literatura**doporučená literatura**

HEINRICH, Michael, Joanne BARNES, José M. PRIETO GARCIA, Simon GIBBONS a Elizabeth M. WILLIAMSON. *Fundamentals of pharmacognosy and phytotherapy*. Edited by A. Douglas Kinghorn - Mark Blumenthal. Fourth edition. [London]: Elsevier, 2024, x, 272. ISBN 9780323834346.

Pharmacognosy : fundamentals, applications, and strategies. Edited by Simone Badal McCreath - Yuri N. Clement. Second edition. London: Elsevier, 2024, xxv, 819. ISBN 9780443186578.

From herbs to healing : pharmacognosy - phytochemistry - phytotherapy - biotechnology. Edited by Éva Szöke - Ágnes Kéry - Éva Lemberkovics. Cham: Springer, 2023, xvii, 570. ISBN 9783031173004.

Assessment of medicinal plants for human health : phytochemistry, disease management, and novel applications. Edited by Megh Raj Goyal - Durgesh Nandini Chauhan. Burlington, ON: Apple Academic Press, 2021, xxiii, 261. ISBN 9781771888578.

Principles and practice of botanicals as an integrative therapy. Edited by Anne Hume - Katherine Kelly Orr. Boca Raton: CRC Press, 2019, 1 online. ISBN 9780429546976. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=2117126>

Nagy, M., Mučaji, P., Grančai, D. *Farmakognózia*. 2017. ISBN 9788089631643.

BONE, Kerry a Simon MILLS. *Principles and practice of phytotherapy : modern herbal medicine*. Edited by Michael Dixon - Mark Blumenthal. Second edition. Edinburgh: Churchill Livingstone/Elsevier, 2013, xxiv, 1051. ISBN 9780443069925.

FaF:FDFla_FAF Pharmacology

Předmět není v aktuálních obdobích! 8 kreditů, ukončení zk, garant předmětu doc. PharmDr. Peter Kollár, Ph.D.

Vyučující

doc. PharmDr. Peter Kollár, Ph.D. (přednášející)

Cíle předmětu

The aim of the Pharmacology course is to acquaint students with the issue of drug science, with an emphasis on preclinical testing of existing and new potential drugs, as well as the evaluation of biological effects of active substances at the molecular and whole body level and increase the ability of the student to process the acquired knowledge from the mentioned areas into the research texts.

Výukové metody

Dialogue, work with literature, discussion

Metody hodnocení

oral exam

Primární způsob výuky

kontaktní

Výstupy z učení

The student knows pharmacology to the extent sufficient to work on projects, preparing a dissertation.

Osnova

The content of the subject Pharmacology covers fields of medicine and the therapy of diseases with an emphasis on preclinical testing of existing and new potential drugs, as well as the evaluation of the biological effects of active substances at the molecular and the whole body levels in order to increase the ability of the student to acquire the knowledge from these areas to be processed in the research texts.

Literatura**doporučená literatura**

RITTER, James, R. J. FLOWER, Graeme HENDERSON, Yoon Kong LOKE, David J. MACEWAN, Emma S. J. ROBINSON a James FULLERTON. *Rang & Dale's pharmacology / James M. Ritter, Rod Flower, Graeme Henderson, Yoon Kong Loke, David MacEvan, Emma Robinson, James Fullerton*. Tenth edition. London: Elsevier, 2024, xvii, 850. ISBN 9780323873963.

WALLER, Derek, Anthony P. SAMPSON a Andrew W. HITCHINGS. *Medical pharmacology & therapeutics*. Sixth edition. London: Elsevier, 2022, 1 online. ISBN 9780702081606. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=3072789>

KATZUNG, Bertram G. a Todd W. VANDERAH. *Basic and clinical pharmacology*. Fifteenth edition. New York: McGraw-Hill Education, 2021, xi, 1311. ISBN 9781260470109.

Farmakologie. Edited by Jan Švihovec - Jan Bultas - Pavel Anzenbacher - Jaroslav Chládek - J. 1. vydání. Praha: Grada Publishing, 2018, xix, 962. ISBN 9788024755588.

KENAKIN, Terrence P. *Pharmacology in drug discovery and development : understanding drug response*. Second edition. Amsterdam: Elsevier, 2017, 1 online. ISBN 9780128037539. <https://ezproxy.muni.cz/login?url=>

<https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=1204272>

FaF:FDFTa_FAF **Pharmaceutical Technology**

Předmět není v aktuálních obdobích! 8 kreditů, ukončení zk, garant předmětu prof. PharmDr. Mgr. David Vetchý, Ph.D.

Vyučující

prof. PharmDr. Mgr. David Vetchý, Ph.D. (přednášející)

Cíle předmětu

The content of the subject is the issue of technological procedures leading to the design of a stable pharmaceutical form, which has the desired release of the drug and it is possible to manufacture it industrially, methods of their evaluation by the methods described in scientific and professional publications with emphasis on the knowledge of science and research contained in world databases and increasing the student's ability to process the knowledge gained from the field of pharmaceutical technology principles into research texts.

Výukové metody

Self-study, consultations

Metody hodnocení

Oral examination

Primární způsob výuky

kontaktní

Výstupy z učení

Comprehensive knowledge in the field of pharmaceutical technology, above-standard knowledge in issues related to the field of student research.

Osnova

1. Parenteral dosage forms
2. Mucoadhesion and its application in drug technology, mucoadhesive agents.
3. Interactive powder mixtures (preparation methods, physico-chemical characteristics affecting the properties of the interactive powder mixture)
4. Pellets (physical-chemical properties, preparation, evaluation)
5. Plant extracts (physical-chemical properties, preparation, evaluation)
6. Controlled release and its characteristics (pulse, delayed, prolonged)
7. Good Manufacturing Practice (Basic Principles and Legislation)
8. Validation of the production of medicinal products (critical steps, statistical methods, basic documents)
9. Controlled release drug matrix tablets
10. Lipophilic auxiliaries and their use in matrix systems technology
11. Evaluation of solid dosage forms
12. Powders as a pharmaceutical form and intermediate for preparation of granules, tablets and capsules preparation and evaluation
13. Solid state drug, polymorphs, amorphous phases, salts and co-crystals
14. Assessment of the release of the drug from the pharmaceutical form of the pharmacopoeial and non-pharmacopoeial methods
15. Drug microforms, technology for their preparation and use in pharmacotherapy.
16. Microparticles. Possibilities to influence the quality parameters of microparticles prepared by external ion gelation.
17. The use of lactic acid and glycolic acid copolymer in pharmaceutical technology (its properties, PLGA micro-particles, PLGA implants)
18. Transdermal dosage forms and their evaluation.
19. Use of swelling cellulose derivatives in drug mold technology
20. Texture analysis in the evaluation of solid dosage forms
21. Granulates and granulation technologies
22. Orodispersible dosage forms
23. Stability testing of the medical forms
24. Capsules method of preparation, manufacture, types and uses
25. Pharmacopoeial evaluation of flow properties
26. Pharmacopoeial evaluation of the tablets
27. Distribution of essential excipients for tablet production
28. Matrix controlled release systems
29. Tablets (preparation, evaluation)
30. Biorelevant dissolution method (media, pH, sampling times, dissolution devices)
31. Statistical methods used to assess the content uniformity of dosage forms
32. Delayed and pulsed-release dosage forms (preparation, evaluation)
33. Coated preparations (coating materials and methods of coating of oral medicinal products)
34. Sterile medicinal products (preparation, evaluation, use)
35. Analytical evaluation of polymer materials (overview of methods and their utilization, gel chromatography)
36. Oral dosage forms (distribution according to pharmacopoeia, preparation, excipients ...)
37. IN VITRO IN VIVO correlation in drug development.
38. Kinetic models for releasing drug substance from a pharmaceutical form
39. Possibilities of preparation of a specific solid phase to influence the rate of dissolution and bioavailability
40. Rheological measurements in the evaluation of drug forms
41. Cellulose and its derivatives in the technology of pharmaceutical forms and medical devices.
42. Natural polymers in the technology of pharmaceutical forms and medical devices.

43. Hydrophilic gels - technology of preparation and production, auxiliaries.
44. Topical semi-solid preparations - distribution, technological aspects, auxiliaries.
45. Modern medical devices (wound healing) in wound therapy - characteristics, requirements, overview.
46. Methods of preparation / production of polymer films.
47. Excipients for the preparation / production of polymer films.
48. Application of polymer films in pharmacy (pharmaceutical forms), health care and other fields.
49. Methods of evaluation of wound dressing quality.
50. Prolonged-release vaginal drugs (vaginal rings, vaginal inserts, mucoadhesive dosage forms)

Literatura

doporučená literatura

Advanced and modern approaches for drug delivery. Edited by Amit Kumar Nayak - Md Saquib Hasnain - Bibek Laha - Sabayasachi Maiti. London: Academic Press, an imprint of Elsevier, 2023, 1 online. ISBN 9780323972192. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=3405454>

Fundamentals of drug delivery. Edited by Heather A. E. Benson - Michael S. Roberts - Adrian C. Williams - Xiaow. First published. Hoboken, NJ: John Wiley & Sons, 2022, xxii, 554. ISBN 9781119769606.

Advances and challenges in pharmaceutical technology : materials, process development and drug delivery strategies. Edited by Amit Kumar Nayak - Kunal Pal - Indranil Banerjee - Samarendra Maji - U. London: Academic Press, 2021, 1 online. ISBN 9780128203002. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=2372034>

Drug delivery : principles and applications. Edited by Binghe Wang - Longqin Hu - Teruna Siahaan. Second edition. Hoboken, New Jersey: Wiley, 2016, 1 online. ISBN 9781118833230. http://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,cookie,uid&db=nlebk&AN=1202091&lang=cs&site=eds-live&scope=site&ebv=EB&ppid=pp_C1

Komárek, P., Rabišková, M. *Technologie léků*. Galén, Praha, 2006. ISBN 80-7262-423-7.

FaF:FDSFa_FAF Social and Clinical Pharmacy

Předmět není v aktuálních obdobích! 8 kreditů, ukončení zk, garant předmětu doc. RNDr. Jozef Kolář, CSc.

Vyučující

doc. RNDr. Jozef Kolář, CSc. (přednášející)

Cíle předmětu

The course aims to provide students with a relevant theoretical basis, enabling a detailed study of the aspects of pharmacy and pharmaceuticals that describe their social relationships and the patients as healthcare recipients. Emphasis is placed on the issue of the position of medicines as specific tools of healthcare providing, taking into account the fact that health and healthcare are not only an important individual interest and need but also an important public priority, public good, and general human value.

Výukové metody

individual consultations, discussions, individual work, and study of literature

Metody hodnocení

oral exam

Primární způsob výuky

kontaktní

Výstupy z učení

After completing the course, the student will be able to:

- characterize the basic relationships between society, the healthcare system, pharmacists and other healthcare professionals, medicine and the patient;
- understand the interdisciplinary connections of healthcare at the interface of interest of experimental, clinical, social sciences, and humanities;
- orient themselves in the basic principles of regulatory pharmacy, health and medicines policy, and evaluate their impact on the healthcare system and the provision of healthcare;
- apply acquired knowledge in the planning and implementing qualitative and quantitative research focusing on social and clinical aspects of health care provision.

Osnova

- Health and its protection, health promotion, pharmaceutical aspects of health protection and disease prevention
- Evaluation of the health status of the population
- Basics of epidemiology and health statistics in pharmaceutical research
- Organization and financing of the healthcare system
- Pharmacy and its practical branches in the context of the healthcare system
- Life cycle of the medicinal product
- General principles of medicines regulatory
- International harmonization of requirements on medicinal products

- Medicines policy in the context of the EU and the Czech Republic, concepts, tools, and examples of their application
- Social aspects of medicine use
- Methods of studying the utilization and consumption of medicines in the population
- Patient safety culture and tools to ensure it
- The pharmacist's role in ensuring rational and safe pharmacotherapy
- Factors influencing the use of medicines and the success of pharmacotherapy
- Problems and risks associated with the use of medicines, medication errors
- Patients' attitudes toward pharmacotherapy; medicines and health literacy

Literatura

Žádné informace.

FaF:FDZEa_FAF **Basics of Scientific Work and Research Ethics**

Předmět není v aktuálních obdobích! 10 kreditů, ukončení zk, garant předmětu prof. PharmDr. Karel Šmejkal, Ph.D.

Vyučující

prof. PharmDr. Karel Šmejkal, Ph.D. (přednášející)

Cíle předmětu

The graduates will acquaint themselves with the propedeutics of research activities. After graduation, students will be able to engage in research projects as both proponents and investigators. They will acquire the creative approach to solving problems in the field of pharmacology and biomedicine. Under the Faculty conditions, Doctoral students will demonstrate compliance with the criteria of the subject by submitting a literary research on a topic related to the assignment of their dissertation. Credits for completing this subject are recorded by the supervisor, who also assesses the fulfillment of the task and the form of processing. The research can be in written or electronic form and can be considered as a rigorous work. The Faculty offers its Doctoral students participation in seminars and trainings concerning the methodology of scientific research, publication of their results and work with information sources. Credits can be obtained after completing the Course of the basis of scientific work at the Czech Academy of Sciences upon submission of the Certificate of completion.

Výukové metody

Dialogue, consultations, participation in seminars

Metody hodnocení

Project, oral presentation

Primární způsob výuky

kontaktní

Výstupy z učení

Ability to analyze a scientific problem, create a solution, be able to describe the solution in a form suitable for presentation.

Osnova

The content of the subject is the student's education in the field of acquiring scientific and research knowledge from literary sources, formulating the aim of the research activity, elaborating the methodology of the research work. Furthermore, the student is educated on how to create data structures or information verifying hypotheses to obtain scientific data processing, statistical evaluation and interpretation, discussion assessment of the results and a comparison with the results of other scientific papers, how to draw conclusions, create a list of literary sources and further formalities of the scientific papers, tables, charts, photographic documentation, diagrams, and also the doctoral thesis, as well as the ethical issues of scientific work and publishing. The subject is completed by a credit.

Literatura

Žádné informace.

2.2 Předměty profilujícího základu (P)

Jedná se o povinný nebo povinně volitelný předmět, jehož absolvováním student získává znalosti nebo dovednosti podstatné pro dosažení výstupů z učení studijního programu — obsah těchto předmětů je zahrnut ve státní závěrečné zkoušce.

FaF:FDACa_FAF **Analytical Chemistry**

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu doc. RNDr. Bc. Jiří Pazourek, Ph.D.

Vyučující

doc. RNDr. Bc. Jiří Pazourek, Ph.D. (přednášející)

Cíle předmětu

Analytical Chemistry with a special focus on the methods of separation of natural substances, their detection and identification. In the frame of the currently used methods, it concentrates on HPLC and CE techniques, spectrophotometry at different wavelengths, and other detection and identification methods. Objective of the course in terms of learning outcomes and competences are to acquaint students with selected analytical techniques, to bring students closer to the possibilities of analytical chemistry and to enable control of techniques useful for further study and analytical work within the DSP.

Výukové metody

Dialogic (discussion, interview, brainstorming)

Metody hodnocení

oral examination

Primární způsob výuky

kontaktní

Výstupy z učení

Specialized analytical chemistry

Osnova

Analytical chemistry for graduate students is focused on analytical methods useful in the separation of chemical compounds and mixtures, is focused on both the separation and detection of different compounds from various matrices. Regarding the current state of knowledge, it is focused on HPLC and CE, spectrophotometry, and other separation and identification methods. The course is performed through self-studies, personal communications, and consultations with the lecturer, according to the specific demands of a student

Literatura**doporučená literatura**

SKOOG, Douglas A., Donald M. WEST, F. James HOLLER a Stanley R. CROUCH. *Fundamentals of analytical chemistry*. Tenth edition. Boston, MA: Cengage, 2022, xvi, 933. ISBN 9780357450413.

ČULEN, Martin, Jiří DOHNAL a JAMPÍLEK. *Selected Analytical Techniques of Solid State, Structure Identification, and Dissolution Testing in Drug Life Cycle. Analytical Techniques in Drug Life Cycle*. Online. 1., elektronické vyd. Brno: Masarykova univerzita, 2022. ISBN 978-80-280-0193-3. Dostupné z: <https://dx.doi.org/10.5817/CZ.MUNI.O280193-2022>. Čítárna Munispace <https://munispace.muni.cz/library/catalog/book/2192>

MUSELÍK, Jan, Jakub VYSLOUŽIL a Kateřina KUBOVÁ. *Modern Instrumental Methods in Solid Dosage Form Analysis*. 1. vyd. Brno: Masarykova univerzita, 2021, 231 s. ISBN 978-80-210-9723-0.

WATSON, David G. a Bhavik A. PATEL. *Pharmaceutical analysis : a textbook for pharmacy students and pharmaceutical chemists*. Fifth edition. Edinburgh: Elsevier, 2021, vi, 462. ISBN 978070208088.

SKOOG, Douglas A., Donald M. WEST, F. James HOLLER a Stanley R. CROUCH. *Analytická chemie*. Translated by Karel Nesměrák - Václav Červený - Tomáš Křížek - Eliška. Vydání první. Praha: Vysoká škola chemicko-technologická v Praze, 2019, xxx, 950. ISBN 9788075920430.

ANDRADE GARDA, José Manuel, A. CARLOSENA ZUBIETA, María Paz GÓMEZ-CARRACEDO, Miguel Ángel MAESTRO SAAVEDRA, M. C. PRIETO-BLANCO a R. M. SOTO-FERREIRO. *Problems of instrumental analytical chemistry : a hands-on guide*. New Jersey: World Scientific, 2017, xviii, 459. ISBN 9781786341792.

FaF:FDaINT_FAF Study Stay Abroad

Předmět není v aktuálních obdobích! 50 kreditů, ukončení z, garant předmětu doc. Ing. Pavel Bobál, CSc.

Vyučující*Žádné informace.***Cíle předmětu**

Development of specialized knowledge and skills at a foreign workplace focused on a dissertation project, participation in an international research project.

Výukové metody

According to the possibilities of the visited foreign workplace.

Metody hodnocení

Credit according to the point value:

5 credits for the 1st week + 2 credits for each additional week, maximum 50 credits for study.

For a foreign internship to be recognized, it must be registered in the IS. The student must also provide a written confirmation of completion of the internship from a foreign institution.

Primární způsob výuky*Žádné informace.***Výstupy z učení**

Research cooperation, the possibility of methodological comparison, the ability to present in an international forum, gaining contacts, and communication in a foreign language.

Osnova

Students of doctoral study programs are required by Government Decree No. 274/2016 Coll. on standards for accreditation in higher education to complete an internship abroad for at least one month during their studies. An alternative is participation in an international project with results published or presented abroad or another form of direct participation in international cooperation.

Literatura*Žádné informace.***FaF:FDALa_FAF Analysis of Pharmaceuticals**

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu doc. PharmDr. Ing. Radka Opatřilová, Ph.D., MBA

Vyučující

doc. PharmDr. Ing. Radka Opatřilová, Ph.D., MBA (přednášející)

Cíle předmětu

The aim of the course is to deepen students' knowledge of methods of work and possibilities of application of methods of analytical chemistry for the field of drug analysis. The main emphasis is placed on the analysis of drugs, which is directly related to the thematic focus of the student's dissertation. The student is guided to master the entire analytical system from sampling to analytical interpretation of results, including the use of relevant statistical methods.

Výukové metody

theoretical training, individual consultations, discussion

Metody hodnocení

oral exam

Primární způsob výuky

kontaktní

Výstupy z učení

Learning outcomes of the course are theoretical knowledge and practical experience of students of methods used for comprehensive evaluation of drugs and medicinal products in accordance with applicable regulations in the Czech Republic and the EU. The content of the course is based on the requirements of the European Pharmacopoeia as a supranational legal norm. The graduate of the course Drug Analysis is to master the basic procedures and methods of pharmacopoeial evaluation of drugs. Evidence of drugs based on physical constants, using instrumental-analytical methods and chemical reactions. To control group and selective reactions of structural types of drugs within pharmacotherapeutic groups. He has mastered the technique of limit tests for the purity of drugs, volumetric and gravimetric determination of drugs and pharmaceutical excipients. He should be able to perform analytical evaluation of drugs and medicinal products using chromatographic, spectral and electroanalytical methods. He should be able to perform experimental studies of medicinal products, evaluation of relevant physical and chemical parameters, including detection and quantification of degradation products, according to the given procedure.

Osnova

Drug Identification and Drug Assay:- detection and quantification of drugs on the basis of physical constants (melting point, distillation range, density, refractive index, optical rotation),
- detection and quantification of drugs using of physicochemical methods (spectral, separational, electrochemical methods),
Purity and stability of drugs

Literatura**doporučená literatura**

European Pharmacopoeia. <https://pheur.edqm.eu/home>

Český lékopis 2023. Praha: Grada, 2023.

Modern aspects of pharmaceutical quality assurance : developing & proposing application models, SOPs, practical audit systems for pharma industry. Edited by Minal Ghante - Manohar Potdar - Vidhya Bhusari. Singapore: Springer, 2024, 1 online. ISBN 9789819992713. <https://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&AN=3850018>

ČULEN, Martin, Jiří DOHNAL a JAMPÍLEK. *Selected Analytical Techniques of Solid State, Structure Identification, and Dissolution Testing in Drug Life Cycle. Analytical Techniques in Drug Life Cycle.* Online. 1., elektronické vyd. Brno: Masarykova univerzita, 2022. ISBN 978-80-280-0193-3. Dostupné z: <https://dx.doi.org/10.5817/CZ.MUNI.O280193-2022>. Čítárna Munispace <https://munispace.muni.cz/library/catalog/book/2192>

WATSON, David G. a Bhavik A. PATEL. *Pharmaceutical analysis : a textbook for pharmacy students and pharmaceutical chemists.* Fifth edition. Edinburgh: Elsevier, 2021, vi, 462. ISBN 978070208088.

ASHUTOSH KAR. *Pharmaceutical Drug Analysis.* New Age International (P) Ltd., Publishers, 2005. ISBN 9788122427189.

FaF:FDAMa_FAF **Special Analytical Methods in Pharmaceuticals Manufacture and Quality Control**

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu doc. Mgr. Jan Muselík, Ph.D.

Vyučující

doc. Mgr. Jan Muselík, Ph.D. (přednášející)

Cíle předmětu

Expanding the knowledge of the student focusing on modern methods used in pharmaceutical development as well as quality control, obtained mainly from world databases containing knowledge from scientific publications especially of foreign research experts and institutions and increasing the ability of the student to process this knowledge into research texts focusing on the content of the study program.

Výukové metody

consultation

Metody hodnocení

oral exam

Primární způsob výuky

kontaktní

Výstupy z učení

After completing the course, the student will be able to: - summarize the main methods used in the analysis of solid dosage forms; - understand the theoretical basis of these methods; - describe the main applications of these methods in pharmaceutical research and industry.

Osnova

1 Middle and near infrared spectroscopy, principles, instrumentation, measurement techniques. 2 Applications of infrared spectroscopy, evaluation of spectra. 3 Dissolution test, methods of determination of active compound content (UV/VIS spectrophotometry). 4 Methods of determination of active compound content (HPLC). 5 Light microscopy. 6 Scanning, transmission and environmental electron microscopy. 7 Scanning probe microscopy. 8 Methods of particle size determination (light microscopy, sedimentation analysis, sieve analysis, Coulter counter). 9 Methods of particle size determination - laser diffraction. 10 X-ray analysis, instrumentation and applications in pharmaceutical technology. 11 Methods of thermal analysis (differential thermal analysis - DTA, thermogravimetry - TGA). 12 Methods of thermal analysis (differential scanning calorimetry - DSC).

Literatura**doporučená literatura**

ČULEN, Martin, Jiří DOHNAL a JAMPÍLEK. *Selected Analytical Techniques of Solid State, Structure Identification, and Dissolution Testing in Drug Life Cycle. Analytical Techniques in Drug Life Cycle*. Online. 1., elektronické vyd. Brno: Masarykova univerzita, 2022. ISBN 978-80-280-0193-3. Dostupné z: <https://dx.doi.org/10.5817/CZ.MUNI.O280193-2022>. Čítárna Munispace <https://munispace.muni.cz/library/catalog/book/2192>

MUSELÍK, Jan, Jakub VYSLOUŽIL a Kateřina KUBOVÁ. *Modern Instrumental Methods in Solid Dosage Form Analysis*. 1. vyd. Brno: Masarykova univerzita, 2021, 231 s. ISBN 978-80-210-9723-0.

WATSON, David G. a Bhavik A. PATEL. *Pharmaceutical analysis : a textbook for pharmacy students and pharmaceutical chemists*. Fifth edition. Edinburgh: Elsevier, 2021, vi, 462. ISBN 978070208088.

FaF:FDaPED_FAF Teaching Activities

Předmět není v aktuálních obdobích! 40 kreditů, ukončení z, garant předmětu doc. Ing. Pavel Bobál, CSc.

Vyučující*Žádné informace.***Cíle předmětu**

Gaining pedagogical and academic experience important for improving the interpretation of professional knowledge.

Výukové metody

Active pedagogical activity supervised by another experienced academic worker

Metody hodnocení

Credit according to the point value:

1 credit for 3 teaching hours, max. 120 hours / 40 credits for studies, supervisor/consultant of the diploma thesis (after successful defense) - 10 credits.

To obtain the credit, it is necessary to send to phd@pharm.muni.cz the Confirmation of teaching, in which the guarantor of the subject confirms the scope of teaching performed by the student in the given period. Confirmation of successful defense of graduates outside MU must be sent to phd@pharm.muni.cz.

Primární způsob výuky*Žádné informace.***Výstupy z učení**

Ability to prepare and implement teaching in pregradual degree programs.

Osnova

Preparation of study and teaching materials, presentations and teaching in subjects corresponding to the professional orientation of the student.

Literatura*Žádné informace.***FaF:FDaPUB_FAF Publications**

Předmět není v aktuálních obdobích! 60 kreditů, ukončení z, garant předmětu doc. Ing. Pavel Bobál, CSc.

Vyučující*Žádné informace.***Cíle předmětu**

Systematic publishing activity as an integral part of research activities and a basic prerequisite for obtaining the degree of Ph.D. For the study, authorship is obligatory as the first or corresponding, at least one impacted publication, which thematically corresponds to the dissertation project.

Výukové metody

Consultation in the preparation of the publication with the supervisor.

Metody hodnocení

Credit according to point value:

article with IF - 60 credits,

article in foreign language without IF - 30 credits,

article in Czech/Slovak without IF - 20 credits,

scientific conference (poster, lecture) - 10 credits.

To be awarded the credits, it is necessary to send the entire publication to the address phd@pharm.muni.cz.

In case of acceptance of the publication, it is necessary to provide confirmation of receipt of the publication. In

the case of a scientific conference, it is necessary to provide the first page of the abstract of the book and the abstract or other proof of active participation to the address phd@pharm.muni.cz.

Primární způsob výuky

kontaktní

Výstupy z učení

Publication or accepted publication.

Active participation in a scientific conference.

Osnova

Preparation of a publication output.

Literatura

Žádné informace.

FaF:FDaRES_FAF Research Activities

Předmět není v aktuálních obdobích! 50 kreditů, ukončení z, garant předmětu doc. Ing. Pavel Bobál, CSc.

Vyučující

Žádné informace.

Cíle předmětu

Evaluation of student's research activities.

Výukové metody

Consultation of research activities with the supervisor.

Metody hodnocení

Credit according to point value:

patent (author, co-author) - 30 credits,

successfully defended grant - researcher - 15 credits,

successfully defended grant - co-researcher - 5 credits.

To obtain the credit, it is necessary to send a document confirming a patent or a successfully defended grant to phd@pharm.muni.cz.

Primární způsob výuky

kontaktní

Výstupy z učení

Successfully defended research project.

Obtained patent/utility model.

Osnova

Preparation of the applied result; preparation of a grant proposal and its final defense.

Literatura

Žádné informace.

FaF:FDBAa_FAF Biopharmaceutical Aspects of Pharmaceuticals Evaluation

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu prof. PharmDr. Mgr. David Vetchý, Ph.D.

Vyučující

prof. PharmDr. Mgr. David Vetchý, Ph.D. (přednášející)

Cíle předmětu

Expanding the knowledge of the student focusing on the biopharmaceutical aspects of the evaluation of chemical and biological pharmaceuticals, obtained mainly from world databases containing knowledge from scientific publications especially of foreign research experts and institutions and increasing the ability of the student to process this knowledge into research texts focusing on the content of the study program.

Výukové metody

consultation with the teacher

Metody hodnocení

Oral examination

Primární způsob výuky

kontaktní

Výstupy z učení

- Identify the original and generic drug and summarize the important stages of their development - Define generic substitution and describe the degree of similarity of generic medicinal products based on bioequivalence studies - Explain the effects of generic substitution - Define original biological drug and biosimilars - Explain the development and production of biological medicines - Describe the principle and effects of interchangeability of biological drugs - Describe the differences in production and evaluation between a chemical and a biological product

Osnova

1. Original and generic drug - Development, Production and Evaluation
2. Generic substitution - definition, bio-equivalence study, degree of similarity of generic products and impact on generic substitution.
3. Original Biological Medicine and Biosimilar - Development, Production and Evaluation
4. Interchangeability of biological products - view of FDA and EMA, extrapolation of indications, divergence of preparations, proof of consistency of the manufacturing process, processes of change in the production process, immunogenicity
5. Differences in production and evaluation between chemical and biological products

Literatura**doporučená literatura**

Advanced and modern approaches for drug delivery. Edited by Amit Kumar Nayak - Md Saquib Hasnain - Bibek Laha - Sabayasachi Maiti. London: Academic Press, an imprint of Elsevier, 2023, 1 online. ISBN 9780323972192. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=3405454>

HILL, Ray G. a Duncan B. RICHARDS. *Drug discovery and development : technology in transition*. 3rd edition. [Edinburgh?]: Elsevier, 2022, ix, 373. ISBN 9780702078040.

BLASS, Benjamin E. *Basic principles of drug discovery and development*. Second edition. London: Academic Press, 2021, xvii, 718. ISBN 9780128172148.

Basic pharmacokinetics and pharmacodynamics : an integrated textbook and computer simulations. Edited by Sara Rosenbaum. Second edition. New Jersey: Wiley, 2017, 1 online. ISBN 9781119143185. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=1427450>

KENAKIN, Terrence P. *Pharmacology in drug discovery and development : understanding drug response*. Second edition. Amsterdam: Elsevier, 2017, 1 online. ISBN 9780128037539. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=1204272>

Martin's physical pharmacy and pharmaceutical sciences : physical chemical and biopharmaceutical principles in the pharmaceutical sciences. Edited by Patrick J. Sinko - Yashveer Singh. Sixth edition. Philadelphia: Wolters Kluwer, 2011, viii, 659. ISBN 9781609134020.

FaF:FDBCa_FAF Biochemistry

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu Mgr. Marie Brázdová, Ph.D.

Vyučující

Mgr. Marie Brázdová, Ph.D. (přednášející)

Cíle předmětu

Biochemistry is aimed at deepening the knowledge of biochemistry obtained in the undergraduate study. It focuses on detailed information on selected chemical processes in living organisms relevant to the study of DSP. Special emphasis is placed on modern information and links between biochemistry and molecular biology.

Výukové metody

Teaching takes the form of personal consultations and other educational activities, that are recommended by the guarantor of the course.

Metody hodnocení

Ústní zkouška.

Primární způsob výuky

kontaktní

Výstupy z učení

Deepening basic knowledge of biochemistry forming the basis for related subjects. After completing the course, the student will be able to: - use the information obtained to understand the molecular basis of the effect of many drugs
Advanced biochemical methods
Knowledge of metabolic processes
Cellular signalling pathways

Osnova

- 1) Biochemistry: Biochemistry of deepening basic knowledge 1.1) Scope of biochemistry: central principles, cellular and chemical foundations (functional groups, reactions), physical foundations
- 1.2) Living cells (structure of eukaryotic cell)
- 1.3) Water: the medium of life (interactions, pH, pKa, buffers, blood, liver and urine buffering systems, osmosis, dialysis)

- 1.4) Energy (free energy, ATP)
- 2) Structure and function of proteins
 - 2.1) Amino acids (structure, pKa, pl, properties, covalent modifications)
 - 2.2) Peptides (peptide bond, disulfide bridge, glutathione, insulin, antibiotics, neurotransmitters)
 - 2.3) Protein structure (secondary, tertiary, conformation, structure and function)
 - 2.4) Structure and function of hemoglobin and myoglobin
- 3) Enzymes
 - 3.1) Properties of Enzymes (cofactors, coenzymes, vitamins)
 - 3.2) Classification of Enzymes (examples of each class)
 - 3.3) Catalysis (enzyme reaction, active site, specificity) and Enzyme regulation
 - 3.4) Kinetics of enzyme reactions
- 4) Membrane transport
 - 4.1) Biomembranes - composition and function
 - 4.2) Membrane transports
- 5) Carbohydrates and metabolism of carbohydrate
 - 5.1) Monosaccharides, Disaccharides, Oligosaccharides
 - 5.2) Polysaccharides (structure and function)
 - 5.3) Metabolism, homeostasis, catabolism, anabolism, nutrient pool, energy metabolism
 - 5.4) Glycolysis and Glyconeogenesis
 - 5.5) Glycogen metabolism
- 6) Metabolism of Proteins and Amino Acid Nitrogen
 - 6.1) Overview of metabolism of proteins,
 - 6.2) Elimination of alfa-amino nitrogen
 - 6.3) Detoxification of Ammonia
 - 6.4) Catabolism of Amino Acids (Ala, Arg, Ser, Gly, Thr, Asp, Glu, His, Phe, Tyr, Cys)
- 7) Aerobic metabolism
 - 6.1) Tricarboxy Acid Cycle (Citric Acid Cycle (overview, fuels, mitochondrion, enzymes and coenzymes, 8 steps of CC, regulation of pyruvate dehydrogenase, control of CC, biosynthesis aspects of CC)
 - 6.2) Respiratory chain (redox potential, sequence of electron carriers)
 - 6.3) Oxidative phosphorylation (enzymes, prosthetic groups, localization in mitochondria, mechanism ATP synthesis)
 - 6.4) Oxidative stress (reactive oxygen species, their formation, antioxidant enzymes systems, antioxidant molecules)
- 7) Lipids
 - 7.1) Lipids classes (definition, biological) and metabolism
 - 7.2) Synthesis and degradation of Fatty acids
 - 7.3) Lipid synthesis. Peroxidation and Eicosanoids.
 - 7.4) Biotransformation
- 8) Nucleic acids and their metabolism
 - 8.1) Structure of components, role of nucleotides, biosynthesis (replication, transcription and proteosynthesis)
 - 8.2) Nucleic acids metabolism (biosynthesis and degradation of purine and pyrimidine nucleotides)
- 9) Integration of metabolism and cell signaling

Literatura

povinná literatura

KENNELLY, Peter J., Kathleen M. BOTHAM, Owen P. MCGUINNESS, Victor W. RODWELL a P. Anthony WEIL. *Harper's illustrated biochemistry*. Thirty-second edition. New York: McGraw-Hill, 2023, x, 802. ISBN 9781260469943.

MURRAY, Robert K., David A. BENDER, Kathleen M. BOTHAM, Peter J. KENNELLY, Victor W. RODWELL a P. Anthony WEIL. *Harperova ilustrovaná biochemie*. Translated by Bohuslav Matouš. Páté české vydání, prv. Praha: Galén, 2012, xii, 730. ISBN 9788072629077.

doporučená literatura

MURPHY, Michael J., Rajeev SRIVASTAVA a Kevin DEANS. *Clinical biochemistry : an illustrated colour text*. Seventh edition. [Philadelphia]: Elsevier, 2024, ix, 185. ISBN 9780323880572.

Medical biochemistry. Edited by John W. Baynes - Marek H. Dominiczak. Sixth edition. [Amsterdam]: Elsevier, 2022, xxiv, 720. ISBN 9780323834506.

COLE, Laurence A. a Peter R. KRAMER. *Human physiology, biochemistry and basic medicine*. Amsterdam: Elsevier, 2016, 1 online. ISBN 9780128037171. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=1080307>

Robert K. Murray, Daryl K. Granner, Peter A. Mayes, Victor W. Ro. *Harperova biochemie*. ČR, 2002. ISBN 80-7319-013-3.

FaF:FDBFa_FAF **Biological Medicinal Products**

Předmět není v aktuálních obdobích! 5 kreditů, ukončen zk, garant předmětu doc. PharmDr. Oldřich Farsa, Ph.D.

Vyučující

doc. PharmDr. Oldřich Farsa, Ph.D. (přednášející)

Cíle předmětu

Biologic therapeutics increase very rapidly in number in recent decades. Their growth has mainly accelerated since approvals of biosimilars by the European Medicines Agency (EMA) had started. Not only notoriously known therapeutic monoclonal antibodies are in spotlight but also haematopoietic stimulators, protein and peptide hormones, cytokines and therapeutic enzymes and also polymeric molecules of other than peptide character such as antisense oligonucleotides and olig- or polysaccharides must be taken into account. Vaccines also cannot be passed over although their look is today completely different from initial dead or attenuated pathogens. The goal of the advanced course intended for Ph.D. students is not only to present pharmacotherapeutic aspects of these medicines but also to acquaint students with their structure aspects on various levels including semi-synthetic modifications and also with methods of their analysis and quality assessment.

Výukové metody

Methods of work with a text (a textbook, a book, a journal article via internet)

Metody hodnocení

oral exam

Primární způsob výuky

kontaktní

Výstupy z učení

A DSP student, which will pass the subject, will have relatively detailed knowledge about structures, analytics, mechanisms of action, and pharmacology of those structure groups of biopharmaceuticals, which will be preliminarily agreed among the student, his tutor, and examiner.

Osnova

Biologic therapeutics and classical medicines, definitions and terminology. History, up-to-date state, classification of biologic therapeutics, fundamentals of nomenclature, main features of individual groups. Originator products and biosimilars.

Modified receptor molecules as medicines.

Imunology preparatios. Classic and modern vaccines.

Therapeutic peptides and proteins (except enzymes, antibodies and haematopoietic factors).

Haematopoietic growth factors.

Antisense oligonucleotides.

Poly- and oligosaccharides as medicines.

Therapeutic enzymes.

Research and development of biologic therapeutics.

Analysis and quality control of biologic therapeutics.

Literatura**doporučená literatura**

TESAŘ, Vladimír. *Biologická a cílená léčba*. První vydání. Praha: Mladá fronta, 2018, 359 stran. ISBN 9788020449603.

Immune aspects of biopharmaceuticals and nanomedicines. Edited by Raj Bawa - János Szebeni - Thomas J. Webster - Gerald F. Audette. Singapore: Pan Stanford Publishing, 2018, xlv, 994. ISBN 9789814774529.

TESAŘ, Vladimír. *Biosimilars*. První vydání. Praha: Mladá fronta, 2017, 150 stran. ISBN 9788020446428.

Biosimilars of monoclonal antibodies : a practical guide to manufacturing, preclinical, and clinical development. Edited by Cheng Liu - John Morrow. Hoboken, New Jersey: Wiley, 2017, 1 online. ISBN 9781118940631. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=1441011>

BENEŠOVÁ, Eva, Martin FUSEK a Pavla HUBÁLKOVÁ. *Bioléčiva*. 2., přepracované a doplně. Praha: Vysoká škola chemicko-technologická v Praze, 2016, 190 stran. ISBN 9788070809556.

Vaccines. Edited by Stanley A. Plotkin - Walter A. Orenstein - Paul A. Offit. Sixth edition. [Spojené státy americké]: Elsevier Saunders, 2013, 1 online. ISBN 9781455737987. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=518087>

FUSEK, Martin. *Biologická léčiva : teoretické základy a klinická praxe*. 1. vyd. Praha: Grada, 2012, 219 s. ISBN 9788070808108.

FaF:FDBOa_FAF Bioorganic Chemistry

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu doc. PharmDr. Oldřich Farsa, Ph.D.

Vyučující

doc. PharmDr. Oldřich Farsa, Ph.D. (přednášející)

Cíle předmětu

Bioorganic chemistry is chemistry of organic biologically active compounds. It is besides medicines which are in detail studied by medicinal chemistry concerned with pesticides used in agriculture (herbicides, fungicides, insecticides, molluscocides, rodenticides...), food additives in which a biologic activity can be specified, chemical combat substances and toxic compounds of all the kind. The discipline studies both qualitative (SAR) a quantitative (QSAR) relationships between structure and activity or toxicity of these compounds. It also deals with

their syntheses and metabolism as well as computer modelling of interactions of these molecules with target structures such as enzymes, receptors or nucleic acids.

Výukové metody

Methods of work with a text (a textbook, a book, journal articles via internet)

Metody hodnocení

Ústní zkouška

Primární způsob výuky

kontaktní

Výstupy z učení

A DSP student will acquire an advanced knowledge in the field of biologically active compounds, which cannot be considered to be medicines, mainly pesticides, chemical assault substances, industrial poisons and food additives in the range, agreed preliminarily among a student, his/her tutor and an examiner.

Osnova

Topics: 1. Compounds interacting with the vegetative nervous system. Indirect cholinergics - choline esterases inhibitors: insecticides, warfare agents. Choline esterases reactivators. Specific GABA-receptors' subtypes ligands: insecticides.

2. Anticoagulants. Rodenticides.

3. Herbicides. Photosynthesis inhibitors and compounds acting by other mechanisms.

4. Antimicrobial and antifungal preservatives of foods, drug forms, cosmetics, wood and agricultural fungicides.

5. Antioxidants for food, pharmaceutical, cosmetic and industrial usage.

6. Repellents.

Literatura**doporučená literatura**

DRABINA, Pavel. *Bioorganická chemie*. Vydání první. Pardubice: Univerzita Pardubice, 2020, 241 stran. ISBN 9788075603166.

Lushchak V.I., Matviishyn T.M. et al. *Pesticide toxicity: a mechanistic approach*. Germany, 2018. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6295629/>

Tarazona J.V., Court-Marques D. et al. *Glyphosate toxicity and carcinogenicity: a review of the scientific basis of the European Union assessment and its differences with IARC*. Germany, 2017.

Abou-Donia M.B., Siracuse B., Gupta N., Sobel Sokol A. *Sarin (GB, O-isopropyl methylphosphonofluoridate) neurotoxicity: critical review*. England, 2016.

Ulrich E.M., Morrison C.N. et al. *Chiral pesticides: identification, description, and environmental implications*. Unites States, 2012.

Hoskovcová M, Halánek E, Koblíha Z. *Study of efficacy of reactivator HI 6 in reactivation of immobilized acetylcholinesterase, inhibited by organophosphorus chemical warfare agents of the "G" series*. United Arab Emirates, 2009.

Rowe R. et al. *Handbook of pharmaceutical excipients*. London, 2005.

Buckingham S.D., Biggin P.C. et al. *Insect GABA receptors: splicing, editing, and targeting by antiparasitics and insecticides*. 2005.

Schmidt R. H., Rodrich G. e. *Food Safety Handbook*. 2003. ISBN 9780470362570.

Kučař M., Rejholec V. *Využití kvantitativních vztahů mezi strukturou a biologickou aktivitou*. Academia, Praha, 1987.

FaF:FDEFa_FAF Health Economics and Pharmacoeconomics

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu PharmDr. Dominik Grega, Ph.D.

Vyučující

PharmDr. Dominik Grega, Ph.D. (přednášející)

Cíle předmětu

The aim of the course is to present the theoretical framework of the economic specifics of the healthcare system and the methodological apparatus of individual areas of health technology assessment, especially with a focus on medical effectiveness and safety, economic assessment, social, legal, institutional, ethical and organizational issues, and to supplement them with examples from real practice and case studies.

Výukové metody

individual consultations, discussions, individual work, and study of literature

Metody hodnocení

oral exam

Primární způsob výuky

kontaktní

Výstupy z učení

After completing the course, the student will be able to:

- characterize the economic aspects of healthcare, the healthcare system, and the provision of medicines;
- participate in the planning and implementation of health-economic and pharmaco-economic analyses, outcomes research, and evaluation of health technologies;
- evaluate the possibilities of practical application and the impact of the results of analyses and studies.

Osnova

- History of health economics, pharmacoeconomics, and health technology assessment (HTA)
- Importance, principles, and methods of health economics, pharmacoeconomics, and HTA
- EUnetHTA basic model, HEOR overview
- Program of clinical research (RCT) vs. real-world evidence data (registries, pharmacovigilance)
- Systematic reviews in health economics, pharmacoeconomics, and HTA
- Health policy analyses
- Economic evaluation — analyses in the healthcare sector
- Institutional management and budget impact assessment
- Implementation of health economics results into clinical practice, dissemination and transfer of knowledge
- Transferability of data, outcomes, and results, local adaptation of HEOR
- Ethical, social, cultural, and other soft domains in health economics, pharmacoeconomics, and HTA
- Managed entry agreements, coverage with evidence development, payments by results, compassionate use programs, compulsory licensing, Google/Netflix model in healthcare

Literatura**doporučená literatura**

MCPAKE, Barbara, Charles E. M. NORMAND, Sam SMITH a Anne NOLAN. *Health economics : an international perspective*. Fourth edition. London: Routledge, Taylor & Francis Group, 2020, 1 online. ISBN 9781315169729. <https://www.taylorfrancis.com/books/9781315169729>

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STRACHOTOVÁ, Dana. *Farmakoekonomika*. Vydání první. Praha: Vysoká škola chemicko-technologická v Praze, 2019, 174 stran. ISBN 9788075920324.

GREGA, Dominik a Jozef KOLÁŘ. *Základy farmakoekonomie*. Online. 1. vyd. Brno: Veterinární a farmaceutická univerzita Brno, 2019. ISBN 978-80-7305-824-1. <https://katalog.vfu.cz/records/0b40f115-e968-4913-8134-5a7e47251d1f?back=https%3A%2F%2Fkatalog.vfu.cz%2Fsearch%3Fqt%3D%257B%2522and%2522%3A%255B%257B%2522starts%2522%3A%257B%2522value%2522%3A%2522grega%2522%257D%2C%2522field%2522%3A%2522custAuth>

Economic evaluation of pharmacy services. Edited by Zaheer-ud-din Babar. Amsterdam: Academic Press, 2017, xviii, 229. ISBN 9780128036594.

Drummond, F. Michael, Sculpher, J. Mark, Claxton, Karl, Stoddart. *Methods for the Economic Evaluation of Health Care Programmes*. Oxford Medical Publications, 4th Edition, 2015. ISBN 978-0199665884.

RASCATI, Karen L. *Essentials of pharmacoeconomics*. 1. vyd. Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins, 2009, viii, 250. ISBN 9780781765442.

ANNEMANS, Lieven. *Health economics for non-economists : an introduction to the concepts, methods and pitfalls of health economic evaluations*. Gent: Academia Press, 2008, xiii, 106. ISBN 9789038212746.

FaF:DFKa_FAF Pharmacokinetics

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu PharmDr. Tereza Kauerová, Ph.D.

Vyučující

PharmDr. Tereza Kauerová, Ph.D. (přednášející)

Cíle předmětu

The aim of the subject Pharmacokinetics is to extend and supplement the knowledge of DSP students about the processes that take place during the time course after the drug's entry into the body. Understanding pharmacokinetic patterns is essential for the rational dosing of medicines, choosing the right route of drug administration, understanding interindividual differences in terms of pharmacokinetic processes, evaluating potential risks associated with drug administration, etc.

Výukové metody

consultations, self-study

Metody hodnocení

oral examination

Primární způsob výuky

kontaktní

Výstupy z učení

After completing the course, the student will be able to clarify the regularity of the time course of processes after the drug enters the body. He can apply this knowledge to specific drugs and apply them in practice, as well as for scientific research in the field of medicinal products.

Osnova

The content of the subject Pharmacokinetics is a drug-related issue with an emphasis on the processes involved in the time course of the drug's entry into the body, also on the area of pharmacokinetic parameters, factors of non-genetic and genetic origin affecting the kinetics of the drug, evaluation of the bioequivalence of drugs, of pharmacokinetic drug interactions and on basic aspects of TDM.

Literatura**povinná literatura**

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Lüllmann H., Mohr K., Hein L. *Barevný atlas farmakologie*. Grada, Praha, 2012. ISBN 978-80-247-3908-3. <https://www.grada.cz/barevny-atlas-farmakologie-6795/>

Martínková Jiřina a kolektiv. *Farmakologie pro studenty zdravotnických oborů*. Grada, Praha, 2018. ISBN 978-80-247-4157-4. [https://www.grada.cz/farmakologie-\(2\)-7096/](https://www.grada.cz/farmakologie-(2)-7096/)

doporučená literatura

RITTER, James, R. J. FLOWER, Graeme HENDERSON, Yoon Kong LOKE, David J. MACEWAN, Emma S. J. ROBINSON a James FULLERTON. *Rang & Dale's pharmacology / James M. Ritter, Rod Flower, Graeme Henderson, Yoon Kong Loke, David MacEvan, Emma Robinson, James Fullerton*. Tenth edition. London: Elsevier, 2024, xvii, 850. ISBN 9780323873963.

Whalen K. *Lippincott Illustrated Reviews: Pharmacology, 7th edition*. Lippincott Williams & Wilkins, USA, 2018. ISBN 978-1496384133.

Trevor A, Katzung B, Masters S., Knuidering-Hall M. *Katzung & Trevor's Pharmacology Examination and Board Review*. McGraw-Hill Medical, 2012. ISBN 0071789235.

Katzung BG. *Basic and Clinical Pharmacology*. McGraw-Hill Medical, 2011. ISBN 978-0071764018.

Lincová Dagmar, Farghali, Hassan a kol. *Základní a aplikovaná farmakologie*. Galén, Praha, 2007. ISBN 9788072623730.

FaF:FDFFa_FAF Pharmaceutical Care and Evidence-Based Clinical Practice

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu PharmDr. Karel Vašut, Ph.D.

Vyučující

PharmDr. Karel Vašut, Ph.D. (přednášející)

Cíle předmětu

The course aims to provide students with a connection of knowledge from from clinical pharmacology and pharmacy, epidemiology, pharmacoepidemiology, public health, psychology and communication, and their application in everyday care provided by a pharmacist to a patient in various types of healthcare and social facilities.

Výukové metody

individual consultations, discussions, individual work, and study of literature

Metody hodnocení

oral exam

Primární způsob výuky

kontaktní

Výstupy z učení

After completing the course, the student will be able to:

- correctly identify and solve problems related to pharmacotherapy in clinical practice;
- plan, create, and implement pharmacists' activities in the framework of health promotion and health education;
- participate in the formation of pharmacotherapeutic recommendations and evaluation of their application in clinical practice;
- search for, evaluate, and apply relevant sources of information to support decision-making in clinical practice following the principles of EBM.

Osnova

- Pharmaceutical care in the Czech Republic, the EU and the world
- Psychology and communication with the patient
- Work and communication in a multidisciplinary healthcare team
- Medication-related problems — side effects, interactions, medication errors and their solution options

- Recommended diagnostic and therapeutic guidelines
- Pharmaceutical care and possibilities of a pharmacist in outpatient/ambulatory practice
- Pharmaceutical care and possibilities of a pharmacist in inpatient/hospital care
- Epidemiology and pharmacoepidemiology — theoretical and methodological principles
- Information sources and database systems in pharmacoepidemiology
- Post-authorisation clinical trials and the role of pharmacists in their implementation
- Principles of EBM and their application in clinical practice
- The role of pharmacists in the management of quality and safety of healthcare

Literatura

doporučená literatura

Pharmacoepidemiology. Edited by Brian L. Strom - Stephen E. Kimmel - Sean Hennessy. Sixth edition. Hoboken, NJ: Wiley Blackwell, 2020, 1 online. ISBN 9781119413370. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=2278702>

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Basic & clinical pharmacology. Edited by Bertram G. Katzung. Fourteenth Edition. New York: McGraw-Hill, 2018, xi, 1250. ISBN 9781259641152.

WOODWARD, Suzette. *Rethinking patient safety*. Boca Raton: CRC Press, 2017, 1 online. ISBN 9781315155029. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=1492890>

BROWN, Catana. *The evidence-based practitioner : applying research to meet client needs*. Philadelphia, PA: F.A. Davis Company, 2017, 1 online. ISBN 9780803658578. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=1442754>

VLČEK, Jiří a Magda VYTRŽÍŠALOVÁ. *Klinická farmacie*. 1. vyd. Praha: Grada, 2014, 255 s. ISBN 9788024745329.

VLČEK, Jiří a Daniela FIALOVÁ. *Klinická farmacie*. 1. vyd. Praha: Grada, 2010, 368, [2]. ISBN 9788024731698.

FaF:FDFRa_FAF Plant Physiology and Anatomy

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu prof. PharmDr. Petr Babula, Ph.D.

Vyučující

prof. PharmDr. Petr Babula, Ph.D. (přednášející)

Cíle předmětu

The aim of the subject of Plant Physiology is the study of system processes that allow to live and survive the plant in the given environment. The emphasis of the subject for DSP students is mainly focused on plant cell physiology and primary and secondary metabolism of plants and the importance of these metabolites in interactions between plants and between plants and the environment. Attention is focused on the secondary metabolites studied in DSP work and their relevance to the plant.

Výukové metody

Dialogic (discussion, interview, brainstorming) Methods of working with text (textbook, book)

Metody hodnocení

Oral exam.

Primární způsob výuky

kontaktní

Výstupy z učení

The graduate is familiar with the physiology of primary and secondary metabolism of plants, has an overview of the basic molecular-biological methods used in the study of plant physiology. Can actively work with literature of a given focus and present it.

Osnova

The content of the course is the physiology of plants, ie a system of processes that allow you to live and survive in a given environment. The emphasis of the course for DSP students is mainly on the physiology of the plant cell and the primary and secondary metabolism of plants and the importance of metabolites in interactions between plants and between plants and the environment. Orientation syllabus:

- Plant cell physiology
- Primary and secondary metabolism of plants from the point of view of molecular biology
- Methods of studying primary and secondary metabolism of plants molecular-biological approach

- Origin and evolution of secondary metabolism of plants and its co-evolution with other organisms
- Secondary metabolites and interactions of plants with the environment and other plants. Physiology of stress.
- Secondary metabolites of plants as important signaling molecules
- Significance of secondary metabolites in the life cycle of plants. Teaching includes participation in educational events organized by the Dept. of Natural Drugs.

Literatura

doporučená literatura

Buchanan, B. B., Gruijssem, W., Jones, R. L. *Biochemistry and Molecular Biology of Plants*. Wiley-Blackwell, 2nd Revised ed. Edition, 2015. ISBN 978-0470714218.

Taiz, L., Zeiger, E. *Plant Physiology and Development*. Sinauer Associates, Inc., 6th edition edition, 2014. ISBN 978-1605353265.

FaF:DFVa_FAF Pharmacovigilance

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu PharmDr. Bc. Hana Kotolová, Ph.D.

Vyučující

PharmDr. Bc. Hana Kotolová, Ph.D. (přednášející)

Cíle předmětu

Pharmacovigilance has been defined by the World Health Organisation as ?The science and activities relating to the detection, assessment, understanding and prevention of adverse effects or any other possible drug-related problem?.

Výukové metody

Individual consultations, methods of working with text (textbook, book, professional articles).

Metody hodnocení

Oral exam.

Primární způsob výuky

kontaktní

Výstupy z učení

The student will gain a more detailed look at the issue of pharmacovigilance.

Osnova

Introduction to the study, definition of pharmacovigilance, the clinical development of the medicinal product.
Basic concepts in pharmacovigilance.
Side effect, adverse event.
Types of side effects.
Types of adverse events.
Pharmacotherapeutic risk.
Drug-drug interactions - pharmacokinetic, pharmacodynamic.
The clinical manifestation of adverse reactions to drugs.
System for reporting, types of reports.
Legislation in the field of pharmacovigilance.

Literatura

povinná literatura

Demlová Regina, Říhová Barbora, Grycová Zuzana, Nerušilová Kateř. *Životní cyklus léčiv*. MASARYKOVA UNIVERZITA LÉKAŘSKÁ FAKULTA, 2014. URL info

WALLER, Patrick a Mira HARRISON-WOOLRYCH. *An introduction to pharmacovigilance*. Second edition. Chichester: Wiley Blackwell, 2017, 1 online. ISBN 9781119289784. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=1470327>

doporučená literatura

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FaF:DFYa_FAF Physical Chemistry

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu prof. PharmDr. Mgr. David Vetchý, Ph.D.

Vyučující

prof. PharmDr. Mgr. David Vetchý, Ph.D. (přednášející)

Cíle předmětu

Expanding the knowledge of the student focusing on pharmaceutically applied physical chemistry, obtained mainly from world databases containing knowledge from scientific publications especially of foreign research experts and institutions and increasing the ability of the student to process this knowledge into research texts focusing on the content of the study program.

Výukové metody

consultations, individual work, self-study

Metody hodnocení

ústní zkouška

Primární způsob výuky

kontaktní

Výstupy z učení

After completing the course, the student will be able to:

- apply the thermodynamic nature of a number of pharmaceutical processes;
- work with the factors that influence the solubility and dissolution of substances;
- influence kinetic parameters in pharmaceutical processes;
- influence important features of electrochemical and phase phenomena;
- apply rheological principles to a practical problem;
- influence important characteristics of colloidal systems

Osnova

Thermodynamics
Solubility
Diffusion, dissolution
Kinetics
Rheology
Colloids
Phase equilibrium
Phase interfaces
Electrochemistry

Literatura**doporučená literatura**

ATKINS, P. W., Julio DE PAULA a James KEELER. *Atkins' physical chemistry*. Twelfth edition. Oxford: Oxford University Press, 2023, xxxix, 927. ISBN 9780198847816.

HAMMES, Gordon G. a Sharon HAMMES-SCHIFFER. *Physical chemistry for the biological sciences*. Second edition. Hoboken, NJ: Wiley, 2015, 1 online. ISBN 9781118859148. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=985075>

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Martin's physical pharmacy and pharmaceutical sciences : physical chemical and biopharmaceutical principles in the pharmaceutical sciences. Edited by Patrick J. Sinko - Yashveer Singh. Sixth edition. Philadelphia: Wolters Kluwer, 2011, viii, 659. ISBN 9781609134020.

FaF:FDH5a_FAF **Basics of Humanities and Social Sciences in Pharmacy**

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu PharmDr. Tünde Ambrus, Ph.D.

Vyučující

PharmDr. Tünde Ambrus, Ph.D. (přednášející)

Cíle předmětu

The main aim of the course is to present basic terminology and methodology of selected humanities and social sciences relevant to understanding and studying particular interdisciplinary problems of pharmacy and healthcare.

Výukové metody

individual consultation, discussion, individual work and reading

Metody hodnocení

oral examination

Primární způsob výuky

kontaktní

Výstupy z učení

After attending the course, the student will be able:

- to characterize selected social sciences and humanities and their relevance for pharmacy and health sciences;
- to explain the importance and possible application of research methods of these sciences in pharmacy and healthcare;
- to apply the obtained knowledge in the study of interdisciplinary problems and issues of pharmaceutical, health, social sciences, and humanities.

Osnova

- Sociology, sociology of health and healthcare
- Psychology, psychology of health and disease, psychological aspects of healthcare providing and healthcare professions
- Politology, public policy, social, health, and medicines policy
- History, history of pharmacy and medicine
- Cultural and medical anthropology
- Geography of health and healthcare

Literatura**doporučená literatura**

MONAGHAN, Lee F. a Jonathan GABE. *Key concepts in medical sociology*. Third edition. Los Angeles: Sage, 2022, xxiii, 404. ISBN 9781526465887.

WILEY, Andrea S. a John S. ALLEN. *Medical anthropology : a biocultural approach*. Fourth edition. New York: Oxford University Press, 2021, xvi, 481. ISBN 9780197515990.

HRBKOVÁ, Jana. *Společenské vědy pro techniky. 2.*, aktualizované a rozšíř. Praha: Grada, 2020, 228 stran. ISBN 9788027128761. <https://www.bookport.cz/kniha/spolecenske-vedy-pro-techniky-6848>

DANICS, Štefan, Josef DUBSKÝ a Lukáš URBAN. *Základy sociologie a politologie*. 4. upravené a rozšířené. Plzeň: Vydavatelství a nakladatelství Aleš Čeněk, 2019, 358 stran. ISBN 9788073807511.

Routledge handbook of health geography. Edited by Valorie A. Crooks - Gavin J. Andrews - Jamie Pearce. London: Routledge Taylor & Francis Group, 2018, xxii, 386. ISBN 9780367659905.

ZEBROSKI, Bob. *A brief history of pharmacy : humanity's search for wellness*. New York: Routledge, 2016, 1 online. ISBN 9781315685830. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=1055306>

Health and healing in comparative perspective. Edited by Elizabeth Dixon Whitaker. London: Routledge, 2016, 1 online. ISBN 9780205004577. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=1432544>

BLATT, Amy J. *Health, science, and place : a new model*. Cham: Springer, 2015, xi, 133. ISBN 9783319378077.

ANTHAMATTEN, Peter a Helen HAZEN. *An introduction to the geography of health*. 1st pub. New York, N.Y.: Routledge, 2011, xviii, 273. ISBN 9780415498067.

FaF:FDLfa_FAF Dosage Forms with Controlled Drug Release and Targeting

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu doc. PharmDr. Kateřina Kubová, Ph.D.

Vyučující

doc. PharmDr. Kateřina Kubová, Ph.D. (přednášející)

Cíle předmětu

Expanding the knowledge of the student focusing on modern medical forms, with different profiles of drug release and their use in the current pharmacotherapy of local and systemic diseases, obtained mainly from world databases containing knowledge from scientific publications especially of foreign research experts and institutions and increasing the ability of the student to process this knowledge into research texts focusing on the content of the study program.

Výukové metody

Teaching is by way of consultation. Current literature will be sent to the student by the guarantor upon request.

Metody hodnocení

oral examination

Primární způsob výuky

kontaktní

Výstupy z učení

After completing the course, the student will be able to: -differentize the basic technological principles of modern dosage forms and their production -estimate the function of excipients in dosage form -estimate the behavior of a modern dosage form in the body -estimate the benefit of these forms for pharmacotherapy -suggest a suitable modification of the dosage form to ensure the desired drug release profile and site of its action

Osnova

Importance of dosage forms with controlled and targeted drug transport in therapy. Matrix systems for oral and other usage, their manufacturing technology, kinetics and release mechanism. Multiple dosage forms - their manufacturing technology and usage in the pharmacotherapy.

Microparticle dosage forms - their manufacturing technology and usage in the pharmacotherapy.
 Dosage forms with delayed drug release - their manufacturing technology and in the usage pharmacotherapy.
 Physiological factors of GIT in relation to modern dosage forms.
 pH-dependent polymers in pharmaceutical technology.
 Dosage forms for the treatment of colon diseases and absorption of drug from the area of the colon.
 Modern dosage forms for long-term drug delivery for topical therapy
 Modern dosage forms for long-term drug delivery for systemic therapy.

Literatura

doporučená literatura

Advanced and modern approaches for drug delivery. Edited by Amit Kumar Nayak - Md Saquib Hasnain - Bibek Laha - Sabayasachi Maiti. London: Academic Press, an imprint of Elsevier, 2023, 1 online. ISBN 9780323972192. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=3405454>

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Nanotechnology for drug delivery and pharmaceuticals. Edited by Ravindra Pratap Singh - Kshitij R. B. Singh - Jay Singh - Charles Oluw. London: Academic Press, 2023, xxxi, 440. ISBN 9780323953252.

Nasal drug delivery : formulations, developments, challenges, and solutions. Edited by Yashwant Pathak - Hemant K. S. Yadav. Cham: Springer, 2023, 1 online. ISBN 9783031231124. <https://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&AN=3578013>

Topical and transdermal drug delivery systems : applications and future prospects. Edited by Nayan A. Gujarathi - Juliana Palma Abriata - Raj K. Keservani - Anil K. First edition. Palm Bay, FL: Apple Academic Press, 2023, 1 online. ISBN 9781000577655. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=3504245>

Advances and challenges in pharmaceutical technology : materials, process development and drug delivery strategies. Edited by Amit Kumar Nayak - Kunal Pal - Indranil Banerjee - Samarendra Maji - U. London: Academic Press, 2021, 1 online. ISBN 9780128203002. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=2372034>

Drug delivery : principles and applications. Edited by Binghe Wang - Longqin Hu - Teruna Siahaan. Second edition. Hoboken, New Jersey: Wiley, 2016, 1 online. ISBN 9781118833230. http://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,cookie,uid&db=nlebk&AN=1202091&lang=cs&site=eds-live&scope=site&ebv=EB&ppid=pp_C1

FaF:FDMBa_FAF Microbiology

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu PharmDr. Alice Sychrová, Ph.D.

Vyučující

PharmDr. Alice Sychrová, Ph.D. (přednášející)

Cíle předmětu

The course focuses on current issues of pharmaceutical microbiology, which will include, in particular, natural antimicrobial agents, including those isolated from plants, and preservatives, methods for the evaluation of antimicrobial activity of plant products and other natural products, evaluation of interactions between medicinal plant products and microbes of the human and animal gut.

Výukové metody

Dialogic (discussion, interview, brainstorming)

Metody hodnocení

Oral examination

Primární způsob výuky

kontaktní

Výstupy z učení

Knowledge of basic and advanced methods of microbiology Knowledge of the mechanisms of action of antimicrobial agents Knowledge of natural antimicrobial compounds Knowledge of antibiotics and their effects

Osnova

A series of tutorials/consultations and studying alone at home on various aspects of pharmaceutical microbiology including microbial natural antibiotics and preservatives, methods of evaluation anti-microbial activity of plant substances and other natural products, assessment of interactions between herbal medicinal products and human and animal gut bacteria

Literatura

doporučená literatura

COWAN, M. Kelly a Heidi SMITH. *Microbiology : a systems approach*. Sixth edition. New York, NY: McGraw-Hill,

2022, xxix, 780. ISBN 9781260571516.

Practical handbook of microbiology. Edited by Lorrence H. Green - Emanuel Goldman. Fourth edition. Boca Raton: CRC Press, 2021, 1 online. ISBN 9781000245028. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=2701048>

Medical microbiology : a guide to microbial infections : pathogenesis, immunity, laboratory investigation and control. Edited by Mike Barer - William L. Irving - Andrew Swann - Nelun Perera. Nineteenth edition. [Amsterdam]: Elsevier, 2019, xv, 743. ISBN 9780702072000.

Mlynářčík. *Farmaceutická mikrobiológia*. UK Bratislava, 2017. ISBN 978-80-223-4102-8.

MURRAY, Patrick R., Ken S. ROSENTHAL a Michael A. PFALLER. *Medical microbiology*. 8th edition. Philadelphia: Elsevier, 2016, x, 836. ISBN 9780323299565.

Bryskier André. *Antimicrobial Agents*. ASM Press, Washington DC, 2005. ISBN 978-1-55581-237-9.

FaF:FDMHa_FAF **Methods of Evaluation and Formulation Dossiers of Pharmaceuticals**

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu prof. PharmDr. Mgr. David Vetchý, Ph.D.

Vyučující

prof. PharmDr. Mgr. David Vetchý, Ph.D. (přednášející)

Cíle předmětu

Expanding the knowledge of the student focusing on stability studies, bioequivalence studies, patent protection, registration procedure of the drugs and proper statistic method, obtained mainly from world databases containing knowledge from scientific publications especially of foreign research experts and institutions and increasing the ability of the student to process this knowledge into research texts focusing on the content of the study program.

Výukové metody

consultations, individual work and self-study

Metody hodnocení

oral exam

Primární způsob výuky

kontaktní

Výstupy z učení

After completing the course, the student will be able to:

- describe the procedures for creating and conducting stability studies;
- describe the factors that influence the bioequivalence of medicinal products;
- identify and describe the procedures leading to the marketing authorization of a medicinal product and the placing on the market of a food supplement;
- apply the principles of legal protection of medicinal products;
- apply appropriate statistical methods to their pharmaceutical studies and experiments

Osnova

Original drug development process, generic drug development process

Stability studies I. Basic definitions of terms, the purpose of stability studies, good manufacturing practice in relation to the stability studies, the basic procedures for stability testing, stability studies of management practices

Stability studies II. Types of stability studies, pharmaceutical packaging in relation to stability, statistical analysis of data from stability studies, documentation, trends in stability studies

Bioequivalence studies I. Basic definitions of terms, types of bioequivalence studies

Bioequivalence studies II. Biopharmaceutics classification system, the implementation rules of bioequivalence studies in EU

Marketing authorisation of medicinal products. Introduction, marketing authorisation applications, marketing authorisation procedures, variations applications, marketing authorisation transfer, parallel import of medicinal products. The content and layout of a complete dossier for a medicinal product, labelling, packaging leaflet data, content and layout of the summary of product characteristics

Placing on the market within the EU of food supplements, novel foods or novel food ingredients

Legal protection of medicinal products. Industrial Property Office, patent and its protection, utility model and its protection, industrial design and its protection, trademark and its protection.

International patent classification, the procedure for searching information in internet databases

Literatura

doporučená literatura

Vetchý D., Vetchý V. *Klíč pro statistické vyhodnocování farmaceutických studií, VŠ skripta*.

Vetchý D. a kol. *Stabilitní studie, bioekvivalenční studie, proces registrace a právní ochrana léčivých přípravků, VŠ skripta*.

FaF:FDMOa_FAF **Molecular Biology**

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu Mgr. Marie Brázdová, Ph.D.

Vyučující

Mgr. Marie Brázdová, Ph.D. (přednášející)

Cíle předmětu

Molecular biology for DSP as a discipline which aims to study cellular biological processes at their molecular level. Learning outcomes of the course unit aim to acquaint the student with current trends and methods, especially for testing the bioactivity of natural substances at the molecular level.

Výukové metody

Methods of working with text (textbook, book)

Metody hodnocení

Ústní zkouška

Primární způsob výuky

kontaktní

Výstupy z učení

Knowledge of methodology used in molecular biology Knowledge of basic interactions of natural compounds with molecular targets Knowledge of molecular biology forming the basis for follow-up subjects Methods of molecular biology, Biotechnology of drugs, Exercises from drug biotechnology, Pharmacogenomics, Structure and evolution of genomes. After completing the course, the student will be able to: - identify and summarize important features on the structure of proteins and nucleic acids and the functions and relationships of information macromolecules in the transmission of genetic information; - describe the structure of prokaryotic and eukaryotic genomes, with mechanisms of replication, transcription, translation and regulation of gene expression; - describe the molecular mechanisms of mutagenesis, recombination and transposition, repair mechanisms and the molecular nature of carcinogenesis.

Osnova

- 1) Molecular biology and its position in biological sciences, milestones, personalities, central dogma of molecular biology
- 2) Information macromolecules, their structure, function and interaction in gene expression, genetic code.
- 3) Structure of prokaryotic genome, replication and gene expression in prokaryotes.
- 4) Structure of eukaryotic genome, replication and gene expression in eukaryotes.
- 5) Regulation of gene expression, molecular signalling.
- 6) RNA interference
- 7) Molecular biology of viruses, replication, expression of bacterial and animal virus's genes.
- 8) Mutagenesis, spontaneous and induced mutation and reversion.
- 9) Molecular basis of recombination, recombination in genetics.
- 10) Transposons, mechanisms of transposition, retroelements, retroviruses.
- 11) Reparation and excision mechanisms.
- 12) Molecular basis of cancerogenesis, protooncogenes and oncogenes, suppressor genes, oncoviruses.
- 13) Cell cycle and apoptosis

Literatura**doporučená literatura**

CHANDAR, Nalini a Susan VISELLI. *Lippincott illustrated reviews : cell and molecular biology*. Third edition. Philadelphia: Wolters Kluwer, 2024, 270 stran. ISBN 9781975180898.

ALBERTS, Bruce, Rebecca HEALD, Alexander JOHNSON, David Owen MORGAN, Martin C. RAFF, Keith ROBERTS a Peter WALTER. *Molecular biology of the cell*. Edited by John H. Wilson - Tim Hunt. Seventh edition. New York, NY: W. W. Norton & Company, 2022, xxxviii, 1. ISBN 9780393884821.

LODISH, Harvey F., Arnold BERK, Chris KAISER, Monty KRIEGER, Anthony BRETSCHER, Hidde Lolke PLOEGH, Angelika AMON, Kelsey C. MARTIN a Michael B. YAFFE. *Molecular cell biology*. Ninth edition. New York: Macmillan International Higher Education, 2021, xliii, 118. ISBN 9781319365486.

LIEBERMAN, Michael a Rick E. RICER. *Biochemistry, molecular biology and genetics*. Seventh edition. Philadelphia: Wolters Kluwer Health, 2019, xi, 444. ISBN 9781496399236.

D. Peter Snustad Michael J. Simmons. *Genetika*. Brno, 2017. ISBN 9788021086135.

MCLENNAN, Alexander G., Andy BATES, Phil TURNER a Mike WHITE. *Molecular biology*. Fourth edition. New York: Garland Science, 2013, 1 online. ISBN 9781283860765. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=507454>

FaF:FDMUa_FAF **Mechanisms of Drug Release and their Statistical Evaluation**

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu doc. Mgr. Jan Muselík, Ph.D.

Vyučující

doc. Mgr. Jan Muselík, Ph.D. (přednášející)

Cíle předmětu

Expanding the knowledge of the student focusing on in vitro and in vivo mechanisms of drug release and their statistical evaluation, obtained mainly from world databases containing knowledge from scientific publications especially of foreign research experts and institutions and increasing the ability of the student to process this knowledge into research texts focusing on the content of the study program.

Výukové metody

consultation with the teacher

Metody hodnocení

Oral examination

Primární způsob výuky

kontaktní

Výstupy z učení

After completing the course the student will:

- have theoretical knowledge in the field of dissolution testing - be able to interpret the dissolution profile of a drug from a dosage form - theoretically and practically master the use of mathematical models to infer the kinetics and mechanism of drug release - estimate the effect of polymer blends on drug release - be able to make sophisticated comparisons of dissociation profiles

Osnova

Dissolution testing of drug forms Modeling and comparison of dissolution profiles

Mathematical comparison of dissolution profiles

The effect of polymer blends on the release profiles

A simple equation for description of solute release - Fickian and non-fickian release from non-swellable devices in the form of slabs, spheres, cylinders or discs

Design and evaluation of matrix-based controlled release tablet

Formulation study and drug release mechanism

Drug release evaluation

Literatura**doporučená literatura**

Advances and challenges in pharmaceutical technology : materials, process development and drug delivery strategies. Edited by Amit Kumar Nayak - Kunal Pal - Indranil Banerjee - Samarendra Maji - U. London: Academic Press, 2021, 1 online. ISBN 9780128203002. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=2372034>

MUSELÍK, Jan, Jakub VYSLOUŽIL a Kateřina KUBOVÁ. *Modern Instrumental Methods in Solid Dosage Form Analysis.* 1. vyd. Brno: Masarykova univerzita, 2021, 231 s. ISBN 978-80-210-9723-0.

ROWE, Philip. *Essential statistics for the pharmaceutical sciences.* Second edition. Chichester: Wiley, 2016, xx, 409. ISBN 9781118913390.

VETCHÝ, David a Vladimír VETCHÝ. *Klíč ke statistickému vyhodnocování farmaceutických studií.* Vydání 1. Brno: Veterinární a farmaceutická univerzita, 2006, iii, 123. ISBN 8073055651.

FaF:FDNMa_FAF Physical Principles of NMR

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu doc. Ing. Pavel Bobál, CSc.

Vyučující

doc. Ing. Pavel Bobál, CSc. (přednášející)

Cíle předmětu

Learning outcomes of the course aim the subject on the introduction of the student of DSP into nuclear magnetic resonance, with special focus on the identification of secondary metabolites of plants. The subject presents possibilities of using NMR and individual experiments in solving the structures of particular isolated compounds. Acquired knowledge will enable them to orientate in modern methods of NMR spectroscopy used in organic and inorganic chemistry, biochemistry and methods of modern structural analysis.

Výukové metody

Discussion, brainstorming, reading. Demonstrations of methods

Metody hodnocení

Oral examination.

Primární způsob výuky

kontaktní

Výstupy z učení

Understanding to theoretical bases of NMR and the ability to practically use available NMR techniques to elucidate the structure of organic compounds

Osnova

Subject Physico-chemical Fundamentals of NMR is designed to introduce the techniques particularly ^1H , ^{13}C NMR spectroscopy, as powerful tools for structure elucidation of organic compounds. A brief introduction to the physical principles of NMR spectroscopy will be followed by extensive analysis and discussion of NMR parameters such as chemical shift, coupling constants, splitting patterns, etc. The second half of the course is dedicated to the use of multi-pulse experiments (spin decoupling, NOE, APT, INEPT, DEPT etc.) and 2-dimensional techniques (COSY, NOESY, ROESY, etc.) in structure elucidation of complex natural products.

Literatura**povinná literatura**

SILVERSTEIN, Robert M. *Spectrometric identification of organic compounds. 8th ed.*. Hoboken: Wiley, 2015. ISBN 978-0-470-61637-6.

PRETSCH, Ernö, P. BU?HLMANN a M. BADERTSCHER. *Structure determination of organic compounds: tables of spectral data. 4th, rev. and enl. ed.*. Berlin: Springer, 2009. ISBN 978-3-540-93809-5.

FaF:FDOAa_FAF General and Inorganic Chemistry

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu PharmDr. Tomáš Goněk, Ph.D.

Vyučující

PharmDr. Tomáš Goněk, Ph.D. (přednášející)

Cíle předmětu

The aim of the subject is to broaden knowledge of general and inorganic chemistry in particular areas joined with dissertation of DSP student. Especially understanding of wide consequences of electron properties and reactivity of inorganic compounds in organic synthesis and not least in the processes of drug formulation.

Výukové metody

individual consultations, seminar work based on literary research

Metody hodnocení

continuous consultation of seminar work, defense of seminar work and professional discussion. Oral exam from selected chapters of inorganic chemistry.

Primární způsob výuky

kontaktní

Výstupy z učení

After completing the course, the student will:

- understand the function of inorganic compounds in organic synthesis and reaction mechanisms;
- able to independently interpret and apply the results of literature search

Osnova

Tuition in the form of consultations and seminary works focused on specific part of general and inorganic chemistry related to dissertation of particular student. Content will be focused on intensifying knowledge and understanding consequences of chosen problems.

Literatura**doporučená literatura**

PFAFF, Gerhard. *Inorganic pigments. 2nd, revised and extended ed.* Berlin: De Gruyter, 2023, xi, 379. ISBN 9783110743913.

LALENA, John N., David A. CLEARY a Olivier B. M. HARDOUIN DUPARC. *Principles of inorganic materials design. Third edition.* Hoboken, NJ: Wiley, 2020, xxvi, 694. ISBN 9781119486831.

RAO, C. N. R. a Kanishka BISWAS. *Essentials of inorganic materials synthesis.* Hoboken, New Jersey: Wiley, 2015, x, 209. ISBN 9781118832547.

PFENNIG, Brian William. *Principles of inorganic chemistry.* Hoboken, New Jersey: Wiley, 2015, 1 online. ISBN 9781118859018. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=963709>

Housecroft, C. E., Sharpe, A. G. *Anorganická Chemie.* Praha, 2014.

Meissler, G., Tarr, D.A. *Inorganic Chemistry.* Boston, 2011.

Greenwood N.N., Earnshaw A. *Chemistry of the Elements.* Amsterdam, Elsevier, 2010. ISBN 9780750633659.

Roat-Malone, R.M. *Bioinorganic Chemistry: A Short Course.* Amsterdam, 2007.

Bertini, I. *Biological inorganic chemistry.* Sansalito, 2007.

Rayner-Canham, G. *Descriptive inorganic chemistry.* New York, 2006.

FaF:FDOCa_FAF Organic Chemistry

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu doc. Ing. Pavel Bobál, CSc.

Vyučující

doc. Ing. Pavel Bobál, CSc. (přednášející)

Cíle předmětu

Organic chemistry gives students information about the fundamentals of organic compounds structure, their reactions, and the underlying reaction mechanism. Organic chemistry is essential for many other disciplines, such as biochemistry, analytical chemistry, pharmaceutical chemistry, physiology, pharmacology and other health and biological studies. Close attention is paid to the interrelation between organic chemistry and these disciplines.

Výukové metody

consultations, discussions, individual work and reading

Metody hodnocení

Oral examination

Primární způsob výuky

kontaktní

Výstupy z učení

Understanding of organic chemistry, understanding of structure and reactivity of organic compounds, knowledge of the basis of IUPAC nomenclature of organic compounds and principals of stereochemistry.

Osnova

1. What is organic chemistry? 2. Organic structures
3. Determining organic structures
4. Structure of molecules
5. Organic reactions
6. Nucleophilic addition to the carbonyl group
7. Delocalization and conjugation
8. Acidity, basicity, and pKa
9. Using organometallic reagents to make C-C bonds
10. Nucleophilic substitution at the carbonyl group
11. Nucleophilic substitution at C=O with loss of carbonyl oxygen
12. Equilibria, rates, and mechanisms
13. ¹H NMR: Proton nuclear magnetic resonance
14. Stereochemistry
15. Nucleophilic substitution at saturated carbon
16. Conformational analysis
17. Elimination reactions
18. Review of spectroscopic methods
19. Electrophilic addition to alkenes
20. Formation and reactions of enols and enolates
21. Electrophilic aromatic substitution
22. Conjugate addition and nucleophilic aromatic substitution
23. Chemoselectivity and protecting groups
24. Regioselectivity
25. Alkylation of enolates
26. Reactions of enolates with carbonyl compounds: the aldol and Claisen reactions
27. Sulfur, silicon, and phosphorus in organic chemistry
28. Retrosynthetic analysis
29. Aromatic heterocycles 1: reactions
30. Aromatic heterocycles 2: synthesis
31. Saturated heterocycles and stereoelectronics
32. Stereoselectivity in cyclic molecules
33. Diastereoselectivity
34. Pericyclic reactions 1: cycloadditions
35. Pericyclic reactions 2: sigmatropic and electrocyclic reactions
36. Participation, rearrangement, and fragmentation
37. Radical reactions
38. Synthesis and reactions of carbenes
39. Determining reaction mechanisms
40. Organometallic chemistry
41. Asymmetric synthesis
42. Organic chemistry of life
43. Organic chemistry today

Literatura**povinná literatura**

MCMURRY, John. *Organická chemie*. Vydání první. Brno: Vysoké učení technické v Brně/Nakladatelství VUTUM, 2015, xix, 1178. ISBN 9788070809303.

doporučená literatura

TIMBERLAKE, Karen C. *Chemistry : an introduction to general, organic, and biological chemistry*. Global edition. New York: Pearson, 2019, 716 stran. ISBN 9781292228860.

VOGEL, Pierre a Kendall N. HOUK. *Organic chemistry : theory, reactivity and mechanisms in modern synthesis*. Edited by Robert H. Grubbs. Weinheim: Wiley-VCH, 2019, xxx, 1352. ISBN 9783527345328.

KLEIN, David R. *Organic chemistry*. Global edition. Singapore: Wiley, 2018, xvi, 1217. ISBN 9781119451051.

FaF:FDPPa_FAF **Pathophysiology**

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu doc. MVDr. Pavel Suchý, Ph.D.

Vyučující

doc. MVDr. Pavel Suchý, Ph.D. (přednášející)

Cíle předmětu

A follow-up of the Master's degree study programme of physiology and pathophysiology deepens students' knowledge of etiopathogenesis and course of a disease. Theoretical and practical education focused on pathological models designed for testing of new and biologically active substances will constitute an inseparable part of the subject.

Výukové metody

class discussion, group projects, homework

Metody hodnocení

oral examination

Primární způsob výuky

kontaktní

Výstupy z učení

Advanced knowledge of pathophysiology focused on pathological models designed for testing of new and potentially biologically active substances - in vitro and in vivo.

Osnova

The aim of the subject is to broaden and deepen students' knowledge in the area of pathophysiology they obtained during their Master's degree programme. Another goal is to provide students theoretical and practical knowledge of in vitro and in vivo experimental models used in pharmacological testing of newly synthesized (isolated) biologically active substances.

Literatura

doporučená literatura

KITTNAR, Otomar. *Lékařská fyziologie*. 2., přepracované a doplně. Praha: Grada, 2020, 743 stran. ISBN 9788024719634.

Pathophysiology of disease : an introduction to clinical medicine. Edited by Gary D. Hammer - Stephen J. McPhee. Eight edition. New York: McGraw-Hill Education, 2018, xiv, 814. ISBN 9781260288513.

Shayne Cox Gad. *Drug Safety Evaluation. Third Edition*. WILEY New Jersey, 2017. ISBN 978-1-119-09739-6.

MULRONEY, Susan E. a Adam K. MYERS. *Netter's essential physiology*. Illustrated by Frank H. Netter - Carlos A. G. Machado - John A. Craig - James A. Second edition. Philadelphia, PA: Elsevier, 2016, 1 online. ISBN 9780323375849. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=1287551>

Rokyta a kol. *Fyziologie a patologická fyziologie: pro klinickou praxi*. Grada Publishing a.s, 2015. ISBN 978-80-247-4867-2.

Načas, E. a kol.: *Obecná patologická fyziologie*. Karolinum Praha, 2007. ISBN 978-80-246-1291-1.

Dipiro, J.T. et a. *Pharmacotherapy. A Pathophysiologic Approach*. McGraw-Hill Company Inc., 2007. ISBN 978-0-017-147899-.

Načas, E. a kol.: *Patologická fyziologie orgánových systémů. Část 1.*. Karolinum Praha, 2003. ISBN 80-246-0615-1.

Načas, E. a kol.: *Patologická fyziologie orgánových systémů. Část 2.*. Karolinum Praha, 2003. ISBN 80-246-0674-7.

FaF:FDRFa_FAF **Rational Pharmacotherapy**

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu PharmDr. Bc. Hana Kotolová, Ph.D.

Vyučující

PharmDr. Bc. Hana Kotolová, Ph.D. (přednášející)

Cíle předmětu

The aim of the course is to provide students with an interdisciplinary perspective, integrating knowledge of experimental pharmacology with clinical and paraclinical disciplines with the aim of studying and using objective methods to evaluate the effectiveness and safety of medicines, and factors influencing rational pharmacotherapy.

Výukové metody

individual consultation, study of professional literature

Metody hodnocení

Oral exam

Primární způsob výuky

kontaktní

Výstupy z učení

The student will gain a more detailed view of the clinical use of medicines and rational and individualized pharmacotherapy.

Osnova

General introduction, basic terminology, therapeutic monitoring of drugs Basic clinical values examined in clinical biochemistry
Pharmacodynamic and pharmacokinetic drug interactions
Addictions to medical drugs.
Clinical manifestations of adverse drug reactions, potentially inappropriate medication in old age
Pharmacotherapy in pregnancy and lactation
Pharmacotherapy of psychotic disorders
Pharmacotherapy of depressions, anxiety and insomnia
Pharmacotherapy of selected CNS diseases (Parkinson's disease, multiple sclerosis Alzheimer's disease, vascular dementia).
Pharmacotherapy of allergic diseases, bronchial asthma.
Chronic obstructive pulmonary disease, infectious diseases of the air passages
Metabolic syndrome, obesity, disorders of lipid metabolism.
Pharmacotherapy in diabetes mellitus, late complications of DM.
Pharmacotherapy in cardiology (ischemic heart disease, heart failure, heart rhythm disorders, arterial hypertension)
Pharmacotherapy of digestive tract diseases (disorders of oesophagus, stomach, duodenum, liver disorders)
Pharmacotherapy v hematology (anemia, hemostasis disorders)
Pharmacotherapy v endocrinology (thyroid disorders)
Pharmacotherapy osteopathy
Pharmacotherapy in urology (benign prostate hyperplasia, erectile dysfunction, incontinence)

Literatura**povinná literatura**

RITTER, James, R. J. FLOWER, Graeme HENDERSON, Yoon Kong LOKE, David J. MACEWAN, Emma S. J. ROBINSON a James FULLERTON. *Rang & Dale's pharmacology / James M. Ritter, Rod Flower, Graeme Henderson, Yoon Kong Loke, David MacEvan, Emma Robinson, James Fullerton*. Tenth edition. London: Elsevier, 2024, xvii, 850. ISBN 9780323873963.

BROWN, M. J., Pankaj SHARMA, Fraz A. MIR a P. N. BENNETT. *Clinical pharmacology*. Twelfth edition. Edinburgh: Elsevier, 2019, 1 online. ISBN 9780702073304. <https://ezproxy.muni.cz/login?url=https://search.ebscohost.com/login.aspx?authtype=ip&custid=s8431878&lang=cs&profile=eds&direct=true&db=nlebk&AN=1742282>

Markova farmakoterapie vnitřních nemocí. Edited by Josef Marek - Michal Vrablík. 5., zcela přepracované a d. Praha: Grada, 2019, xxiv, 868. ISBN 9788024750781.

Farmakologie. Edited by Jan Švihovec - Jan Bultas - Pavel Anzenbacher - Jaroslav Chládek - J. 1. vydání. Praha: Grada Publishing, 2018, xix, 962. ISBN 9788024755588.

doporučená literatura

Martina Vašáková a kolektiv. *Moderní farmakoterapie v pneumologii*. Maxdorf. ISBN 978-80-7345-506-4.

BENEŠ, Jiří. *Antibiotika : systematika, vlastnosti, použití*. 1. vydání. Praha: Grada Publishing, 2018, 598 stran. ISBN 9788027106363.

Basic & clinical pharmacology. Edited by Bertram G. Katzung. Fourteenth Edition. New York: McGraw-Hill, 2018, xi, 1250. ISBN 9781259641152.

Mohr P. *Klinická psychofarmakologie*. 2017.

Štětkářová I. a kol. *Moderní farmakoterapie v neurologii*. Maxdorf, 2017. ISBN 978-80-7345-5.

Stockley. *Drug Interactions*. Pharmaceutical Press, 2016. ISBN 978 0 85711 270 5.

PERLÍK, František a Ondřej SLANAŘ. *Individualizace farmakoterapie*. Vydání 1. Praha: Stanislav Juhaňák - Triton, 2016, 159 stran. ISBN 9788073876364.

Libor Zámečník, Petr Macek. *Moderní farmakoterapie v urologii*. Maxdorf, 2012. ISBN 978-80-7345-276-6.

Vyučující

prof. PharmDr. Karel Šmejkal, Ph.D. (přednášející)

Cíle předmětu

The Separation Analysis Methods aim to show DSP students modern methods of isolation of natural substances, especially chromatographic techniques. It deepens knowledge of both analytical and preparative separation of secondary metabolites, focusing on specific methods of division and detection. It shows the possibilities of so-called scale-up chromatographic systems, the specifics in the division of different types of substances, and the possibility of verifying the quality of the separation performed.

Výukové metody

Discussion, reading, brainstorming, demonstration of methods.

Metody hodnocení

Oral examination

Primární způsob výuky

kontaktní

Výstupy z učení

The ability to practically use all the available separation analytical methods, to control their theoretical basics.

Osnova

Separation analytical methods is a subject showing the modern approaches for the isolation of natural compounds, namely using different chromatographic techniques. It shows possibilities of both analytical and preparative separation, including the scaling up of the methods. It is targeted on specifics of separation of different compounds, chromatographic systems, and also on the control of the quality of the separation process. 1) analytical HPLC

2) semipreparative HPLC

3) analytical TLC

4) preparative TLC

5) column chromatography

6) further separation techniques

Literatura**doporučená literatura**

Smejkal, K, Muselik, J, Mokry, P. *Laboratory methods of experimental phytochemistry*. Brno, 2017. ISBN 978-80-7305-796-1.

Sarker, SD, Latif, Z, Gray, AI. *Natural Products Isolation*. New jersey, 2006. ISBN 1-59259-955-9.

Walton, NJ, Brown, DE. *Chemicals from Plants*. London, 1999. ISBN 981-02-2773-6.

FaF:FDSBa_FAF Structural Biology and Chemistry of Drugs

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu doc. PharmDr. Oldřich Farsa, Ph.D.

Vyučující

doc. PharmDr. Oldřich Farsa, Ph.D. (přednášející)

Cíle předmětu

Biomacromolecules exhibiting primary, secondary, tertiary and even quaternary structures belong among the most important parts of living organisms. Their importance for the therapy of various diseases is also crucial. Proteins, in particular receptor molecules and enzymes are therapeutic targets. Some enzymes and modified receptor molecules can be, however, found among medicines as well as protein and peptide hormones, cytokines, haematopoietic factors. Last, but not least members of this series are antibodies. These are mainly therapeutic monoclonal antibodies known as mabs. Also nucleic acids, various DNA and RNA types, can be therapeutic targets, although much more frequently is the role of therapeutic targets for small molecule medicines played by enzymes taking part in their synthesis or post-synthetic modifications. Shorter or longer molecules of less or more modified nucleic acids, namely antisense oligonucleotides and DNA vaccines, can also act as therapeutics. Polysaccharides, the third important group of biogenic macromolecules, represent also therapeutic targets, however, drugs of this type are of much greater importance (e.g. heparines, chondroitine). The advanced discipline intended for Ph.D. students is just focused on biologic macromolecules both native and modified and their interactions with low molecular drugs and other biopolymers.

Výukové metody

individual consultation, discussion, individual work and reading

Metody hodnocení

Oral exam

Primární způsob výuky

kontaktní

Výstupy z učení

Knowledge of selected types of biomacromolecules, which can serve both as therapeutic targets and drugs, in an extent previously agreed by the examiner.

Osnova

1. Proteins as drugs and as drug targets. Enzymes. Hydrolases: peptidases, other amidases. 2. Nucleic acids

and their fragments as drugs and as drug targets. Antisense oligonucleotides, DNA vaccines. Various RNA types (mRNA, tRNA, miRNA) as therapeutic targets.

3. Polysaccharides and oligosaccharides as drugs. Peptidoglycan of the microbial cell wall as a target for antibiotics.

4. Lipides of special functions as therapeutic targets. Mycolic acids of mycobacteria. Lipoteichoic acids of Gram-positive bacteria.

Literatura

doporučená literatura

BRENDA - *The Comprehensive Enzyme Information System*. <https://www.brenda-enzymes.org/>

MEROPS *the Peptidase Database*. <https://www.ebi.ac.uk/merops/>

UniProt *Protein Data Base*. <https://www.uniprot.org/>

Rawlings N.D., Savelsen G.S. (eds.). *Handbook of proteolytic enzymes*. London, San Diego, Waltham, 2013. ISBN 978-0-12-382219-2.

Smith H. C. *RNA and DNA Editing: Molecular Mechanisms and Their Integration into Biological Systems*. Hoboken, New Jersey, USA, 2008. ISBN 9780470262269.

FaF:FDTOa_FAF Pharmaceutical Toxicology

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu doc. MVDr. Pavel Suchý, Ph.D.

Vyučující

doc. MVDr. Pavel Suchý, Ph.D. (přednášející)

Cíle předmětu

A follow-up of the Master's degree programme deepens students' knowledge of pharmaceutical toxicology and research in the area of evaluation of toxicity of new biologically active substances and undesired drug effects.

Výukové metody

discussion, group projects, homework

Metody hodnocení

oral examination

Primární způsob výuky

kontaktní

Výstupy z učení

Advanced knowledge of toxicology focusing on pharmaceutical toxicology, verification of safety of new and potentially effective substances, clinical evaluation of drugs and assessment of their possible side effects.

Osnova

Students will obtain theoretical and practical knowledge of toxicological methods used in testing of biologically active substances (potential drugs), on in silico, in vitro and in vivo studies. They will learn about clinical evaluation of new pharmaceutical drugs (especially the first and second phase of clinical evaluation), and about methods monitoring their use in clinical practice, recognize and assess undesired effects and analyze the risk-benefit ratio associated with their use.

Literatura

doporučená literatura

LINHART, Igor. *Toxikologie : interakce škodlivých látek s živými organismy, jejich mechanismy, projevy a důsledky*. 3. upravené a rozšířené. Praha: Vysoká škola chemicko-technologická v Praze, 2022, 411 stran. ISBN 9788075921031.

Balíková, M. *Forenzní a klinická toxikologie*. Galén Praha, 2017. ISBN 9788074923043.

Will, Y. *Drug discovery toxicology*. New Jersey, 2016.

LEGATH, J., SUCHÝ, P. aj. *TOXIKOLOGIA - kompendium pro farmaceuty*. Košice, 2016. ISBN 978-80-8077-521-6.

Handbook of toxicology. Edited by Michael J. Derelanko - Carol Auletta. Third edition. Boca Raton: CRC Press, 2014, lii, 968. ISBN 9781439890134.

CASARETT DOULL`S. *Essentials of Toxicology*. 2010. ISBN 0071742743.

FaF:FDZVa_FAF Molecular Principles of Drug Design

Předmět není v aktuálních obdobích! 5 kreditů, ukončení zk, garant předmětu doc. PharmDr. Oldřich Farsa, Ph.D.

Vyučující

doc. PharmDr. Oldřich Farsa, Ph.D. (přednášející)

Cíle předmětu

A specific drug molecule is in the spotlight of this discipline. The advanced course proceeds the general Medicinal Chemistry and develops it towards research and development of medicines on molecular level. The discipline sums up different approaches and protocols either typical only for Medicinal Chemistry (privileged structures' concept, drug likeness, pharmacogenomics, fragment method, molecular docking etc.) or adapted from other more general disciplines (QSAR including physico-chemical descriptors used there, combinatorial chemistry). The discipline touches also methods of the activity assessment of biologically active compounds in vitro, some pharmacokinetic systems (efflux pumps) and specificity of development of veterinary drugs. The development in some model therapeutic groups is here described in more detail (strong analgesics as an example of small molecules, haematopoietic factors as an example of biologic therapeutics).

Výukové metody

Consultations, self-study of recommended suitable resources.

Metody hodnocení

Oral exam.

Primární způsob výuky

kontaktní

Výstupy z učení

Knowledge of the scope of drug research and development from the point of view "through the molecule structure" in an previously agreed extent.

Osnova

Topics

1. Introduction into the discipline, its concept and organisation. Combinatorial chemistry as a tool of drug design.
2. Physico-chemical properties of compounds and their importance for the activity in the organism.
3. Quantitative structure-activity relationships
4. Optimisation of physico-chemical properties based on analogy.
5. Design of strong analgesics.
6. Development of biologic therapeutics.
7. Theory of privileged structures. Chemogenomics.
8. Fragment method in drug design.
9. Design of drugs with respect to their metabolism I. Toxic metabolites.
10. Design of drugs with respect to their metabolism II. Prodrugs and their design. (
11. Development of specific veterinary medicines.
12. Membrane transporters and their importance for drug design.
13. Efflux pumps and their importance in drug design and development. (
14. Interaction of a target structure and a drug on molecular level.

Literatura**doporučená literatura**

Avdeef, A. *Absorption and Drug Development*.

Fischer, J., Ganellin, C.R. *Analogue-based Drug Discovery*. ISBN 978-3-572-31257-3.

You, G.F., Morris, M.E. *Drug Transporters*. ISBN 978-0-471-78491-3.

Pliška, V., Testa, B., van de Waterbeemd, H. *Lipophilicity in Drug Action and Toxicology*. ISBN 3-527-29383-3.

Hilficker, R. *Polymorphism*. ISBN 978-3-527-31146-0.

Kerns, E.H., Di, L. *Drug-like Properties: Concepts, Structure Design and Methods: from ADME to Toxicity Optimization*. 2008. ISBN 978-0-1236-9520-8.

Kubinyi, H. *QSAR: Hansch Analysis and Related Approaches*. 2008. ISBN 9783527616824. <https://onlinelibrary.wiley.com/action/doSearch?field1=Contrib&text1=Kubinyi%2C+Hugo&field2=AllField&text2=&field3=AllField&text3=&Ppub=&startPage=&target=titleSearch&content=journalTitle>

Wermuth, C.G. *The Practice of Medicinal Chemistry, 3rd. Edition*. 2008. ISBN 978-0-12-374194-3.

Beneš, L., Farsa, O. *Farmaceutická chemie. (Farmakochemie). Úvod do studia chemických léčiv.. VFU Brno*, 2005. ISBN 80-7305-516-3.

Kubinyi H., Müller G. *Chemogenomics in Drug Discovery: A Medicinal Chemistry Perspective*. 2004. ISBN 9783527603947.

Hartl, J., Palát, K. *Farmaceutická chemie I.. Karolinum, Praha*, 1998. ISBN 80-7184-619-8.

Kučař M., Rejholec V. *Využití kvantitativních vztahů mezi strukturou a biologickou aktivitou. Academia, Praha*, 1987.

3 Personální zabezpečení

Personální údaje zahrnují a) členy oborové rady a oborových komisí a b) školitele, kteří v daném programu vedli disertační práci v posledních 8 letech nebo potencionální školitele studijního programu.

K osobám jsou uvedeny údaje o zkušenostech s vedením kvalifikačních prací na MU od roku 2000 a to ve formě počet aktuálně vedených prací / celkový počet vedených a úspěšně obhájených prací.

PharmDr. Tünde Ambrus, Ph.D.

Školitel

Bakalářské práce: 0 / 0

Diplomové práce: 3 / 13

Disertační práce: 1 / 1

Kvalifikační práce mimo MU:

Diplomové práce: 25, Rigorózní práce: 20

prof. PharmDr. Petr Babula, Ph.D.

Školitel

Interní člen (Doctoral Board, viz 3.1)

Bakalářské práce: 1 / 1

Diplomové práce: 3 / 6

Disertační práce: 4 / 8

Kvalifikační práce mimo MU:

Diplomové práce - 53

doc. Ing. Pavel Bobál, CSc.

Školitel

Interní člen (Doctoral Board, viz 3.1)

Bakalářské práce: 0 / 0

Diplomové práce: 4 / 7

Disertační práce: 4 / 4

Kvalifikační práce mimo MU:

Bakalářské práce: 0; Diplomové práce: 35 (obhájené: 32), 30 - VFU, 1 - University of Neuchâtel, Švýcarsko, 1 - Komenského Univerzita, Bratislava, Slovensko; Rigorózní práce: 4 (obhájené: 4); Disertační práce: 6 (obhájené: 1).

Mgr. Marie Brázdová, Ph.D.

Školitel

Bakalářské práce: 0 / 9

Diplomové práce: 6 / 19

Disertační práce: 0 / 4

Kvalifikační práce mimo MU:

Bakalářské práce: 0, Diplomové práce: 20, Disertační práce: 0

prof. Ing. Lucie Cahlíková, PhD.

Externí člen (Doctoral Board, viz 3.1)

Externista: Univerzita Karlova, Farmaceutická fakulta v Hradci Králové, Katedra farmaceutické botaniky, vedoucí katedry, profesor

Bakalářské práce: 0 / 0

Diplomové práce: 0 / 0

Disertační práce: 0 / 0

Kvalifikační práce mimo MU:

Diplomové práce: 40, Disertační práce: 11

prof. RNDr. Jozef Csöllei, CSc.

Školitel

Interní člen (Doctoral Board, viz 3.1)

Bakalářské práce: 0 / 0
Diplomové práce: 3 / 7
Disertační práce: 2 / 3

Kvalifikační práce mimo MU:
Diplomové práce: 1994 - 2020 více jak 30, Doktorské disertační práce: 5 studentů úspěšně ukončilo, školitel specialista 4 obhájených prací.

doc. PharmDr. Martina Čečková, Ph.D.

Externí člen (Doctoral Board, viz 3.1)

Externista: Univerzita Karlova, Farmaceutická fakulta v Hradci Králové, Katedra farmakologie a toxikologie, docent

Bakalářské práce: 0 / 0
Diplomové práce: 0 / 0
Disertační práce: 0 / 0

Kvalifikační práce mimo MU:
Diplomové práce: 31, Disertační práce: 3

prof. PharmDr. Martin Doležal, Ph.D.

Externí člen (Doctoral Board, viz 3.1)

Externista: Univerzita Karlova, Farmaceutická fakulta v Hradci Králové, Katedra farmaceutické chemie a farmaceutické analýzy, vedoucí katedry, profesor

Bakalářské práce: 0 / 0
Diplomové práce: 0 / 0
Disertační práce: 0 / 0

Kvalifikační práce mimo MU:
Bakalářské práce: 2, Diplomové práce: 64, Disertační práce: 11

PharmDr. Jan Elbl, Ph.D.

Školitel

Bakalářské práce: 0 / 0
Diplomové práce: 5 / 10
Disertační práce: 1 / 1

Kvalifikační práce mimo MU:
Diplomové práce: 7

doc. PharmDr. Oldřich Farsa, Ph.D.

Školitel

Bakalářské práce: 0 / 0
Diplomové práce: 4 / 7
Disertační práce: 3 / 3

Kvalifikační práce mimo MU:
Diplomové práce: 31 (2002 - 2020) úspěšně obhájených na FaF VFU Brno, Dizertační práce: 5, úspěšně obhájená 1 na FaF VFU Brno, Rigorózní práce: 11 úspěšně obhájených na FaF VFU Brno (2001 - 2020)

doc. PharmDr. Aleš Franc, Ph.D.

Školitel

Bakalářské práce: 0 / 1
Diplomové práce: 2 / 11
Disertační práce: 2 / 5

Kvalifikační práce mimo MU:
Diplomové práce (Mgr.): 27 (VFU Brno), Absolventské práce (Dis.): 3 (VOŠMT Kolín)

doc. PharmDr. Jan Gajdziok, Ph.D.

Školitel

Bakalářské práce: 0 / 0
Diplomové práce: 3 / 14
Disertační práce: 2 / 4

Kvalifikační práce mimo MU:
Diplomové práce: 40, Rigorózní práce: 20, Disertační práce: 2

PharmDr. Tomáš Goněc, Ph.D.

Školitel

Bakalářské práce: 0 / 0
Diplomové práce: 4 / 15
Disertační práce: 1 / 1

Kvalifikační práce mimo MU:
FaF VFU Brno:, Diplomové práce: 30 (vedoucí), Rigorózní práce: 12 (konzultant), Diserteční práce: 1 (školitel specialista)

MVDr. Jana Hložková, Ph.D.

Školitel

Bakalářské práce: 0 / 0
Diplomové práce: 5 / 14
Disertační práce: 1 / 1

PharmDr. Bc. Kateřina Horská, Ph.D.

Školitel

Bakalářské práce: 0 / 0
Diplomové práce: 6 / 14
Disertační práce: 1 / 1

Kvalifikační práce mimo MU:
Diplomové práce: 8

doc. RNDr. Jan Hošek, Ph.D.

Školitel

Interní člen (Doctoral Board, viz 3.1)

Bakalářské práce: 0 / 0
Diplomové práce: 2 / 5
Disertační práce: 2 / 4

Kvalifikační práce mimo MU:
Diplomové práce: 20, Disertační práce: 1

doc. PharmDr. Jan Juřica, Ph.D.

Školitel

Interní člen (Doctoral Board, viz 3.1)

Bakalářské práce: 0 / 7
Diplomové práce: 3 / 15
Disertační práce: 4 / 7

PharmDr. Tereza Kauerová, Ph.D.

Školitel

Bakalářské práce: 0 / 0
Diplomové práce: 6 / 11
Disertační práce: 1 / 1

Kvalifikační práce mimo MU:
Diplomové práce: 2

doc. RNDr. Jozef Kolář, CSc.

Školitel
Interní člen (Doctoral Board, viz 3.1)

Bakalářské práce: 0 / 0
Diplomové práce: 3 / 6
Disertační práce: 1 / 2

Kvalifikační práce mimo MU:
Diplomové práce: 115, Rigorózní práce: 144, Disertační práce: 11

doc. PharmDr. Peter Kollár, Ph.D.

Školitel
Interní člen (Doctoral Board, viz 3.1)

Bakalářské práce: 0 / 0
Diplomové práce: 1 / 6
Disertační práce: 1 / 2

Kvalifikační práce mimo MU:
Diplomové práce (obhájené): 56, Rigorózní práce (obhájené): 36, Disertační práce (obhájené): 3

PharmDr. Bc. Hana Kotlová, Ph.D.

Školitel

Bakalářské práce: 0 / 0
Diplomové práce: 5 / 17
Disertační práce: 1 / 2

Kvalifikační práce mimo MU:
Diplomové práce - 53 - FaF VFU Brno, Disertační práce - 1 - FaF VFU Brno, Rigorózní práce - 12 - FaF VFU Brno

doc. PharmDr. Renata Kubínová, Ph.D.

Školitel
Interní člen (Doctoral Board, viz 3.1)

Bakalářské práce: 0 / 1
Diplomové práce: 3 / 13
Disertační práce: 0 / 2

Kvalifikační práce mimo MU:
Disertační práce: 2, Diplomové práce: 47, Rigorózní práce: 6

doc. PharmDr. Kateřina Kubová, Ph.D.

Školitel
Interní člen (Doctoral Board, viz 3.1)

Bakalářské práce: 0 / 0
Diplomové práce: 4 / 15
Disertační práce: 4 / 6

Kvalifikační práce mimo MU:
Diplomové práce: 39, Rigorózní práce: 30, Disertační práce: 3, VFU Brno

Mgr. Michaela Kuchynka, Ph.D.

Školitel

Bakalářské práce: 0 / 3
Diplomové práce: 5 / 7
Disertační práce: 1 / 1

doc. PharmDr. Ruta Masteiková, CSc.

Školitel

Bakalářské práce: 0 / 0
Diplomové práce: 4 / 14
Disertační práce: 1 / 2

Kvalifikační práce mimo MU:

Diplomové práce: přes 60 obhájených diplomových prací na VFU, Rigorózní práce: cca 20 obhájených rigorózních prací na VFU, Disertační práce: 4 obhájené disertační práce na VFU

PharmDr. Bc. Dana Mazánková, Ph.D.

Školitel

Bakalářské práce: 0 / 0
Diplomové práce: 5 / 28
Disertační práce: 1 / 1

Kvalifikační práce mimo MU:

Diplomové práce (VFU Brno): 55, Rigorózní práce (VFU Brno): 50, Disertační práce (VFU Brno): 2

doc. Mgr. Jan Muselík, Ph.D.

Školitel

Bakalářské práce: 0 / 0
Diplomové práce: 3 / 11
Disertační práce: 1 / 2

Kvalifikační práce mimo MU:

Diplomové práce: 23, Rigorózní práce: 13, Disertační práce: 3

doc. PharmDr. Ing. Radka Opatřilová, Ph.D., MBA

Školitel

Bakalářské práce: 0 / 0
Diplomové práce: 6 / 9
Disertační práce: 1 / 1

Kvalifikační práce mimo MU:

Diplomové práce - 37, Disertační práce — 5, Rigorózní práce - 21

doc. RNDr. Bc. Jiří Pazourek, Ph.D.

Školitel

Interní člen (Doctoral Board, viz 3.1)

Bakalářské práce: 0 / 3
Diplomové práce: 9 / 30
Disertační práce: 1 / 3

MVDr. Peter Scheer, Ph.D.

Školitel

Bakalářské práce: 0 / 0
Diplomové práce: 5 / 9
Disertační práce: 1 / 1

Kvalifikační práce mimo MU:

Diplomové práce - FVL VFU Brno 6

doc. MVDr. Pavel Suchý, Ph.D.

Školitel

Bakalářské práce: 0 / 0
Diplomové práce: 5 / 15

Disertační práce: 1 / 2

Kvalifikační práce mimo MU:

Bakalářské práce: 2, Diplomové práce: 43, Disertační práce: 5

doc. PharmDr. Zdeňka Šklubalová, Ph.D.

Externí člen (Doctoral Board, viz 3.1)

Externista: Univerzita Karlova, Farmaceutická fakulta v Hradci Králové, Katedra farmaceutické technologie, Vedoucí Katedry farmaceutické technologie

Bakalářské práce: 0 / 0

Diplomové práce: 0 / 0

Disertační práce: 0 / 0

Kvalifikační práce mimo MU:

Diplomové práce: 74, Disertační práce: 4

prof. PharmDr. Karel Šmejkal, Ph.D.

Školitel

Předseda (Doctoral Board, viz 3.1)

Bakalářské práce: 0 / 0

Diplomové práce: 5 / 17

Disertační práce: 7 / 9

Kvalifikační práce mimo MU:

Diplomové práce: 96, Disertační práce: 11

doc. PharmDr. Martin Štěřba, Ph.D.

Externí člen (Doctoral Board, viz 3.1)

Externista: Univerzita Karlova, Lékařská fakulta v Hradci Králové, Ústav farmakologie, docent

Bakalářské práce: 0 / 0

Diplomové práce: 0 / 0

Disertační práce: 0 / 0

Kvalifikační práce mimo MU:

Disertační práce: 3

PharmDr. Jakub Tremel, Ph.D.

Školitel

Bakalářské práce: 0 / 0

Diplomové práce: 4 / 18

Disertační práce: 1 / 1

Kvalifikační práce mimo MU:

Diplomové práce (VFU): 15, Disertační práce - školitel specialista: 1 (aktivní studium)

Mgr. Ing. Jiří Václavík, Ph.D.

Školitel

Bakalářské práce: 1 / 1

Diplomové práce: 3 / 12

Disertační práce: 1 / 1

Kvalifikační práce mimo MU:

Diplomové práce: 5

prof. PharmDr. Mgr. David Vetchý, Ph.D.

Školitel

Interní člen (Doctoral Board, viz 3.1)

Bakalářské práce: 0 / 0
 Diplomové práce: 1 / 5
 Disertační práce: 2 / 4

Kvalifikační práce mimo MU:
 Diplomové práce: 42, Disertační práce: 3

PharmDr. Jakub Vysloužil, Ph.D.

Školitel

Bakalářské práce: 0 / 0
 Diplomové práce: 8 / 22
 Disertační práce: 1 / 1

Kvalifikační práce mimo MU:
 FaF VFU, Diplomové práce: 19, Rigorozní práce: 5

3.1 Doctoral Board [D-FARMA]

Předseda

prof. PharmDr. Karel Šmejkal, Ph.D.

Interní členové

prof. PharmDr. Petr Babula, Ph.D.

doc. Ing. Pavel Bobál, CSc.

prof. RNDr. Jozef Csöllei, CSc.

doc. RNDr. Jan Hošek, Ph.D.

doc. PharmDr. Jan Juřica, Ph.D.

doc. RNDr. Jozef Kolář, CSc.

doc. PharmDr. Peter Kollár, Ph.D.

doc. PharmDr. Renata Kubínová, Ph.D.

doc. PharmDr. Kateřina Kubová, Ph.D.

doc. RNDr. Bc. Jiří Pazourek, Ph.D.

prof. PharmDr. Mgr. David Vetchý, Ph.D.

Externí členové

prof. Ing. Lucie Cahlíková, PhD. (Univerzita Karlova, Farmaceutická fakulta v Hradci Králové — Katedra farmaceutické botaniky — vedoucí katedry, profesor)

doc. PharmDr. Martina Čečková, PhD. (Univerzita Karlova, Farmaceutická fakulta v Hradci Králové — Katedra farmakologie a toxikologie — docent)

prof. PharmDr. Martin Doležal, Ph.D. (Univerzita Karlova, Farmaceutická fakulta v Hradci Králové — Katedra farmaceutické chemie a farmaceutické analýzy — vedoucí katedry, profesor)

doc. PharmDr. Zdeňka Šklubalová, Ph.D. (Univerzita Karlova, Farmaceutická fakulta v Hradci Králové — Katedra farmaceutické technologie — Vedoucí Katedry farmaceutické technologie)

doc. PharmDr. Martin Štěřba, Ph.D. (Univerzita Karlova, Lékařská fakulta v Hradci Králové — Ústav farmakologie — docent)

3.2 Struktura osob dle věku

Pracovní pozice	Do 35 let	36 — 55 let	56 — 70 let	71 a více let
Profesor	0	4	1	1
Docent	0	12	5	1
Odborný asistent	3	11	0	0

3.3 Počet osob ze zahraničí

	Počet
Celkový počet pedagogických pracovníků	38
Z toho ze Slovenské republiky	3
Z toho z ostatních zemí	2
Celkový počet pracovníků ze zahraničí	5

3.4 Publikační činnost

V kapitole je autorem vybráno jeho až pět nejvýznamnějších publikací za posledních pět let.

PharmDr. Tünde Ambrus, Ph.D.

Attitudes and behaviors regarding online pharmacies in the aftermath of COVID-19 pandemic: At the tipping point towards the new normal [Typ výsledku: Jimp]

FITTLER, Andras, Tünde AMBRUS, Anna SEREFKO, Lenka SMEJKALOVÁ, Anna KIJEWSKA, Aleksandra SZOPA a Matyas KAPLAR. Attitudes and behaviors regarding online pharmacies in the aftermath of COVID-19 pandemic: At the tipping point towards the new normal. *Frontiers in Pharmacology*. Lausanne: Frontiers Media S.A., 2022, roč. 13, December, s. 1-12. ISSN 1663-9812. Dostupné z: <https://dx.doi.org/10.3389/fphar.2022.1070473>.

ANALYSIS OF THE EFFECTIVENESS OF THE PHARMACY NETWORK [Typ výsledku: Jimp]

GREGA, Dominik, Tünde AMBRUS, A. MATEJOVIC, Martina ŠUTOROVÁ a J. KOLÁŘ. ANALYSIS OF THE EFFECTIVENESS OF THE PHARMACY NETWORK. *FARMACIA. BUCURESTI: SOC STIINTE FARMACEUTICE ROMANIA*, 2021, roč. 69, č. 4, s. 799-805. ISSN 0014-8237. Dostupné z: <https://dx.doi.org/10.31925/farmacia.2021.4.23>.

Ethnobotanical, historical and histological evaluation of Helleborus L. genetic resources used in veterinary and human ethnomedicine [Typ výsledku: Jimp]

BALAZS, V. L., R. FILEP, Tünde AMBRUS, M. KOCSIS, A. FARKAS, S. STRANCZINGER a N. PAPP. Ethnobotanical, historical and histological evaluation of Helleborus L. genetic resources used in veterinary and human ethnomedicine. *GENETIC RESOURCES AND CROP EVOLUTION*. DORDRECHT: SPRINGER, 2020, roč. 67, č. 3, s. 781-797. ISSN 0925-9864. Dostupné z: <https://dx.doi.org/10.1007/s10722-019-00876-5>.

Příspěvek k pojmu polypragmázie I. Etymologické poznámky a charakteristika [Typ výsledku: Jsc]

KOLÁŘ, Jozef, Tünde AMBRUS, Dominik GREGA a Lenka SMEJKALOVÁ. Příspěvek k pojmu polypragmázie I. Etymologické poznámky a charakteristika. *Česka a slovenska farmacie*. Praha: Česká lékařská společnost J. E. Purkyně, 2022, roč. 71, č. 6, s. 245-250. ISSN 1210-7816.

Role fyzických osob, kterým je poskytována zdravotní péče - terminologické poznámky [Typ výsledku: Jsc]

KOLÁŘ, Jozef a Tünde AMBRUS. Role fyzických osob, kterým je poskytována zdravotní péče - terminologické poznámky. *Česka a slovenska farmacie*. Praha: Česká lékařská společnost J.E. Purkyně, 2022, roč. 71, č. 1, s. 13-19. ISSN 1210-7816. Dostupné z: <https://dx.doi.org/10.5817/csf2022-1-13>.

prof. PharmDr. Petr Babula, Ph.D.

Allantoin overaccumulation enhances production of metabolites under excess of metals but is not tightly regulated by nitric oxide [Typ výsledku: Jimp]

DRESLER, Slawomir, Jozef KOVACIK, Ireneusz SOWA, Magdalena WOJCIAK, Maciej STRZEMSKI, Anna RYSIAK, Petr BABULA a Christopher D. TODD. Allantoin overaccumulation enhances production of metabolites under excess of metals but is not tightly regulated by nitric oxide. *Journal of Hazardous Materials*. Amsterdam: Elsevier Science BV., 2022, roč. 436, August 2022, s. 1-10. ISSN 0304-3894. Dostupné z: <https://dx.doi.org/10.1016/j.jhazmat.2022.129138>.

Nitrogen modulates strontium uptake and toxicity in Hypericum perforatum plants [Typ výsledku: Jimp]

KOVACIK, Jozef, Slawomir DRESLER, Maciej STRZEMSKI, Ireneusz SOWA, Petr BABULA a Magdalena WOJCIAK-KOSIOR. Nitrogen modulates strontium uptake and toxicity in Hypericum perforatum plants. *Journal of Hazardous Materials*. Amsterdam: Elsevier Science BV., 2022, roč. 425, March 2022, s. 1-10. ISSN 0304-3894. Dostupné z: <https://dx.doi.org/10.1016/j.jhazmat.2021.127894>.

TET protein inhibitors: Potential and limitations [Typ výsledku: Jimp]

KAPLÁNEK, Robert, Zdeněk KEJÍK, Jan HAJDUCH, Kateřina VESELÁ, Kateřina KUČNIROVÁ, Markéta SKALIČKOVÁ, Anna VENHAUEROVÁ, Božena HOSNEDLOVÁ, Róbert HROMÁDKA, Petr DYTRYCH, Petr NOVOTNÝ, Nikita ABRAMENKO, Veronika ANTONYOVÁ, David HOSKOVEC, Petr BABULA, Michal MASARIK, Pavel MARTÁSEK a Milan JAKUBEK. TET protein inhibitors: Potential and limitations. *Biomedicine & Pharmacotherapy*. ISSY-LESMOULINEAUX: ELSEVIER, 2023, roč. 166, October 2023, s. 1-15. ISSN 0753-3322. Dostupné z: <https://dx.doi.org/10.1016/j.biopha.2023.113695>.

Iron Complexes of Flavonoids-Antioxidant Capacity and Beyond [Typ výsledku: Jimp]

KEJÍK, Zdenek, Robert KAPLÁNEK, Michal MASARIK, Petr BABULA, Adam MATKOWSKI, Petr FILIPENSKÝ, Kateřina VESELÁ, Jakub GBUREK, David SÝKORA, Pavel MARTÁSEK a Milan JAKUBEK. Iron Complexes of Flavonoids-Antioxidant Capacity and Beyond. *International Journal of Molecular Sciences*. Basel: MDPI, 2021, roč. 22, č. 2, s. 1-20. ISSN 1422-0067. Dostupné z: <https://dx.doi.org/10.3390/ijms22020646>.

Calcium signaling affects migration and proliferation differently in individual cancer cells due to nifedipine treatment [Typ výsledku: Jimp]

CHOVANCOVÁ, Barbora, Veronika LISKOVÁ, Svetlana MIKLIKOVA, Sona HUDECOVA, Petr BABULA, Adela PENE-SOVA, Angelika SEVCIKOVA, Erika DURINIKOVA, Marie NOVÁKOVÁ, Miroslava MATUSKOVA a Olga KRIŽANOVÁ. Calcium signaling affects migration and proliferation differently in individual cancer cells due to nifedipine treatment. *Biochemical Pharmacology*. Oxford: Elsevier, 2020, roč. 171, January 2020, s. 1-15. ISSN 0006-2952. Dostupné z: <https://dx.doi.org/10.1016/j.bcp.2019.113695>.

doc. Ing. Pavel Bobál, CSc.

Parallel in vitro and in silico investigations into anti-inflammatory effects of non-prenylated stilbenoids [Typ výsledku: Jimp]

LELÁKOVÁ, Veronika, Karel ŠMEJKAL, K. JAKUBCZYK, O. VESELY, P. LANDA, Jiří VÁCLAVÍK, Pavel BOBÁL, Hana PÍŽOVÁ, V. TEMML, T. STEINACHER, D. SCHUSTER, S. GRANICA, Z. HANAKOVA a J. HOSEK. Parallel in vitro and in silico investigations into anti-inflammatory effects of non-prenylated stilbenoids. *Food Chemistry*. Oxford, UK: Elsevier Science, 2019, roč. 285, s. 431-440. ISSN 0308-8146. Dostupné z: <https://dx.doi.org/10.1016/j.foodchem.2019.01.128>.

Synthesis and application of BODIPY-based fluorescent labeling tag for oligosaccharide and N-linked glycan analysis by high-performance liquid chromatography with fluorescence detection [Typ výsledku: Jimp]

SMOLKOVÁ, Denisa, Michal GREGUŠ, Hubert VESELY, Richard CMELIK, Hana PÍŽOVÁ, Pavel BOBÁL a Jana LAVICKA. Synthesis and application of BODIPY-based fluorescent labeling tag for oligosaccharide and N-linked glycan

analysis by high-performance liquid chromatography with fluorescence detection. *Analytica Chimica Acta*. Amsterdam: Elsevier Science publishers, 2024, roč. 1285, č. 342032, s. 1-8. ISSN 0003-2670. Dostupné z: <https://dx.doi.org/10.1016/j.aca.2024.1285.342032>.

Common Post-translational Modifications (PTMs) of Proteins: Analysis by Up-to-Date Analytical Techniques with an Emphasis on Barley [Typ výsledku: Jimp]

BOBALOVA, Janette, Dana STROUHALOVA a Pavel BOBÁL. Common Post-translational Modifications (PTMs) of Proteins: Analysis by Up-to-Date Analytical Techniques with an Emphasis on Barley. *Journal of Agricultural and Food Chemistry*. WASHINGTON: AMER CHEMICAL SOC, 2023, roč. 71, č. 41, s. 14825-14837. ISSN 0021-8561. Dostupné z: <https://dx.doi.org/10.1021/acs.jafc.3c00886>.

Asymmetric Organocatalyzed Friedel-Crafts Reaction of Trihaloacetaldehydes and Phenols [Typ výsledku: Jimp]

ŠVESTKA, David, Jan OTEVŘEL a Pavel BOBÁL. Asymmetric Organocatalyzed Friedel-Crafts Reaction of Trihaloacetaldehydes and Phenols. *Advanced Synthesis and Catalysis*. Weinheim: Wiley-VCH GmbH., 2022, roč. 364, č. 13, s. 2174-2183. ISSN 1615-4150. Dostupné z: <https://dx.doi.org/10.1002/adsc.202200180>.

Asymmetric Organocatalyzed Transfer Hydroxymethylation of Isoindolinones Using Formaldehyde Surrogates [Typ výsledku: Jimp]

ŠVESTKA, David, Pavel BOBÁL, Jan OTEVŘEL a Mario WASER. Asymmetric Organocatalyzed Transfer Hydroxymethylation of Isoindolinones Using Formaldehyde Surrogates. *Organic Letters*. Spojené státy: American Chemical Society, 2024, roč. 12, č. 26, s. 2505-2510. ISSN 1523-7060. Dostupné z: <https://dx.doi.org/10.1021/acs.orglett.4c00818>.

Mgr. Marie Brázdová, Ph.D.

Novel 1,3,5-Triazinyl Aminobenzenesulfonamides Incorporating Aminoalcohol, Aminochalcone and Aminostilbene Structural Motifs as Potent Anti-VRE Agents, and Carbonic Anhydrases I, II, VII, IX, and XII Inhibitors [Typ výsledku: Jimp]

HAVRÁNKOVÁ, Eva, V. GARAJ, S. MASCARETTI, A. ANGELI, Zuzana SOLDÁNOVÁ, M. KEMKA, J. MOTYČKA, Marie BRÁZDOVÁ, Jozef CSÖLLEI, J. JAMPÍLEK a C.T. SUPURAN. Novel 1,3,5-Triazinyl Aminobenzenesulfonamides Incorporating Aminoalcohol, Aminochalcone and Aminostilbene Structural Motifs as Potent Anti-VRE Agents, and Carbonic Anhydrases I, II, VII, IX, and XII Inhibitors. *International Journal of Molecular Sciences*. Basel: Multidisciplinary Digital Publishing Institute, 2022, roč. 23, č. 1, s. 1-45. ISSN 1422-0067. Dostupné z: <https://dx.doi.org/10.3390/ijms23010231>.

p53 Binds Preferentially to Non-B DNA Structures Formed by the Pyrimidine-Rich Strands of GAA center dot TTC Trinucleotide Repeats Associated with Friedreich's Ataxia [Typ výsledku: Jimp]

HELMA, R., P. BAZANTOVA, M. PETR, M. ADAMIK, D. RENCUIK, V. TICHY, A. PASTUCHOVA, Z. SOLDANOVA, P. PECINKA, R.P. BOWATER, Miroslav FOJTA a M. BRAZDOVA. p53 Binds Preferentially to Non-B DNA Structures Formed by the Pyrimidine-Rich Strands of GAA center dot TTC Trinucleotide Repeats Associated with Friedreich's Ataxia. *Molecules*. BASEL: Mayer und Muller, 2019, roč. 24, č. 11, s. 2078-2091. ISSN 1420-3049. Dostupné z: <https://dx.doi.org/10.3390/molecules24112078>.

Cathodic Voltammetric Determination of a Nitro Substituted 1-Hydroxynaphthalene-2-carboxanilide in Dimethyl Sulfoxide in Electrochemical Microcell [Typ výsledku: D]

GAJDAR, J, Tomáš GONĚC, J JAMPÍLEK, Marie BRÁZDOVÁ, Z BÁBKOVÁ, Miroslav FOJTA, Jiří BAREK a J FISCHER. Cathodic Voltammetric Determination of a Nitro Substituted 1-Hydroxynaphthalene-2-carboxanilide in Dimethyl Sulfoxide in Electrochemical Microcell. In Navratil, T Fojta, M Schwarzova, K. PROCEEDINGS OF INTERNATIONAL CONFERENCE MODERN ELECTROCHEMICAL METHODS XXXIX. USTI NAD LABEM: LENKA SRSENOVA-BEST SERVIS, 2019, s. 70-73.

Interfacial properties of p53-DNA complexes containing various recognition elements [Typ výsledku: J]

BRÁZDOVÁ, Marie. Interfacial properties of p53-DNA complexes containing various recognition elements. *JOURNAL OF ELECTROANALYTICAL CHEMISTRY*. 2019. Dostupné z: <https://dx.doi.org/10.1016/j.jelechem.2019.113300>.

Human ARMC6 binds in vitro to both cancer genes and telomeric RNA, favoring G-quadruplex structure recognition.

Adámik M, Soldánová Z, Drotárová M, Brečková K, Petr M, Helma R, Jenner LP, Vorlíčková M, Sýkorová E, Brázdová M.

Biochim Biophys Acta Gene Regul Mech. 2024 Sep;1867(3):195050. doi: 10.1016/j.bbagr.2024.195050. Epub 2024 Jul 17.

PMID: 39029558

prof. Ing. Lucie Cahlíková, PhD.

VRABEC, R., BLUNDEN, G., CAHLÍKOVÁ, L.: Natural alkaloids as multi-target compounds towards factors implicated in Alzheimer's disease. *Int. J. Mol. Sci.* 24, 4399 (2023). <https://doi.org/10.3390/ijms24054399>

RITOMSKÁ, A., KOUTOVÁ, D., KŘOUSTKOVÁ, J., KRÁLOVEC, K., MUTHNÁ, D., KUNEŠ, J., NOVÁKOVÁ, L., HAVELK, R., CAHLÍKOVÁ, L.: Design of semisynthetic derivatives of the Amaryllidaceae alkaloid ambelline and exploration of their in vitro cytotoxic activities. *Saudi Pharm. J.* 31, 101684 (2023). <https://doi.org/10.1016/j.jsps.2023.06.017>

PIDANY, F., KROUSTKOVA, J., AL MAMUN, A., SUCHANKOVA, D., BRAZZOLOTTO, X., NACHON, F., CHANTEGREIL, F., DOLEZAL, R., PULKRABKOVÁ, L., MUCKOVA, L., HRABINOVA, M., FINGER, V., KUFA, M., SOUKUP, O., JUN, D., JENCO, J., KUNES, J., NOVAKOVA, L., KORABECNY, J., CAHLIKOVA, L.: Highly selective butyrylcholinesterase inhibitors related to Amaryllidaceae alkaloids - design, synthesis, and biological evaluation. *Eur. J. Med. Chem.* 252, 115301 (2023). <https://doi.org/10.1016/j.ejmech.2023.115301>

KOUTOVÁ, D., MAAFI, N., MUTHNÁ, D., KRÁLOVEC, K., KROUSTKOVA, J., PIDANY, F., TIMBILLA, A., CERMAKOVA, E., CAHLIKOVA, L., REZACOVA, M., HAVELEK, R.: Antiproliferative activity and apoptosis-inducing mechanism of Amaryllidaceae alkaloid montanine on A549 and MOLT-4 human cancer cells. *Biomed. Pharmacother.* 166, 115295 (2023). <https://doi.org/10.1016/j.biopha.2023.115295>

KŘOUSTKOVÁ, J., RITOMSKÁ, A., AI MAMUN, A., HULCOVÁ, D., OPLETAL, L., KUNEŠ, J., CAHLÍKOVÁ, L., BUCAR, F.: Structural analysis of unusual alkaloids isolated from *Narcissus pseudonarcissus* cv. Carlton. *Phytochemistry* 204, 113439 (2022). DOI: <https://doi.org/10.1016/j.phytochem.2022.113439>.

prof. RNDr. Jozef Csöllei, CSc.

Novel 1,3,5-Triazinyl Aminobenzenesulfonamides Incorporating Aminoalcohol, Aminochalcone and Aminostilbene Structural Motifs as Potent Anti-VRE Agents, and Carbonic Anhydrases I, II, VII, IX, and XII Inhibitors [Typ výsledku: Jimp]

HAVRÁNKOVÁ, Eva, V. GARAJ, S. MASCARETTI, A. ANGELI, Zuzana SOLDÁNOVÁ, M. KEMKA, J. MOTYČKA, Marie BRÁZDOVÁ, Jozef CSÖLLEI, J. JAMPÍLEK a C.T. SUPURAN. Novel 1,3,5-Triazinyl Aminobenzenesulfonamides Incorporating Aminoalcohol, Aminochalcone and Aminostilbene Structural Motifs as Potent Anti-VRE Agents, and Carbonic Anhydrases I, II, VII, IX, and XII Inhibitors. *International Journal of Molecular Sciences*. Basel: Multidisciplinary Digital Publishing Institute, 2022, roč. 23, č. 1, s. 1-45. ISSN 1422-0067. Dostupné z: <https://dx.doi.org/10.3390/ijms23010231>.

Dibasic Derivatives of Phenylcarbamic Acid as Prospective Antibacterial Agents Interacting with Cytoplasmic Membrane [Typ výsledku: Jimp]

POSPISILOVÁ, S., Ivan MALÍK, K. BEZOUSKOVA, Tereza KAUEROVÁ, Peter KOLLÁR, Jozef CSÖLLEI, M. ORAVEC, Alois ČÍŽEK a J. JAMPÍLEK. Dibasic Derivatives of Phenylcarbamic Acid as Prospective Antibacterial Agents Interacting with Cytoplasmic Membrane. *Antibiotics-Basel*. BASEL: MDPI, 2020, roč. 9, č. 2, s. 1-22. ISSN 2079-6382. Dostupné z: <https://dx.doi.org/10.3390/antibiotics9020064>.

Antioxidative Activity of 1,3,5-Triazine Analogues Incorporating Aminobenzene Sulfonamide, Aminoalcohol/Phenol, Piperazine, Chalcone, or Stilbene Motifs [Typ výsledku: Jimp]

HAVRÁNKOVÁ, Eva, Nikola ČALKOVSKÁ, Tereza PADRTOVÁ, Jozef CSÖLLEI, Radka OPATŘILOVÁ a Pavel PAZDERA. Antioxidative Activity of 1,3,5-Triazine Analogues Incorporating Aminobenzene Sulfonamide, Aminoalcohol/Phenol, Piperazine, Chalcone, or Stilbene Motifs. *Molecules*. Basel: MDPI, 2020, roč. 25, č. 8, s. 1-15. ISSN 1420-3049. Dostupné z: <https://dx.doi.org/10.3390/molecules25081787>.

Arylaminoopropanone Derivatives as Potential Cholinesterase Inhibitors: Synthesis, Docking Study and Biological Evaluation [Typ výsledku: Jimp]

HUDCOVÁ, Anna, Aleš KROUTIL, Renata KUBÍNOVÁ, A. D. GARRO, L. J. GUTIERREZ, D. ENRIZ, M. ORAVEC a Jozef CSÖLLEI. Arylaminoopropanone Derivatives as Potential Cholinesterase Inhibitors: Synthesis, Docking Study and Biological Evaluation. *Molecules*. 2020, roč. 25, č. 7, s. 1751-1767. ISSN 1420-3049. Dostupné z: <https://dx.doi.org/10.3390/molecules25071751>.

Indol-2-Carboxylic Acid Esters Containing N-Phenylpiperazine Moiety - Preparation and Cholinesterase-inhibiting Activity [Typ výsledku: Jimp]

PADRTOVÁ, Tereza, Pavlína MARVANOVÁ, Renata KUBÍNOVÁ, Jozef CSÖLLEI, Oldřich FARSA, Tomáš GONĚC, Klára ODEHNALOVÁ, Radka OPATŘILOVÁ, Jiří PAZOUREK, Alice SYCHROVÁ, Karel ŠMEJKAL a Petr MOKRÝ. Indol-2-Carboxylic Acid Esters Containing N-Phenylpiperazine Moiety - Preparation and Cholinesterase-inhibiting Activity. *Current organic synthesis*. Sharjah: Bentham Science Publ Ltd, 2020, roč. 17, č. 7, s. 576-587. ISSN 1570-1794. Dostupné z: <https://dx.doi.org/10.2174/1570179417666200619132218>.

doc. PharmDr. Martina Čečková, PhD.

Simona Sucha, Ales Sorf, Martin Svoren, Dimitrios Vagiannis, Fahda Ahmed, Benjamin Visek, Martina Ceckova. ABCB1 as a potential beneficial target of midostaurin in acute myeloid leukemia, *Biomedicine & Pharmacotherapy*, Volume 150, 2022, 112962, ISSN 0753-3322, <https://doi.org/10.1016/j.biopha.2022.112962>.

Ales Sorf, Dimitrios Vagiannis, Fahda Ahmed, Jakub Hofman, Martina Ceckova. Dabrafenib inhibits ABCG2 and cytochrome P450 isoenzymes; potential implications for combination anticancer therapy, *Toxicology and Applied Pharmacology*, Volume 434, 2022, 115797, ISSN 0041-008X, <https://doi.org/10.1016/j.taap.2021.115797>.

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Lenka Tupova, Birgit Hirschmugl, Simona Sucha, Veronika Pilarova, Virág Székely, Éva Bakos, Lucie Novakova, Csilla Özvegy-Laczka, Christian Wadsack, Martina Ceckova. Interplay of drug transporters P-glycoprotein (MDR1), MRP1, OATP1A2 and OATP1B3 in passage of maraviroc across human placenta, *Biomedicine & Pharmacotherapy*, Volume 129, 2020, 110506, ISSN 0753-3322, <https://doi.org/10.1016/j.biopha.2020.110506>.

Sorf, A.; Sucha, S.; Morell, A.; Novotna, E.; Staud, F.; Zavrelouva, A.; Visek, B.; Wsol, V.; Ceckova, M. Targeting Pharmacokinetic Drug Resistance in Acute Myeloid Leukemia Cells with CDK4/6 Inhibitors. *Cancers* 2020, 12, 1596. <https://doi.org/10.3390/cancers12061596>.

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BOUZ, G.; ŠLECHTA, P.; JAND' OUREK, O.; KONEČNÁ, K.; PATEROVÁ, P.; BÁRTA, P.; NOVÁK, M.; KUČERA, R.; DAL, N.-J. K.; FENAROLI, F.; ZEMANOVÁ, J.; FORBAK, M.; KORDULÁKOVÁ, J.; PAVLIŠ, O.; KUBÍČKOVÁ, P.; DOLEŽAL, M.; ZITKO, J. Hybridization Approach Toward Novel Antituberculars: Design, Synthesis, and Biological Evaluation of Compounds Combining Pyrazinamide and 4-Aminosalicylic Acid. *ACS Infect. Dis.*, 2023, vol. 9, no. 1, p. 79-96. [ISSN 2373-8227], doi: 10.1021/acscinfecdis.2c00433

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PharmDr. Jan Elbl, Ph.D.

Comparison of Flow and Compression Properties of Four Lactose-Based Co-Processed Excipients: Cellactose (R) 80, CombiLac (R), MicroceLac (R) 100, and StarLac (R) [Typ výsledku: Jimp]

DOMINIK, Martin, B. VRANIKOVA, P. SVACINOVA, Jan ELBL, Sylvie PAVLOKOVÁ, B. PRUDILOVA, Z. SKLUBALOVA a Aleš FRANČ. Comparison of Flow and Compression Properties of Four Lactose-Based Co-Processed Excipients: Cellactose (R) 80, CombiLac (R), MicroceLac (R) 100, and StarLac (R). *Pharmaceutics*. BASEL: MDPI, 2021, roč. 13, č. 9, s. 1-21. ISSN 1999-4923. Dostupné z: <https://dx.doi.org/10.3390/pharmaceutics13091486>.

3D printing of multilayered orodispersible films with in-process drying [Typ výsledku: Jimp]

ELBL, Jan, Jan GAJDZIOK a J. KOLARCZYK. 3D printing of multilayered orodispersible films with in-process drying. *International Journal of Pharmaceutics*. AMSTERDAM: ELSEVIER SCIENCE BV, 2020, roč. 575, č. 118883, s. 1-8. ISSN 0378-5173. Dostupné z: <https://dx.doi.org/10.1016/j.ijpharm.2019.118883>.

Effects of Various Drying Times on the Properties of 3D Printed Orodispersible Films [Typ výsledku: Jimp]

JANIGOVÁ, Natália, Jan ELBL, Sylvie PAVLOKOVÁ a Jan GAJDZIOK. Effects of Various Drying Times on the Properties of 3D Printed Orodispersible Films. *Pharmaceutics*. Basel: MDPI, 2022, roč. 14, č. 2, s. 1-12. ISSN 1999-4923. Dostupné z: <https://dx.doi.org/10.3390/pharmaceutics14020250>.

Development of 3D Printed Multi-Layered Orodispersible Films with Porous Structure Applicable as a Substrate for Inkjet Printing [Typ výsledku: Jimp]

ELBL, Jan, Martin VESELÝ, Dagmar BLAHÁČKOVÁ, Jaroslav ONDRUS, Pavel KULICH, Eliska MASKOVA, Josef MASEK a Jan GAJDZIOK. Development of 3D Printed Multi-Layered Orodispersible Films with Porous Structure Applicable as a Substrate for Inkjet Printing. *Pharmaceutics*. Basel: MDPI, 2023, roč. 15, č. 2, s. 1-15. ISSN 1999-4923. Dostupné z: <https://dx.doi.org/10.3390/pharmaceutics15020714>.

Preparation and Evaluation of a Dosage Form for Individualized Administration of Lyophilized Probiotics [Typ výsledku: Jimp]

FÜLÖPOVÁ, Nicole, Natalia CHOMOVA, Jan ELBL, Dagmar MUDRONOVA, Patrik SIVULIČ, Sylvie PAVLOKOVÁ a Aleš FRANČ. Preparation and Evaluation of a Dosage Form for Individualized Administration of Lyophilized Probiotics. *Pharmaceutics*. Basel: MDPI, 2023, roč. 15, č. 3, s. 1-19. ISSN 1999-4923. Dostupné z: <https://dx.doi.org/10.3390/pharmaceutics15030250>.

doc. PharmDr. Oldřich Farsa, Ph.D.

Aminopeptidase N Inhibitors as Pointers for Overcoming Antitumor Treatment Resistance [Typ výsledku: Jimp]

FARSA, Oldřich, Veronika BALLAYOVÁ, Radka ŽÁČKOVÁ, Peter KOLLÁR, Tereza KAUFEROVÁ a Peter ZUBÁČ. Aminopeptidase N Inhibitors as Pointers for Overcoming Antitumor Treatment Resistance. *International Journal of Molecular Sciences*. Basel: Multidisciplinary Digital Publishing Institute, 2022, roč. 23, č. 17, s. 1-15. ISSN 1422-0067. Dostupné z: <https://dx.doi.org/10.3390/ijms23179813>.

Protein and Small-Molecule Leucopoiesis and Thrombopoiesis Stimulators [Typ výsledku: Jimp]

FARSA, Oldřich a Peter ZUBÁČ. Protein and Small-Molecule Leucopoiesis and Thrombopoiesis Stimulators. *Mini-reviews in medicinal chemistry*. Sharjah: Betham Science Publ Ltd., 2021, roč. 21, č. 13, s. 1638-1645. ISSN 1389-5575. Dostupné z: <https://dx.doi.org/10.2174/1389557521999201230195926>.

Indol-2-Carboxylic Acid Esters Containing N-Phenylpiperazine Moiety - Preparation and Cholinesterase-inhibiting Activity [Typ výsledku: Jimp]

PADRTOVÁ, Tereza, Pavlína MARVANOVÁ, Renata KUBÍNOVÁ, Jozef CSÖLLEI, Oldřich FARSA, Tomáš GONĚC, Klára ODEHNALOVÁ, Radka OPATŘILOVÁ, Jiří PAZOUREK, Alice SYCHROVÁ, Karel ŠMEJKAL a Petr MOKRÝ. Indol-2-Carboxylic Acid Esters Containing N-Phenylpiperazine Moiety - Preparation and Cholinesterase-inhibiting Activity. *Current organic synthesis*. Sharjah: Bentham Science Publ Ltd, 2020, roč. 17, č. 7, s. 576-587. ISSN 1570-1794. Dostupné z: <https://dx.doi.org/10.2174/1570179417666200619132218>.

Erythropoietins in Therapy from the Point of View of a Medicinal Chemist [Typ výsledku: Jimp]

FARSA, Oldřich a Peter ZUBÁČ. Erythropoietins in Therapy from the Point of View of a Medicinal Chemist. *CHEMICKÉ LISTY*. Praha: Česká společnost chemická, 2019, roč. 113, č. 9, s. 540-544. ISSN 0009-2770.

Aminopeptidase N as a potential drug target [Typ výsledku: Jost]

FARSA, Oldřich, Veronika BALLAYOVÁ, Radka ŽÁČKOVÁ a Peter ZUBÁČ. Aminopeptidase N as a potential drug target. *European Pharmaceutical Journal*. Sciendo, 2023, roč. 70, s2, s. .. AoP,1 “-, 2 “, 2 s. ISSN 2453-6725. Dostupné z: <https://dx.doi.org/10.2478/afpuc-2024-0002>.

doc. PharmDr. Aleš Franc, Ph.D.**Do foodborne polyethylene microparticles affect the health of rainbow trout (*Oncorhynchus mykiss*)? [Typ výsledku: Jimp]**

HODKOVICOVA, N., A. HOLLEROVA, H. CALOUDOVA, J. BLAHOVA, Aleš FRANC, Michaela GARAJOVÁ, J. LENZ, F. TICHY, M. FALDYNA, P. KULICH, J. MARES, R. MACHAT, V. ENEVOVA a Z. SVOBODOVA. Do foodborne polyethylene microparticles affect the health of rainbow trout (*Oncorhynchus mykiss*)? *Science of the Total Environment*. Amsterdam: Elsevier Science, 2021, roč. 793, č. 148490, s. 1-14. ISSN 0048-9697. Dostupné z: <https://dx.doi.org/10.1016/j.scitotenv.2021.148490>.

The biological activity of the organic UV filter ethylhexyl methoxycinnamate in rainbow trout (*Oncorhynchus mykiss*) [Typ výsledku: Jimp]

CAHOVA, Jana, Jana BLAHOVA, Petr MARSALEK, Veronika DOUBKOVA, Aleš FRANC, Michaela GARAJOVÁ, Frantisek TICHY, Jan MARES a Zdenka SVOBODOVA. The biological activity of the organic UV filter ethylhexyl methoxycinnamate in rainbow trout (*Oncorhynchus mykiss*). *Science of the Total Environment*. Amsterdam: Elsevier Science, 2021, roč. 774, č. 145570, s. 1-8. ISSN 0048-9697. Dostupné z: <https://dx.doi.org/10.1016/j.scitotenv.2021.145570>.

Non-steroidal anti-inflammatory drugs caused an outbreak of inflammation and oxidative stress with changes in the gut microbiota in rainbow trout (*Oncorhynchus mykiss*) [Typ výsledku: Jimp]

HODKOVICOVA, N., A. HOLLEROVA, J. BLAHOVA, P. MIKULA, M. CRHANOVA, D. KARASOVA, Aleš FRANC, Sylvie PAVLOKOVÁ, J. MARES, E. POSTULKOVA, F. TICHY, P. MARSALEK, J. LANIKOVA, M. FALDYNA a Z. SVOBODOVA. Non-steroidal anti-inflammatory drugs caused an outbreak of inflammation and oxidative stress with changes in the gut microbiota in rainbow trout (*Oncorhynchus mykiss*). *Science of the Total Environment*. Amsterdam: Elsevier, 2022, roč. 849, November, s. 1-16. ISSN 0048-9697. Dostupné z: <https://dx.doi.org/10.1016/j.scitotenv.2022.157921>.

Polystyrene microparticles can affect the health status of freshwater fish-Threat of oral microplastics intake [Typ výsledku: Jimp]

HOLLEROVA, A., N. HODKOVICOVA, J. BLAHOVA, M. FALDYNA, Aleš FRANC, Sylvie PAVLOKOVÁ, F. TICHY, E. POSTULKOVA, J. MARES, D. MEDKOVA, M. KYLLAR a Z. SVOBODOVA. Polystyrene microparticles can affect the health status of freshwater fish-Threat of oral microplastics intake. *Science of the Total Environment*. Amsterdam: Elsevier, 2023, roč. 858, č. 3, s. 1-12. ISSN 0048-9697. Dostupné z: <https://dx.doi.org/10.1016/j.scitotenv.2022.159976>.

Příručka pro tvorbu a použití disoluční metody se zřetelem k perorálním léčivým přípravkům s okamžitým uvolňováním [Typ výsledku: B]

FRANC, Aleš. Příručka pro tvorbu a použití disoluční metody se zřetelem k perorálním léčivým přípravkům s okamžitým uvolňováním. 1. vyd. Pardubice: Univerzita Pardubice, 2021, 61 s. učebnice. ISBN 978-80-7560-364-7.

doc. PharmDr. Jan Gajdziok, Ph.D.**Bilayer mucoadhesive buccal films with prolonged release of ciclopirox olamine for the treatment of oral candidiasis: In vitro development, ex vivo permeation testing, pharmacokinetic and efficacy study in rabbits [Typ výsledku: Jimp]**

GAJDOŠOVÁ, Markéta, David VETCHÝ, Jan MUSELÍK, Jan GAJDZIOK, Jan JUŘICA, M. VETCHÁ, K. HAUPTMAN a V. JEKL. Bilayer mucoadhesive buccal films with prolonged release of ciclopirox olamine for the treatment of oral candidiasis: In vitro development, ex vivo permeation testing, pharmacokinetic and efficacy study in rabbits. *International Journal of Pharmaceutics*. AMSTERDAM: ELSEVIER SCIENCE BV, 2021, roč. 592, JAN 5 2021, s. 1-12. ISSN 0378-5173. Dostupné z: <https://dx.doi.org/10.1016/j.ijpharm.2020.120086>.

3D printing of multilayered orodispersible films with in-process drying [Typ výsledku: Jimp]

ELBL, Jan, Jan GAJDZIOK a J. KOLARCZYK. 3D printing of multilayered orodispersible films with in-process drying. *International Journal of Pharmaceutics*. AMSTERDAM: ELSEVIER SCIENCE BV, 2020, roč. 575, č. 118883, s. 1-8. ISSN 0378-5173. Dostupné z: <https://dx.doi.org/10.1016/j.ijpharm.2019.118883>.

Comparative Study of Powder Carriers Physical and Structural Properties [Typ výsledku: Jimp]

KOSTELANSKÁ, Klára, Barbora Blahova PRUDILOVA, Sylva HOLESOVA, Jakub VLCEK, David VETCHÝ a Jan GAJDZIOK. Comparative Study of Powder Carriers Physical and Structural Properties. *Pharmaceutics*. Basel: MDPI, 2022, roč. 14, č. 4, s. 1-18. ISSN 1999-4923. Dostupné z: <https://dx.doi.org/10.3390/pharmaceutics14040818>.

Multiple In vitro biological effects of phenolic compounds from *Morus alba* root bark [Typ výsledku: Jimp]

ČULENOVÁ, Marie, Alice SYCHROVÁ, S. T. S. HASSAN, K. BERCHOVA-BIMOVA, P. SVOBODOVA, A. HELCLOVA, H. MIČHNOVA, J. HOSEK, H. VASILEV, Pavel SUCHÝ, Gabriela KUZMÍNOVÁ, Emil ŠVAJDLENKA, Jan GAJDZIOK, Alois ČÍŽEK, Václav SUCHÝ a Karel ŠMEJKAL. Multiple In vitro biological effects of phenolic compounds from *Morus alba* root bark. *JOURNAL OF ETHNOPHARMACOLOGY*. CLARE: ELSEVIER IRELAND LTD, 2020, roč. 248, č. 112296, s. 1-12. ISSN 0378-8741. Dostupné z: <https://dx.doi.org/10.1016/j.jep.2019.112296>.

Stabilized antioxidative plant extracts formulated by liquisolid technique [Typ výsledku: Jimp]

KURHAJEC, Slavomír, Klára KOSTELANSKÁ, Sylvie PAVLOKOVÁ, David VETCHÝ, Tomáš WOLASCHKA, Jan GAJDZIOK a Aleš FRANC. Stabilized antioxidative plant extracts formulated by liquisolid technique. *JOURNAL OF DRUG DELIVERY SCIENCE AND TECHNOLOGY*. AMSTERDAM: ELSEVIER, 2020, roč. 60, č. 102022, s. 1-13. ISSN 1773-2247. Dostupné z: <https://dx.doi.org/10.1016/j.jddst.2020.102022>.

PharmDr. Tomáš Goněc, Ph.D.

Ring-Substituted 1-Hydroxynaphthalene-2-Carboxanilides Inhibit Proliferation and Trigger Mitochondria-Mediated Apoptosis [Typ výsledku: Jimp]

KAUEROVÁ, Tereza, Tomáš GONĚC, Josef JAMPÍLEK, Susanne HAFNER, Ann-Kathrin GAISER, Tatiana SYROVETS, Radek FEDR, Karel SOUČEK a Peter KOLLÁR. Ring-Substituted 1-Hydroxynaphthalene-2-Carboxanilides Inhibit Proliferation and Trigger Mitochondria-Mediated Apoptosis. *International Journal of Molecular Sciences*. Basel: Multidisciplinary Digital Publishing Institute, 2020, roč. 21, č. 10, s. 1-17. ISSN 1422-0067. Dostupné z: <https://dx.doi.org/10.3390/ijms21101700>

Trifluoromethylcinnamanilide Michael Acceptors for Treatment of Resistant Bacterial Infections [Typ výsledku: Jimp]

STRHÁRSKY, Tomáš, Dominika PINDJAKOVA, Jiří KOS, Lucia VRABLOVA, Pavel ŠMAK, Hana MICHNOVA, Tomáš GONĚC, Jan HOŠEK, Michal ORAVEC, Izabela JENDRZEJEWSKA, Alois ČÍŽEK a Josef JAMPÍLEK. Trifluoromethylcinnamanilide Michael Acceptors for Treatment of Resistant Bacterial Infections. *International Journal of Molecular Sciences*. Basel: Multidisciplinary Digital Publishing Institute, 2022, roč. 23, č. 23, s. 1-22. ISSN 1422-0067. Dostupné z: <https://dx.doi.org/10.3390/ijms232315090>.

Towards Arginase Inhibition: Hybrid SAR Protocol for Property Mapping of Chlorinated N-arylcinnamamides [Typ výsledku: Jimp]

BAK, Andrzej, Jiří KOS, Gilles DEGOTTE, Aleksandra SWIETLICKA, Tomáš STRHÁRSKY, Dominika PINDJAKOVA, Tomáš GONĚC, Adam SMOLINSKI, Pierre FRANCOTTE, Michel FREDERICH, Violetta KOZIK a Josef JAMPÍLEK. Towards Arginase Inhibition: Hybrid SAR Protocol for Property Mapping of Chlorinated N-arylcinnamamides. *International Journal of Molecular Sciences*. BASEL: MDPI, 2023, roč. 24, č. 4, s. 1-23. ISSN 1661-6596. Dostupné z: <https://dx.doi.org/10.3390/ijms24043611>.

Hydroxynaphthalenecarboxamides and substituted piperazinylpropandiols, two new series of BRAF inhibitors. A theoretical and experimental study [Typ výsledku: Jimp]

CAMPOS, L.E., F. GARIBOTTO, E. ANGELINA, J. KOS, Tomáš GONĚC, Pavlína MARVANOVÁ, M. VETTORAZZI, M. ORAVEC, I. JENDRZEJEWSKA, J. JAMPÍLEK, S.E. ALVAREZ a R.D. ENRIZ. Hydroxynaphthalenecarboxamides and substituted piperazinylpropandiols, two new series of BRAF inhibitors. A theoretical and experimental study. *Bioorganic Chemistry*. SAN DIEGO: ACADEMIC PRESS INC ELSEVIER SCIENCE, 2020, roč. 103, č. 104145, s. 1-13. ISSN 0045-2068. Dostupné z: <https://dx.doi.org/10.1016/j.bioorg.2020.104145>.

Antistaphylococcal Activities and ADME-Related Properties of Chlorinated Arylcarbamoynaphthalenylcarbamates [Typ výsledku: Jimp]

GONĚC, Tomáš, D. PINDJAKOVA, L. VRABLOVA, Tomáš STRHÁRSKY, H. MICHNOVA, Tereza KAUEROVÁ, Peter KOLLÁR, M. ORAVEC, I. JENDRZEJEWSKA, A. CIZEK a J. JAMPÍLEK. Antistaphylococcal Activities and ADME-Related Properties of Chlorinated Arylcarbamoynaphthalenylcarbamates. *Pharmaceuticals*. BASEL: MDPI, 2022, roč. 15, č. 6, s. 1-19. ISSN 1424-8247. Dostupné z: <https://dx.doi.org/10.3390/ph15060715>.

MVDr. Jana Hložková, Ph.D.

Thrombus Imaging Using 3D Printed Middle Cerebral Artery Model and Preclinical Imaging Techniques: Application to Thrombus Targeting and Thrombolytic Studies [Typ výsledku: Jimp]

WUNSCHOVA, A.V., A. NOVOBILSKY, Jana HLOŽKOVÁ, Peter SCHEER, H. PETROKOVA, R. JIRIK, P. KULICH, E. BARTHELDYOVA, F. HUBATKA, V. JONAS, R. MIKULIK, P. MALY, J. TURANEK a J. MASEK. Thrombus Imaging Using 3D Printed Middle Cerebral Artery Model and Preclinical Imaging Techniques: Application to Thrombus Targeting and Thrombolytic Studies. *European Journal of Pharmaceutics and Biopharmaceutics*. BASEL: Elsevier, 2020, roč. 12, č. 12, s. 1-16. ISSN 0939-6411. Dostupné z: <https://dx.doi.org/10.3390/pharmaceutics12121207>.

BIOIMAGING OF ELEMENTS AND PROTEINS BY LA-ICP-MS IN MEDICINE AND PHARMACEUTICAL RESEARCH [Typ výsledku: k]

KUCHYNKA, Michaela, Marcela VLČNOVSKÁ, Jana HLOŽKOVÁ, Peter SCHEER, Radka OPATŘILOVÁ, Markéta VACULOVIČOVÁ, Viktor KANICKÝ, Michal MASARIK a Tomáš VACULOVIČ. BIOIMAGING OF ELEMENTS AND PROTEINS BY LA-ICP-MS IN MEDICINE AND PHARMACEUTICAL RESEARCH. In *ESAS 2022*. 2022. ISBN 978-80-88195-41-2.

IMAGING OF ELEMENTS AND PROTEINS IN BIOLOGICAL TISSUES: MEDICAL AND PHARMACEUTICAL APPLICATIONS [Typ výsledku: k]

KUCHYNKA, Michaela, Peter SCHEER, Jana HLOŽKOVÁ, Marcela VLČNOVSKÁ, Radka OPATŘILOVÁ, Viktor KANICKÝ, Michal MASARIK, Tomáš VACULOVIČ a Tereza PADRTOVÁ. IMAGING OF ELEMENTS AND PROTEINS IN BIOLOGICAL TISSUES: MEDICAL AND PHARMACEUTICAL APPLICATIONS. 2022. ISBN 978-80-280-0110-0.

02451 IDENTIFICATION OF ALTERED MICRORNAS IN RAT STROKE MODELS - POTENTIAL BIOMARKERS OF ISCHEMIC STROKE [Typ výsledku: a]

BÁTKOVÁ, Tereza, B DVORAKOVA, Jana HLOŽKOVÁ, P SCHEER, I KREPELKOVA, E BACE, M HLOZANKOVA a Robert MIKULÍK. 02451 IDENTIFICATION OF ALTERED MICRORNAS IN RAT STROKE MODELS - POTENTIAL BIOMARKERS OF ISCHEMIC STROKE. In *INTERNATIONAL JOURNAL OF STROKE*. 2020. ISSN 1747-4930.

Brief analysis of the frequency of use and spectrum of animal models in stroke research [Typ výsledku: J]

HLOŽKOVÁ, Jana, Peter SCHEER a Pavel SUCHÝ. Brief analysis of the frequency of use and spectrum of animal models in stroke research. *CESKA A SLOVENSKA NEUROLOGIE A NEUROCHIRURGIE*. 2019. Dostupné z: <https://dx.doi.org/10.14735/amcsnn2019274>.

PharmDr. Bc. Kateřina Horská, Ph.D.

GLP-1 agonists: superior for mind and body in antipsychotic-treated patients? [Typ výsledku: Jimp]

HORSKÁ, Kateřina, Jana RUDÁ a Silje SKREDE. GLP-1 agonists: superior for mind and body in antipsychotic-treated patients? *TRENDS IN ENDOCRINOLOGY AND METABOLISM*. LONDON: ELSEVIER SCIENCE LONDON, 2022, roč. 33, č. 9, s. 628-638. ISSN 1043-2760. Dostupné z: <https://dx.doi.org/10.1016/j.tem.2022.06.005>.

Potent synergistic effects of dulaglutide and food restriction in prevention of olanzapine-induced metabolic adverse effects in a rodent model [Typ výsledku: Jimp]

HORSKÁ, Kateřina, Jan KUČERA, Eva DRAŽANOVÁ, Gabriela KUZMÍNOVÁ, Petra AMCHOVÁ, Mária HRICKOVÁ, Jana RUDÁ a Silje SKREDE. Potent synergistic effects of dulaglutide and food restriction in prevention of olanzapine-induced metabolic adverse effects in a rodent model. *Biomedicine and Pharmacotherapy*. ISSY-LES-MOULINEAUX: Elsevier, 2024, roč. 176, July 2024, s. 1-11. ISSN 0753-3322. Dostupné z: <https://dx.doi.org/10.1016/j.biopha.2024.116763>.

Interacting effects of the MAM model of schizophrenia and antipsychotic treatment: Untargeted proteomics approach in adipose tissue [Typ výsledku: Jimp]

KUČERA, Jan, Kateřina HORSKÁ, Pavel HRUŠKA, Daniela KURUCZOVÁ, Vincenzo MICALE, Jana RUDÁ a Julie DOBROVOLNÁ. Interacting effects of the MAM model of schizophrenia and antipsychotic treatment: Untargeted proteomics approach in adipose tissue. *Progress in Neuro-Psychopharmacology & Biological Psychiatry*. Oxford: PERGAMON-ELSEVIER SCIENCE LTD, 2021, roč. 2021, č. 108, s. 1-15. ISSN 0278-5846. Dostupné z: <https://dx.doi.org/10.1016/j.pnpb.2021.107532>.

Metabolic profile of methylazoxymethanol model of schizophrenia in rats and effects of three antipsychotics in long-acting formulation [Typ výsledku: Jimp]

HORSKÁ, Kateřina, Hana KOTOLOVÁ, Michal KARPÍŠEK, Zuzana BABINSKÁ, Tomáš HAMMER, Jiří PROCHÁZKA, Tibor ŠTARK, Vincenzo MICALE a Jana RUDÁ. Metabolic profile of methylazoxymethanol model of schizophrenia in rats and effects of three antipsychotics in long-acting formulation. *Toxicology and applied pharmacology*. San Diego: Elsevier, 2020, roč. 406, November 2020, s. 1-14. ISSN 0041-008X. Dostupné z: <https://dx.doi.org/10.1016/j.taap.2020.115214>.

Hemodynamic and white blood cells parameters in patients with first-episode psychosis: a pilot longitudinal study [Typ výsledku: Jimp]

USTOHAL, Libor, Michaela MAYEROVÁ, Kateřina HORSKÁ, Marie OBDRŽÁLKOVÁ, Hana CRHOVÁ, Hana PŘIKRYLOVÁ KUČEROVÁ, Eva ČEŠKOVÁ a Tomáš KAŠPÁREK. Hemodynamic and white blood cells parameters in patients with first-episode psychosis: a pilot longitudinal study. *International Journal of Psychiatry in Clinical Practice*. ABINGDON: TAYLOR & FRANCIS LTD, 2022, roč. 26, č. 2, s. 213-216. ISSN 1365-1501. Dostupné z: <https://dx.doi.org/10.1080/13651501.2022.2115214>.

doc. RNDr. Jan Hošek, Ph.D.

Cross sectional study on exposure to BPA and its analogues and semen parameters in Czech men [Typ výsledku: Jimp]

JEŠETA, Michal, Jiří KALINA, Kateřina FRANZOVÁ, Sandra FIALKOVÁ, Jan HOŠEK, Lenka MEKIŇOVÁ, Igor CRHA, Bartosz KEMPISTY, Pavel VENTRUBA a Jana NAVRÁTILOVÁ. Cross sectional study on exposure to BPA and its analogues and semen parameters in Czech men. *Environmental Pollution*. OXFORD: ELSEVIER SCI LTD, 2024, roč. 345, March 2024, s. 1-9. ISSN 0269-7491. Dostupné z: <https://dx.doi.org/10.1016/j.envpol.2024.123445>.

Trifluoromethylcinnamanilide Michael Acceptors for Treatment of Resistant Bacterial Infections [Typ výsledku: Jimp]

STRHÁRSKY, Tomáš, Dominika PINDJAKOVA, Jiří KOS, Lucia VRABLOVA, Pavel ŠMAK, Hana MICHNOVA, Tomáš GONĚC, Jan HOŠEK, Michal ORAVEC, Izabela JENDRZEJEWSKA, Alois ČÍŽEK a Josef JAMPILEK. Trifluoromethylcinnamanilide Michael Acceptors for Treatment of Resistant Bacterial Infections. *International Journal of Molecular Sciences*. Basel: Multidisciplinary Digital Publishing Institute, 2022, roč. 23, č. 23, s. 1-22. ISSN 1422-0067. Dostupné z: <https://dx.doi.org/10.3390/ijms232315090>.

Sildenafil affects the human Kir2.1 and Kir2.2 channels at clinically relevant concentrations: Inhibition potentiated by low Ba²⁺ [Typ výsledku: Jimp]

IJIMA, Akimasa, Olga ŠVECOVÁ, Jan HOŠEK, Roman KULA a Markéta BÉBAROVÁ. Sildenafil affects the human Kir2.1 and Kir2.2 channels at clinically relevant concentrations: Inhibition potentiated by low Ba²⁺. *FRONTIERS IN PHARMACOLOGY*. LAUSANNE: FRONTIERS MEDIA SA, 2023, roč. 14, February 2023, s. 1-10. ISSN 1663-9812. Dostupné z: <https://dx.doi.org/10.3389/fphar.2023.1136272>.

Therapeutic potential of prenylated stilbenoid macasiamenene F through its anti-inflammatory and cytoprotective effects on LPS-challenged monocytes and microglia [Typ výsledku: Jimp]

LELÁKOVÁ, Veronika, Sophie BÉRAUD-DUFOUR, Jan HOŠEK, Karel ŠMEJKAL, Vilailak PRACHYAWARAKORN, Phanruethai PAILEE, Catherine WIDMANN, Jiří VÁCLAVÍK, Thierry COPPOLA, Jean MAZELLA, Nicolas BLONDEAU a Catherine HEURTEAUX. Therapeutic potential of prenylated stilbenoid macasiamenene F through its anti-inflammatory and cytoprotective effects on LPS-challenged monocytes and microglia. *JOURNAL OF ETHNOPHARMACOLOGY*. CLARE: ELSEVIER IRELAND LTD, 2020, roč. 263, č. 263, s. 1-14. ISSN 0378-8741. Dostupné z: <https://dx.doi.org/10.1016/j.jep.2020.113147>.

Enhancing Solubility and Bioefficacy of Stilbenes by Liposomal Encapsulation-The Case of Macasiamenene F [Typ výsledku: Jimp]

BREZANI, Veronika, Nicolas BLONDEAU, Jan KOTOUCEK, Eva KLÁSKOVÁ, Karel ŠMEJKAL, Jan HOŠEK, Eliska MASKOVA, Pavel KULICH, Vilailak PRACHYAWARAKORN, Catherine HEURTEAUX a Josef MASEK. Enhancing Solubility and Bioefficacy of Stilbenes by Liposomal Encapsulation-The Case of Macasiamenene F. *ACS Omega*. WASHINGTON: American Chemical Society, 2024, roč. 9, č. 8, s. 9027-9039. ISSN 2470-1343. Dostupné z: <https://dx.doi.org/10.1021/acsc.3c01111>.

doc. PharmDr. Jan Juřica, Ph.D.

Bilayer mucoadhesive buccal films with prolonged release of ciclopirox olamine for the treatment of oral candidiasis: In vitro development, ex vivo permeation testing, pharmacokinetic and efficacy study in rabbits [Typ výsledku: Jimp]

GAJDOŠOVÁ, Markéta, David VETCHÝ, Jan MUSELÍK, Jan GAJDZIOK, Jan JUŘICA, M. VETCHÁ, K. HAUPTMAN a V. JEKL. Bilayer mucoadhesive buccal films with prolonged release of ciclopirox olamine for the treatment of oral candidiasis: In vitro development, ex vivo permeation testing, pharmacokinetic and efficacy study in rabbits. *International Journal of Pharmaceutics*. AMSTERDAM: ELSEVIER SCIENCE BV, 2021, roč. 592, JAN 5 2021, s. 1-12. ISSN 0378-5173. Dostupné z: <https://dx.doi.org/10.1016/j.ijpharm.2020.120086>.

Drug interaction profile of TKI alectinib allows effective and safe treatment of ALK plus lung cancer in the kidney transplant recipient [Typ výsledku: Jimp]

BÍLEK, Ondřej, Miloš HOLÁNEK, Jan JUŘICA, Sona STEPANKOVA, Jiri VASINA, Iveta SELINGEROVÁ, Alexandr POPRACH, Simona BOŘILOVÁ, Tomáš KAZDA, Igor KISS a Lenka ZDRAŽILOVÁ DUBSKÁ. Drug interaction profile of TKI alectinib allows effective and safe treatment of ALK plus lung cancer in the kidney transplant recipient. *International Immunopharmacology*. AMSTERDAM: ELSEVIER, 2021, roč. 99, October 2021, s. 1-6. ISSN 1567-5769. Dostupné z: <https://dx.doi.org/10.1016/j.intimp.2021.108012>.

Lycopene increases metabolic activity of rat liver CYP2B, CYP2D and CYP3A. [Typ výsledku: Jimp]

NOSKOVÁ, Kristýna, Gabriela PŘIBYL DOVRTĚLOVÁ, Ondřej ZENDULKA, Markéta STRAKOŠOVÁ, Ondřej PEŠ a Jan JUŘICA. Lycopene increases metabolic activity of rat liver CYP2B, CYP2D and CYP3A. *Pharmacological Reports*. Heidelberg: Springer, 2020, roč. 72, č. 1, s. 156-165. ISSN 1734-1140. Dostupné z: <https://dx.doi.org/10.1007/s43440-019-00007-y>.

Longitudinal monitoring of hair cortisol using liquid chromatography-mass spectrometry to prevent hypercortisolism in patients undergoing glucocorticoid replacement therapy [Typ výsledku: Jimp]

KOSTOLANSKÁ, Katarína, Helena ŠIPROVÁ, Elis BARTEČKŮ, Jan JUŘICA, Ivan ŘIHÁČEK, Eva TÁBORSKÁ, Miroslav SOUČEK a Ondřej PEŠ. Longitudinal monitoring of hair cortisol using liquid chromatography-mass spectrometry to prevent hypercortisolism in patients undergoing glucocorticoid replacement therapy. *THERAPEUTIC DRUG MONITORING*. PHILADELPHIA: LIPPINCOTT WILLIAMS & WILKINS, 2022, roč. 44, č. 3, s. 438-447. ISSN 0163-4356. Dostupné z: <https://dx.doi.org/10.1097/FTD.0000000000000946>.

Assessment of Delta-9-Tetrahydrocannabinol (THC) in Saliva and Blood After Oral Administration of Medical Cannabis With Respect to its Effect on Driving Abilities [Typ výsledku: Jimp]

TROJAN, Vaclav, Leoš LANDA, Radovan HRIB, Jan JUŘICA, Jitka RYCHLÍČKOVÁ, Vaclav ZVONICEK, Lenka HALAMKOVA, Jan HALAMEK, Regina DEMLOVÁ, Silvie BĚLAŠKOVÁ a Jiri SLIVA. Assessment of Delta-9-Tetrahydrocannabinol (THC) in Saliva and Blood After Oral Administration of Medical Cannabis With Respect to its Effect on Driving Abilities. *Physiological Research*. Praha: Akademie Ved Ceske Republiky, 2022, roč. 71, č. 5, s. 703-712. ISSN 0862-8408. Dostupné z: <https://dx.doi.org/10.33549/physiolres.934907>.

PharmDr. Tereza Kauerová, Ph.D.

Ring-Substituted 1-Hydroxynaphthalene-2-Carboxanilides Inhibit Proliferation and Trigger Mitochondria-Mediated Apoptosis [Typ výsledku: Jimp]

KAUEROVÁ, Tereza, Tomáš GONĚC, Josef JAMPÍLEK, Susanne HAFNER, Ann-Kathrin GAISER, Tatiana SYROVETS, Radek FEDR, Karel SOUČEK a Peter KOLLÁR. Ring-Substituted 1-Hydroxynaphthalene-2-Carboxanilides Inhibit Proliferation and Trigger Mitochondria-Mediated Apoptosis. *International Journal of Molecular Sciences*. Basel: Multidisciplinary Digital Publishing Institute, 2020, roč. 21, č. 10, s. 1-17. ISSN 1422-0067. Dostupné z: <https://dx.doi.org/10.3390/ijms21041728>.

Salicylanilides and Their Anticancer Properties [Typ výsledku: Jimp]

KAUEROVÁ, Tereza, Maria-Jesus PEREZ-PEREZ a Peter KOLLÁR. Salicylanilides and Their Anticancer Properties. *International Journal of Molecular Sciences*. Basel: Multidisciplinary Digital Publishing Institute, 2023, roč. 24, č. 2, s. 1-22. ISSN 1422-0067. Dostupné z: <https://dx.doi.org/10.3390/ijms24021728>.

Antiproliferative and cytotoxic activities of C-Geranylated flavonoids from *Paulownia tomentosa* Steud. Fruit [Typ výsledku: Jimp]

MOLČANOVÁ, Lenka, Tereza KAUEROVÁ, S. DALL'ACQUA, P. MARSIK, Peter KOLLÁR a Karel ŠMEJKAL. Antiproliferative and cytotoxic activities of C-Geranylated flavonoids from *Paulownia tomentosa* Steud. Fruit. *Bioorganic Chemistry*. SAN DIEGO: ACADEMIC PRESS INC ELSEVIER SCIENCE, 2021, roč. 111, č. 104797, s. 1-12. ISSN 0045-2068. Dostupné z: <https://dx.doi.org/10.1016/j.bioorg.2021.104797>.

Hybridization Approach to Identify Salicylanilides as Inhibitors of Tubulin Polymerization and Signal Transducers and Activators of Transcription 3 (STAT3) [Typ výsledku: Jimp]

GARGANTILLA, Marta, Leentje PERSOONS, Tereza KAUEROVÁ, Natalia DEL RIO, Dirk DAELEMANS, Eva-Maria PRIEGO, Peter KOLLÁR a Maria-Jesus PEREZ-PEREZ. Hybridization Approach to Identify Salicylanilides as Inhibitors of Tubulin Polymerization and Signal Transducers and Activators of Transcription 3 (STAT3). *Pharmaceuticals*. BASEL: MDPI, 2022, roč. 15, č. 7, s. 1-18. ISSN 1424-8247. Dostupné z: <https://dx.doi.org/10.3390/ph15070835>.

1. místo v Biologické sekci Nadnárodního kola studentské vědecké konference [Typ výsledku: o]

DVOŘÁKOVÁ, Martina, Peter KOLLÁR, Magdaléna ONUŠČÁKOVÁ, Pavel BOBÁL a Tereza KAUEROVÁ. 1. místo v Biologické sekci Nadnárodního kola studentské vědecké konference. 2022.

doc. RNDr. Jozef Kolář, CSc.

Historical analysis of pharmacoeconomic terms [Typ výsledku: Jimp]

GREGA, Dominik a Jozef KOLÁŘ. Historical analysis of pharmacoeconomic terms. *Scientometrics*. DORDRECHT: Springer, 2019, roč. 119, č. 3, s. 1643-1654. ISSN 0138-9130. Dostupné z: <https://dx.doi.org/10.1007/s11192-019-03093-0>.

The Economic Burden of Biological Drugs in Rheumatoid Arthritis Treatment [Typ výsledku: Jimp]

GREGA, Dominik a Jozef KOLÁŘ. The Economic Burden of Biological Drugs in Rheumatoid Arthritis Treatment. *Value in Health Regional Issues*. AMSTERDAM: Elsevier, 2024, roč. 40, March, s. 13-18. ISSN 2212-1099. Dostupné z: <https://dx.doi.org/10.1016/j.vhri.2023.10.001>.

Role fyzických osob, kterým je poskytována zdravotní péče - terminologické poznámky [Typ výsledku: Jsc]

KOLÁŘ, Jozef a Tünde AMBRUS. Role fyzických osob, kterým je poskytována zdravotní péče - terminologické poznámky. *Česká a slovenská farmacie*. Praha: Česká lékařská společnost J.E. Purkyně, 2022, roč. 71, č. 1, s. 13-19. ISSN 1210-7816. Dostupné z: <https://dx.doi.org/10.5817/csf2022-1-13>.

Friction cost approach methodology in pharmacoeconomic analyses [Typ výsledku: Jsc]

GREGA, Dominik a Jozef KOLÁŘ. Friction cost approach methodology in pharmacoeconomic analyses. *Česká a slovenská farmacie*. Česká lékařská společnost J.E. Purkyně, 2021, roč. 70, č. 3, s. 107-111. ISSN 1210-7816. Dostupné z: <https://dx.doi.org/10.5817/CSF2021-3-107>.

Specifický charakter léčiv a hodnota léčiv [Typ výsledku: Jsc]

KOLÁŘ, Jozef a Jan KOSTŘIBA. Specifický charakter léčiv a hodnota léčiv. *Česka a slovenska farmacie*. Praha: Česká lékařská společnost J. E. Purkyně, 2021, roč. 70, č. 4, s. 119-126. ISSN 1210-7816. Dostupné z: <https://dx.doi.org/10.5817/CSF2021-4-119>.

GREGA, Dominik, Tünde AMBRUS, Aadam MATEJOVIC, Martina ŠUTOROVÁ a Jozef KOLÁŘ. ANALYSIS OF THE EFFECTIVENESS OF THE PHARMACY NETWORK. *FARMACIA*. BUCURESTI: SOC STIINTE FARMACEUTICE ROMANIA, 2021, roč. 69, č. 4, s. 799-805. ISSN 0014-8237. Dostupné z: <https://dx.doi.org/10.31925/farmacia.2021.4.23>. (Typ výsledku: Jimp)

MALÝ, Josef, Simona DVORACKOVA, Eva ZIMCIKOVA, Ales A. KUBENA, Jozef KOLAR, Jiri VLCEK, Miroslav PENKA a Katerina MALA-LADOVA. Patterns in anticoagulant utilization in the Czech Republic during 2007-2017. *JOURNAL OF THROMBOSIS AND THROMBOLYSIS*. DORDRECHT: SPRINGER, 2019, roč. 47, č. 2, s. 305-311. ISSN 0929-5305. Dostupné z: <https://dx.doi.org/10.1007/s11239-019-01806-z>. (Typ výsledku: Jimp)

doc. PharmDr. Peter Kollár, Ph.D.

Ring-Substituted 1-Hydroxynaphthalene-2-Carboxanilides Inhibit Proliferation and Trigger Mitochondria-Mediated Apoptosis [Typ výsledku: Jimp]

KAUEROVÁ, Tereza, Tomáš GONĚC, Josef JAMPÍLEK, Susanne HAFNER, Ann-Kathrin GAISER, Tatiana SYROVETS, Radek FEDR, Karel SOUČEK a Peter KOLLÁR. Ring-Substituted 1-Hydroxynaphthalene-2-Carboxanilides Inhibit Proliferation and Trigger Mitochondria-Mediated Apoptosis. *International Journal of Molecular Sciences*. Basel: Multidisciplinary Digital Publishing Institute, 2020, roč. 21, č. 10, s. 1-17. ISSN 1422-0067. Dostupné z: <https://dx.doi.org/10.3390/ijms21101728>.

Salicylanilides and Their Anticancer Properties [Typ výsledku: Jimp]

KAUEROVÁ, Tereza, Maria-Jesus PEREZ-PEREZ a Peter KOLLÁR. Salicylanilides and Their Anticancer Properties. *International Journal of Molecular Sciences*. Basel: Multidisciplinary Digital Publishing Institute, 2023, roč. 24, č. 2, s. 1-22. ISSN 1422-0067. Dostupné z: <https://dx.doi.org/10.3390/ijms24021728>.

Antiproliferative and cytotoxic activities of C-Geranylated flavonoids from *Paulownia tomentosa* Steud. Fruit [Typ výsledku: Jimp]

MOLČANOVÁ, Lenka, Tereza KAUEROVÁ, S. DALL'ACQUA, P. MARSIK, Peter KOLLÁR a Karel ŠMEJKAL. Antiproliferative and cytotoxic activities of C-Geranylated flavonoids from *Paulownia tomentosa* Steud. Fruit. *Bioorganic Chemistry*. SAN DIEGO: ACADEMIC PRESS INC ELSEVIER SCIENCE, 2021, roč. 111, č. 104797, s. 1-12. ISSN 0045-2068. Dostupné z: <https://dx.doi.org/10.1016/j.bioorg.2021.104797>.

Hybridization Approach to Identify Salicylanilides as Inhibitors of Tubulin Polymerization and Signal Transducers and Activators of Transcription 3 (STAT3) [Typ výsledku: Jimp]

GARGANTILLA, Marta, Leentje PERSOONS, Tereza KAUEROVÁ, Natalia DEL RIO, Dirk DAELEMANS, Eva-Maria PRIEGO, Peter KOLLÁR a Maria-Jesus PEREZ-PEREZ. Hybridization Approach to Identify Salicylanilides as Inhibitors of Tubulin Polymerization and Signal Transducers and Activators of Transcription 3 (STAT3). *Pharmaceuticals*. BASEL: MDPI, 2022, roč. 15, č. 7, s. 1-18. ISSN 1424-8247. Dostupné z: <https://dx.doi.org/10.3390/ph15070835>.

Betablokátory v léčbě kardiovaskulárních onemocnění [Typ výsledku: B]

VÍTOVEC, Jiří, Peter KOLLÁR a Karel LÁBR. Betablokátory v léčbě kardiovaskulárních onemocnění. 1. vyd. Praha: Grada Publishing, a.s., 2023, 136 s. Farmakoterapie pro klinickou praxi. ISBN 978-80-271-3220-1.

PharmDr. Bc. Hana Kotolová, Ph.D.

Validation and verification of predictive salivary biomarkers for oral health [Typ výsledku: Jimp]

BOSTANCI, N., K. MITSAKAKIS, B. AFAÇAN, K. BAO, B. JOHANNSEN, D. BAUMGARTNER, L. MULLER, Hana KOTOLOVÁ, G. EMINGİL a Michal KARPÍŠEK. Validation and verification of predictive salivary biomarkers for oral health. *Nature Scientific Reports*. London: NATURE RESEARCH, 2021, roč. 11, č. 1, s. 1-12. ISSN 2045-2322. Dostupné z: <https://dx.doi.org/10.1038/s41598-021-85120-w>.

Metabolic profile of methylazoxymethanol model of schizophrenia in rats and effects of three antipsychotics in long-acting formulation [Typ výsledku: Jimp]

HORSKÁ, Kateřina, Hana KOTOLOVÁ, Michal KARPÍŠEK, Zuzana BABINSKÁ, Tomáš HAMMER, Jiří PROCHÁZKA, Tibor ŠTARK, Vincenzo MICALE a Jana RUDÁ. Metabolic profile of methylazoxymethanol model of schizophrenia in rats and effects of three antipsychotics in long-acting formulation. Toxicology and applied pharmacology. San Diego: Elsevier, 2020, roč. 406, November 2020, s. 1-14. ISSN 0041-008X. Dostupné z: <https://dx.doi.org/10.1016/j.taap.2020.115214>.

PRE-FORMULATION DESIGN OF SUSTAINED-RELEASE GnRH α -LOADED PLGA MICROSPHERES AND ASSOCIATED FORMULATIONS FOR CONTROLLING REPRODUCTION IN AQUACULTURE [Typ výsledku: Jimp]

HOLICKÁ, Martina, Jakub VYSLOUŽIL, Kateřina KUBOVÁ, Jan MUSELÍK, Eva RADINOVÁ, David VETCHÝ, Hana KOTOLOVÁ, Tomáš HAMMER, J. MAŠEK, P. PODHOREC a J. KNOWLES. PRE-FORMULATION DESIGN OF SUSTAINED-RELEASE GnRH α -LOADED PLGA MICROSPHERES AND ASSOCIATED FORMULATIONS FOR CONTROLLING REPRODUCTION IN AQUACULTURE. ACTA POLONIAE PHARMACEUTICA. Warsaw: POLSKIE TOWARZYSTWO FARMACEUTYCZNE, 2021, roč. 78, č. 6, s. 801-812. ISSN 0001-6837. Dostupné z: <https://dx.doi.org/10.32383/appdr>

Bolest chrbta — odporúčania pre postup lekárnik [Typ výsledku: Jost]

GRÓFIK, Milan, Daniela MINÁRIKOVÁ a Hana KOTOLOVÁ. Bolest chrbta — odporúčania pre postup lekárnik. Súčasná klinická prax. Praha, 2023, roč. 19, č. 1, s. 29-33. ISSN 1214-7036.

CLOZAPINE AUGMENTATION WITH LONG-ACTING INJECTABLE ANTIPSYCHOTICS - EXPERIENCES IN THE CZECH REPUBLIC [Typ výsledku: a]

KOTOLOVÁ, Hana, Martina NOVÁKOVÁ, Eliška NOVÁKOVÁ, Tomáš HAMMER a Libor USTOHAL. CLOZAPINE AUGMENTATION WITH LONG-ACTING INJECTABLE ANTIPSYCHOTICS - EXPERIENCES IN THE CZECH REPUBLIC. In ESCP PRAGUE SYMPOSIUM 2022. 2022. Dostupné z: <https://dx.doi.org/10.1007/s11096-022-01521-5>.

doc. PharmDr. Renata Kubínová, Ph.D.

Abietane diterpenes of the genus *Plectranthus* sensu lato [Typ výsledku: Jimp]

GÁBOROVÁ, Mária, Karel ŠMEJKAL a Renata KUBÍNOVÁ. Abietane diterpenes of the genus *Plectranthus* sensu lato. Molecules. Basel: MDPI, 2022, roč. 27, č. 1, s. 1-64. ISSN 1420-3049. Dostupné z: <https://dx.doi.org/10.3390/molecules27010166>.

Arylaminoopropanone Derivatives as Potential Cholinesterase Inhibitors: Synthesis, Docking Study and Biological Evaluation [Typ výsledku: Jimp]

HUDCOVÁ, Anna, Aleš KROUTIL, Renata KUBÍNOVÁ, A. D. GARRO, L. J. GUTIERREZ, D. ENRIZ, M. ORAVEC a Jozef CSÖLLEI. Arylaminoopropanone Derivatives as Potential Cholinesterase Inhibitors: Synthesis, Docking Study and Biological Evaluation. Molecules. 2020, roč. 25, č. 7, s. 1751-1767. ISSN 1420-3049. Dostupné z: <https://dx.doi.org/10.3390/molecules25071751>.

Anti-MRSA activity of abietane diterpenes from *Coleus blumei* Benth. [Typ výsledku: J]

JURKANINOVÁ, Sabína, Renata KUBÍNOVÁ, Marcela NEJEZCHLEBOVÁ, Markéta GAZDOVÁ, Zuzana HANAKOVA a Stefano DALL ACQUA. Anti-MRSA activity of abietane diterpenes from *Coleus blumei* Benth. NATURAL PRODUCT RESEARCH. ABINGDON: TAYLOR & FRANCIS LTD, 2019, 7 s. ISSN 1478-6419. Dostupné z: <https://dx.doi.org/10.1080/14786419.2019.1638492>.

Indol-2-Carboxylic Acid Esters Containing N-Phenylpiperazine Moiety - Preparation and Cholinesterase-inhibiting Activity [Typ výsledku: Jimp]

PADRTOVÁ, Tereza, Pavlína MARVANOVÁ, Renata KUBÍNOVÁ, Jozef CSÖLLEI, Oldřich FARSA, Tomáš GONĚC, Klára ODEHNALOVÁ, Radka OPATŘILOVÁ, Jiří PAZOUREK, Alice SYCHROVÁ, Karel ŠMEJKAL a Petr MOKRÝ. Indol-2-Carboxylic Acid Esters Containing N-Phenylpiperazine Moiety - Preparation and Cholinesterase-inhibiting Activity. Current organic synthesis. Sharjah: Bentham Science Publ Ltd, 2020, roč. 17, č. 7, s. 576-587. ISSN 1570-1794. Dostupné z: <https://dx.doi.org/10.2174/1570179417666200619132218>.

New diterpenoid glucoside and flavonoids from *Plectranthus scutellarioides* (L.) R. Br. [Typ výsledku: Jimp]

KUBÍNOVÁ, Renata, Markéta GAZDOVÁ, Zuzana HANÁKOVÁ, S. JURKANINOVA, Acqua S DALL, Josef CVAČKA a Otakar HUMPA. New diterpenoid glucoside and flavonoids from *Plectranthus scutellarioides* (L.) R. Br. SOUTH AFRICAN JOURNAL OF BOTANY. AMSTERDAM: ELSEVIER SCIENCE BV, 2019, roč. 120, 0254-6299, s. 286-290. ISSN 0254-6299. Dostupné z: <https://dx.doi.org/10.1016/j.sajb.2018.08.023>.

doc. PharmDr. Kateřina Kubová, Ph.D.

Structure, dynamics, and functional properties of hybrid alginate-pectin gels dually crosslinked by Ca²⁺ and Zn²⁺ ions designed as a delivery device for self-emulsifying systems for lipophilic phytotherapeutics [Typ výsledku: Jimp]

URBANOVA, Martina, Jan MACKŮ, Kateřina KUBOVÁ, Jakub VYSLOUŽIL, Jan MUSELÍK, Miroslav SLOUF, Ivana SEDENKOVA, Olga KOCKOVA, Larisa JANISOVA, Josef MASEK, Eliska MASKOVA, Adam NOVOBILSKY, Martina PARENICOVA, Rafal KONEFAL, Jiri CZERNEK, David VETCHÝ, Miroslava PAVELKOVÁ a Jiri BRUS. Structure, dynamics, and functional properties of hybrid alginate-pectin gels dually crosslinked by Ca²⁺ and Zn²⁺ ions designed as a delivery device for self-emulsifying systems for lipophilic phytotherapeutics. Food Hydrocolloids. Oxford: Elsevier Science, 2024, roč. 150, May 2024, s. 1-16. ISSN 0268-005X. Dostupné z: <https://dx.doi.org/10.1016/j.foodhyd.2023.109693>.

Hypromellose - A traditional pharmaceutical excipient with modern applications in oral and oromucosal drug delivery [Typ výsledku: Jimp]

MASKOVA, E., Kateřina KUBOVÁ, B.T. RAIMI-ABRAHAM, D. VLLASALIU, Eva KLÁSKOVÁ, J. TURANEK a J. MASEK. Hypromellose - A traditional pharmaceutical excipient with modern applications in oral and oromucosal drug delivery. Journal of Controlled Release. Amsterdam: Elsevier Science BV, 2020, roč. 324, č. 7727, s. 695-727. ISSN 0168-3659. Dostupné z: <https://dx.doi.org/10.1016/j.jconrel.2020.05.045>.

Anti-Cancer Properties of Resveratrol: A Focus on Its Impact on Mitochondrial Functions [Typ výsledku: Jimp]

KURSVIETIENE, Lolita, Dalia M KOPUSTINSKIENE, Inga STANEVICIENE, Ausra MONGIRDIENE, Kateřina KU-BOVÁ, Ruta MASTEIKOVÁ a Jurga BERNATONIENE. Anti-Cancer Properties of Resveratrol: A Focus on Its Impact on Mitochondrial Functions. *Antioxidants*. Basel: MDPI, 2023, roč. 12, č. 12, s. 1-24. ISSN 2076-3921. Dostupné z: <https://dx.doi.org/10.3390/antiox12122056>.

Assessment of Antimicrobial, Antiviral and Cytotoxic Potential of Alginate Beads Cross-Linked by Bivalent Ions for Vaginal Administration [Typ výsledku: Jimp]

PAVELKOVÁ, Miroslava, Jakub VYSLOUŽIL, Kateřina KUBOVÁ, Sylvie PAVLOKOVÁ, D. MOLINKOVA, V. CELER, A. PECHOVA, J. MASEK a David VETCHÝ. Assessment of Antimicrobial, Antiviral and Cytotoxic Potential of Alginate Beads Cross-Linked by Bivalent Ions for Vaginal Administration. *Pharmaceutics*. BASEL: Elsevier, 2021, roč. 13, č. 2, s. 1-20. ISSN 1939-6411. Dostupné z: <https://dx.doi.org/10.3390/pharmaceutics13020165>.

Matrix Vaginal Rings for Female Dogs-Effect of Altering Dimensions on Mechanical Properties and Dissolution Characteristics, and In vivo Safety Study [Typ výsledku: Jimp]

NOVÁKOVÁ TKADLEČKOVÁ, Veronika, V. PITRONOVA, Kateřina KUBOVÁ, Sylvie PAVLOKOVÁ, Jan ELBL, R. NOVOTNY, David VETCHÝ a Jakub VYSLOUŽIL. Matrix Vaginal Rings for Female Dogs-Effect of Altering Dimensions on Mechanical Properties and Dissolution Characteristics, and In vivo Safety Study. *AAPS PHARMSCITECH. NEW YORK: SPRINGER*, 2020, roč. 21, č. 6, s. 1-12. ISSN 1530-9932. Dostupné z: <https://dx.doi.org/10.1208/s12249-020-01770-5>.

Mgr. Michaela Kuchynka, Ph.D.

Variability in the Clearance of Lead Oxide Nanoparticles Is Associated with Alteration of Specific Membrane Transporters [Typ výsledku: Jimp]

DUMKOVÁ, Jana, Tereza SMUTNÁ, Lucie VRLÍKOVÁ, Hana KOTASOVÁ, Bohumil DOČEKAL, Lukáš ČAPKA, Michaela KUCHYNKA, Veronika JAKEŠOVÁ, Vendula PELKOVÁ, Kamil KŘŮMAL, Pavel COUFALÍK, Pavel MIKUŠKA, Zbyněk VEČEŘA, Tomáš VACULOVÍČ, Zuzana HUSÁKOVÁ, Viktor KANICKÝ, Aleš HAMPL a Marcela BUCHTOVÁ. Variability in the Clearance of Lead Oxide Nanoparticles Is Associated with Alteration of Specific Membrane Transporters. *ACS Nano*. Washington, D.C.: American Chemical Society, 2020, roč. 14, č. 3, s. 3096-3120. ISSN 1936-0851. Dostupné z: <https://dx.doi.org/10.1021/acsnano.9b08143>.

A Clearance Period after Soluble Lead Nanoparticle Inhalation Did Not Ameliorate the Negative Effects on Target Tissues Due to Decreased Immune Response [Typ výsledku: Jimp]

DUMKOVÁ, Jana, Tereza SMUTNÁ, Lucie VRLÍKOVÁ, Bohumil DOČEKAL, Daniela KRISTEKOVÁ, Zbyněk VEČEŘA, Zuzana HUSÁKOVÁ, Veronika JAKEŠOVÁ, Adriana JEDLIČKOVÁ, Pavel MIKUŠKA, Lukáš ALEXA, Pavel COUFALÍK, Michaela TVRDOŇOVÁ, Kamil KŘŮMAL, Tomáš VACULOVÍČ, Viktor KANICKÝ, Aleš HAMPL a Marcela BUCHTOVÁ. A Clearance Period after Soluble Lead Nanoparticle Inhalation Did Not Ameliorate the Negative Effects on Target Tissues Due to Decreased Immune Response. *International Journal of Molecular Sciences*. Basel: MDPI, 2020, roč. 21, č. 22, s. 1-27. ISSN 1422-0067. Dostupné z: <https://dx.doi.org/10.3390/ijms21228738>.

Comparison of Metal Nanoparticles (Au, Ag, Eu, Cd) Used for Immunoanalysis Using LA-ICP-MS Detection [Typ výsledku: Jimp]

VLČNOVSKÁ, Marcela, Aneta ŠTOSSOVÁ, Michaela KUCHYNKA, Veronika FALTUSOVÁ, Hana HOLCOVÁ POLANSKÁ, Michal MASAŘÍK, Roman HRSTKA, Vojtěch ADAM, Viktor KANICKÝ, Tomáš VACULOVÍČ a Markéta VACULOVÍČOVÁ. Comparison of Metal Nanoparticles (Au, Ag, Eu, Cd) Used for Immunoanalysis Using LA-ICP-MS Detection. *Molecules*. Basel: MDPI, 2021, roč. 26, č. 3, s. 1-11. ISSN 1420-3049. Dostupné z: <https://dx.doi.org/10.3390/molecules26030630>.

Gold nanoparticles as labels for immunochemical analysis using laser ablation inductively coupled plasma mass spectrometry [Typ výsledku: Jimp]

TVRDOŇOVÁ, Michaela, Marcela VLČNOVSKÁ, Lucie VANICKOVA, Viktor KANICKÝ, Vojtěch ADAM, Lena ASCHER, Norbert JAKUBOWSKI, Markéta VACULOVÍČOVÁ a Tomáš VACULOVÍČ. Gold nanoparticles as labels for immunochemical analysis using laser ablation inductively coupled plasma mass spectrometry. *Analytical and Bioanalytical chemistry*. HEIDELBERG: SPRINGER HEIDELBERG, 2019, roč. 411, č. 3, s. 559-564. ISSN 1618-2642. Dostupné z: <https://dx.doi.org/10.1007/s00216-018-1300-7>.

Laser Ablation Inductively Coupled Plasma Mass Spectrometry as a Powerful Tool for Spatially Resolved Analysis: An Experiment for Undergraduate Analytical Chemistry Laboratory [Typ výsledku: Jimp]

KUCHYNKA, Michaela, Hana HOLCOVÁ POLANSKÁ, Jaromír GUMULEC, Viktor KANICKÝ a Tomáš VACULOVÍČ. Laser Ablation Inductively Coupled Plasma Mass Spectrometry as a Powerful Tool for Spatially Resolved Analysis: An Experiment for Undergraduate Analytical Chemistry Laboratory. *Journal of Chemical Education*. WASHINGTON: American Chemical Society, 2023, roč. 100, č. 5, s. 1973-1979. ISSN 0021-9584. Dostupné z: <https://dx.doi.org/10.1021/acs.jchemed>

doc. PharmDr. Ruta Masteiková, CSc.

Cannabis sativa L. Bioactive Compounds and Their Protective Role in Oxidative Stress and Inflammation [Typ výsledku: Jimp]

KOPUSTINSKIENE, Dalia M, Ruta MASTEIKOVÁ, Robertas LAZAUSKAS a Jurga BERNATONIENE. Cannabis sativa L. Bioactive Compounds and Their Protective Role in Oxidative Stress and Inflammation. *Antioxidants*. Basel: MDPI, 2022, roč. 11, č. 4, s. 1-12. ISSN 2076-3921. Dostupné z: <https://dx.doi.org/10.3390/antiox11040660>.

Anti-Cancer Properties of Resveratrol: A Focus on Its Impact on Mitochondrial Functions [Typ výsledku: Jimp]

KURSVIETIENE, Lolita, Dalia M KOPUSTINSKIENE, Inga STANEVICIENE, Ausra MONGIRDIENE, Kateřina KU-BOVÁ, Ruta MASTEIKOVÁ a Jurga BERNATONIENE. Anti-Cancer Properties of Resveratrol: A Focus on Its Impact

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Formulation and Evaluation of Novel Film Wound Dressing Based on Collagen/Microfibrillated Carboxymethylcellulose Blend [Typ výsledku: Jimp]

TENOROVÁ, Kateřina, Ruta MASTEIKOVÁ, Sylvie PAVLOKOVÁ, Klára KOSTELANSKÁ, J. BERNATONIENE a David VETCHÝ. Formulation and Evaluation of Novel Film Wound Dressing Based on Collagen/Microfibrillated Carboxymethylcellulose Blend. Pharmaceutics. Basel: MDPI, 2022, roč. 14, č. 4, s. 1-15. ISSN 1999-4923. Dostupné z: <https://dx.doi.org/10.3390/pharmaceutics14040782>.

Natural Compounds Rosmarinic Acid and Carvacrol Counteract Aluminium-Induced Oxidative Stress [Typ výsledku: Jimp]

BARANAUSKAITE, J., I. SADAUSKIENE, A. LIEKIS, A. KASAUSKAS, R. LAZAUSKAS, U. ZLABIENE, Ruta MASTEIKOVÁ, D. M. KOPUSTINSKIENE a J. BERNATONIENE. Natural Compounds Rosmarinic Acid and Carvacrol Counteract Aluminium-Induced Oxidative Stress. Molecules. Orlando, Florida: Academic Press, 2020, roč. 25, č. 8, s. 1-13. ISSN 1079-9796. Dostupné z: <https://dx.doi.org/10.3390/molecules25081807>.

Formulation and Evaluation of Novel Collagen/carboxymethylcellulose Blend Film Wound Dressing [Typ výsledku: Jsc]

TENOROVÁ, Kateřina, Jana KURFÜRSTOVÁ, Ruta MASTEIKOVÁ, Sylvie PAVLOKOVÁ a Jurga BERNATONIENĚ. Formulation and Evaluation of Novel Collagen/carboxymethylcellulose Blend Film Wound Dressing. Česká a Slovenská Farmacie. 2022, roč. 71, č. 5, s. 190-199. ISSN 1210-7816.

PharmDr. Bc. Dana Mazánková, Ph.D.

Ascorbic acid intake during pregnancy [Typ výsledku: Jimp]

PODOLSKÁ, Kristína, Dana MAZÁNKOVÁ, Maria GOBOOVA a Ivan VANO. Ascorbic acid intake during pregnancy. Biomedical Papers, Olomouc: Palacky University. Olomouc: Palacky University, 2023, roč. 167, č. 3, s. 213-218. ISSN 1213-8118. Dostupné z: <https://dx.doi.org/10.5507/bp.2023.035>.

The role of maternal nutrition during pregnancy — overview of daily dosages recommendations [Typ výsledku: Jost]

PODOLSKÁ, Kristína, Dana MAZÁNKOVÁ, Mária GÖBÖOVÁ a Ivan VAŇO. The role of maternal nutrition during pregnancy — overview of daily dosages recommendations. FOLIA PHARMACEUTICA CASSOVIENSIA. Košice, Slovensko: Univerzita veterinárskeho lekárstva a farmácie v Košiciach, 2023, V, č. 2, s. 100-108. ISSN 2585-9609.

Analýza farmakoterapie geriatrických pacientov v zariadeniach pre seniorov so zameraním na potencionálne nevhodná liečiva [Typ výsledku: Jost]

MAZÁNKOVÁ, Dana a Nikola KOVÁROVÁ. Analýza farmakoterapie geriatrických pacientov v zariadeniach pre seniorov so zameraním na potencionálne nevhodná liečiva. Farmaceutický obzor. Bratislava: Slovenská zdravotnícka univerzita; Zdravotnícke vydavateľstvo Herba, spol. s r.o., 2022, roč. 91, č. 12, s. 277-288. ISSN 0014-8172.

Fall risk scores in health care facilities of geriatric care in the Czech republic [Typ výsledku: a]

MAZÁNKOVÁ, Dana, Jana MICHALCOVÁ, Adam HRBOTICKÝ a Ivana TAŠKOVÁ. Fall risk scores in health care facilities of geriatric care in the Czech republic. In 50th ESCP Symposium on Clinical Pharmacy, Polypharmacy and ageing - highly individualized, interprofessional, person-centered care. 2022. ISSN 2210-7711. Dostupné z: <https://dx.doi.org/10.1007/s11096-022-01521-5>.

Metronomická terapie v léčbě nádorových onemocnění [Typ výsledku: Jsc]

MAZÁNKOVÁ, Dana, Veronika BÁRKOVÁ a Pavel MAZÁNEK. Metronomická terapie v léčbě nádorových onemocnění. Česká a Slovenská Farmacie. Praha: Nakladatelske Stredisko CLSJE Purkyne, 2022, roč. 71, č. 3, s. 91-97. ISSN 1210-7816. Dostupné z: <https://dx.doi.org/10.5817/CSF2022-3-91>.

doc. Mgr. Jan Muselík, Ph.D.

A Critical Overview of FDA and EMA Statistical Methods to Compare In Vitro Drug Dissolution Profiles of Pharmaceutical Products [Typ výsledku: Jimp]

MUSELÍK, Jan, A. KOMERSOVA, Kateřina KUBOVÁ, K. MATZICK a B. SKALICKA. A Critical Overview of FDA and EMA Statistical Methods to Compare In Vitro Drug Dissolution Profiles of Pharmaceutical Products. Pharmaceutics. BASEL: MDPI, 2021, roč. 13, č. 10, s. 1-12. ISSN 1999-4923. Dostupné z: <https://dx.doi.org/10.3390/pharmaceutics13101703>.

Structural Changes of Sodium Warfarin in Tablets Affecting the Dissolution Profiles and Potential Safety of Generic Substitution [Typ výsledku: Jimp]

MUSELÍK, Jan, M. URBANOVA, E. BARTONICKOVA, J. PALOVCIK, David VETCHÝ, J. CZERNEK, L. JANISOVA, N. VELYCHKIVSKA, Aleš FRANC a J. BRUS. Structural Changes of Sodium Warfarin in Tablets Affecting the Dissolution Profiles and Potential Safety of Generic Substitution. Pharmaceutics. BASEL: MDPI, 2021, roč. 13, č. 9, s. 1-19. ISSN 1999-4923. Dostupné z: <https://dx.doi.org/10.3390/pharmaceutics13091364>.

Bilayer mucoadhesive buccal films with prolonged release of ciclopirox olamine for the treatment of oral candidiasis: In vitro development, ex vivo permeation testing, pharmacokinetic and efficacy study in rabbits [Typ výsledku: Jimp]

GAJDOŠOVÁ, Markéta, David VETCHÝ, Jan MUSELÍK, Jan GAJDZIOK, Jan JUŘICA, M. VETCHÁ, K. HAUPTMAN a V. JEKL. Bilayer mucoadhesive buccal films with prolonged release of ciclopirox olamine for the treatment of oral candidiasis: In vitro development, ex vivo permeation testing, pharmacokinetic and efficacy study in rabbits. International Journal of Pharmaceutics. AMSTERDAM: ELSEVIER SCIENCE BV, 2021, roč. 592, JAN 5 2021, s. 1-12. ISSN 0378-5173. Dostupné z: <https://dx.doi.org/10.1016/j.ijpharm.2020.120086>.

Exploration of Neusilin® US2 as an Acceptable Filler in HPMC Matrix Systems—Comparison of Pharmacopoeial and Dynamic Biorelevant Dissolution Study [Typ výsledku: Jimp]

BÍLIK, Tomáš, Jakub VYSLOUŽIL, Martina NAISEROVÁ, Jan MUSELÍK, Miroslava PAVELKOVÁ, Josef MAŠEK, D. ČOPOVÁ a Kateřina KUBOVÁ. Exploration of Neusilin® US2 as an Acceptable Filler in HPMC Matrix Systems—Comparison of Pharmacopoeial and Dynamic Biorelevant Dissolution Study. *Pharmaceutics*. BASEL: MDPI, 2022, roč. 14, č. 1, s. 1-18. ISSN 1999-4923. Dostupné z: <https://dx.doi.org/10.3390/pharmaceutics14010127>.

Rational Design of Self-Emulsifying Pellet Formulation of Thymol: Technology Development Guided by Molecular-Level Structure Characterization and Ex Vivo Testing [Typ výsledku: Jimp]

MACKŮ, Jan, Kateřina KUBOVÁ, Martina URBANOVA, Jan MUSELÍK, Aleš FRANC, Gabriela KOUTNÁ, Miroslava PAVELKOVÁ, David VETCHÝ, Josef MASEK, Eliska MASKOVA a Jiri BRUS. Rational Design of Self-Emulsifying Pellet Formulation of Thymol: Technology Development Guided by Molecular-Level Structure Characterization and Ex Vivo Testing. *Pharmaceutics*. Basel: MDPI, 2022, roč. 14, č. 8, s. 1-21. ISSN 1999-4923. Dostupné z: <https://dx.doi.org/10.3390/pharm>

doc. PharmDr. Ing. Radka Opatřilová, Ph.D., MBA**Potential toxicity of Schisandra chinensis to water environment: acute toxicity tests with water crustacean [Typ výsledku: Jimp]**

VALICKOVA, Jana, Stepan ZEZULKA, Eliska MARSALKOVA, Josef KOTLIK, Blahoslav MARSALEK a Radka OPATŘILOVÁ. Potential toxicity of Schisandra chinensis to water environment: acute toxicity tests with water crustacean. *Environmental Science and Pollution Research*. HEIDELBERG: SPRINGER HEIDELBERG, 2023, Neueden., October, s. 1-6. ISSN 0944-1344. Dostupné z: <https://dx.doi.org/10.1007/s11356-023-30182-8>.

Bioactive compounds from Schisandra chinensis - Risk for aquatic plants? [Typ výsledku: Jimp]

VALICKOVA, Jana, Stepan ZEZULKA, Eliska MARSALKOVA, Josef KOTLIK, Blahoslav MARSALEK a Radka OPATŘILOVÁ. Bioactive compounds from Schisandra chinensis - Risk for aquatic plants? *Aquatic toxicology*. AMSTERDAM: ELSEVIER, 2023, roč. 254, č. 106365, s. 1-5. ISSN 0166-445X. Dostupné z: <https://dx.doi.org/10.1016/j.aquatox.2022.106365>.

Antioxidative Activity of 1,3,5-Triazine Analogues Incorporating Aminobenzene Sulfonamide, Aminoalcohol/Phenol, Piperazine, Chalcone, or Stilbene Motifs [Typ výsledku: Jimp]

HAVRÁNKOVÁ, Eva, Nikola ČALKOVSKÁ, Tereza PADRTOVÁ, Jozef CSÖLLEI, Radka OPATŘILOVÁ a Pavel PAZDERA. Antioxidative Activity of 1,3,5-Triazine Analogues Incorporating Aminobenzene Sulfonamide, Aminoalcohol/Phenol, Piperazine, Chalcone, or Stilbene Motifs. *Molecules*. Basel: MDPI, 2020, roč. 25, č. 8, s. 1-15. ISSN 1420-3049. Dostupné z: <https://dx.doi.org/10.3390/molecules25081787>.

Anxiety in Duckweed — Metabolism and Effect of Diazepam on Lemna minor [Typ výsledku: Jimp]

LAMACZOVÁ, Adéla, Tomáš MALINA, Klára ODEHNALOVÁ, Radka OPATŘILOVÁ, Petra PŘIBILOVÁ, Štěpán ZEZULKA, Blahoslav MARŠÁLEK a Eliška MARŠÁLKOVÁ. Anxiety in Duckweed — Metabolism and Effect of Diazepam on Lemna minor. *WATER*. Basel: MDPI, 2022, roč. 14, č. 9, s. 1-12. ISSN 2073-4441. Dostupné z: <https://dx.doi.org/10.3390/w140914>

Rapid AOP Method for Estrogens Removal via Persulfate Activated by Hydrodynamic Cavitation [Typ výsledku: Jimp]

PŘIBILOVA, Petra, Klára ODEHNALOVA, Pavel RUDOLF, Frantisek POCHYLY, Stepan ZEZULKA, Eliska MARSALKOVA, Radka OPATŘILOVÁ a Blahoslav MARSALEK. Rapid AOP Method for Estrogens Removal via Persulfate Activated by Hydrodynamic Cavitation. *WATER*. Basel: MDPI, 2022, roč. 14, č. 23, s. 1-13. ISSN 2073-4441. Dostupné z: <https://dx.doi.org/10.3390/w14233816>.

doc. RNDr. Bc. Jiří Pazourek, Ph.D.**Rapid HPLC Method for Determination of Isomaltulose in the Presence of Glucose, Sucrose, and Maltodextrins in Dietary Supplements [Typ výsledku: Jimp]**

CRHA, Tomáš a Jiří PAZOUREK. Rapid HPLC Method for Determination of Isomaltulose in the Presence of Glucose, Sucrose, and Maltodextrins in Dietary Supplements. *FOODS*. BASEL: MDPI, 2020, roč. 9, č. 9, s. 1-20. ISSN 2304-8158. Dostupné z: <https://dx.doi.org/10.3390/foods9091164>.

Extension of the Internal Standard Method for Determination of Thermodynamic Acidity Constants of Compounds Sparingly Soluble in Water by Capillary Zone Electrophoresis [Typ výsledku: Jimp]

PAZOUREK, Jiří, Lucie NYTROVÁ a Klára ODEHNALOVÁ. Extension of the Internal Standard Method for Determination of Thermodynamic Acidity Constants of Compounds Sparingly Soluble in Water by Capillary Zone Electrophoresis. *ACS Omega*. WASHINGTON: AMER CHEMICAL SOC, 2021, roč. 7, č. 1, s. 1477-1482. ISSN 2470-1343. Dostupné z: <https://dx.doi.org/10.1021/acsomega.1c06224>.

HILIC Separation Methods on Poly-Hydroxyl Stationary Phases for Determination of Common Saccharides with Evaporative Light-Scattering Detector and Rapid Determination of Isomaltulose in Protein-Rich Food Supplements [Typ výsledku: Jimp]

CRHA, Tomas, Grace F ODEDINA a Jiří PAZOUREK. Hilic Separation Methods on Poly-Hydroxyl Stationary Phases for Determination of Common Saccharides with Evaporative Light-Scattering Detector and Rapid Determination of Isomaltulose in Protein-Rich Food Supplements. *SEPARATIONS*. SWITZERLAND: MDPI, 2024, roč. 11, č. 2, 16 s. ISSN 2297-8739. Dostupné z: <https://dx.doi.org/10.3390/separations11020045>.

Indol-2-Carboxylic Acid Esters Containing N-Phenylpiperazine Moiety - Preparation and Cholinesterase-inhibiting Activity [Typ výsledku: Jimp]

PADRTOVÁ, Tereza, Pavlína MARVANOVÁ, Renata KUBÍNOVÁ, Jozef CSÖLLEI, Oldřich FARSA, Tomáš GONĚC, Klára ODEHNALOVÁ, Radka OPATŘILOVÁ, Jiří PAZOUREK, Alice SYCHROVÁ, Karel ŠMEJKAL a Petr MOKRÝ. Indol-2-Carboxylic Acid Esters Containing N-Phenylpiperazine Moiety - Preparation and Cholinesterase-inhibiting

Activity. Current organic synthesis. Sharjah: Bentham Science Publ Ltd, 2020, roč. 17, č. 7, s. 576-587. ISSN 1570-1794. Dostupné z: <https://dx.doi.org/10.2174/1570179417666200619132218>.

Rapid HPLC method for monitoring of lactulose production with a high yield [Typ výsledku: Jimp]

PAZOUREK, Jiří. Rapid HPLC method for monitoring of lactulose production with a high yield. Carbohydrate Research. Elsevier, 2019, roč. 484, č. 107773, s. 1-5. ISSN 0008-6215. Dostupné z: <https://dx.doi.org/10.1016/j.carres.2019.107773>.

MVDr. Peter Scheer, Ph.D.

Thrombus Imaging Using 3D Printed Middle Cerebral Artery Model and Preclinical Imaging Techniques: Application to Thrombus Targeting and Thrombolytic Studies [Typ výsledku: Jimp]

WUNSCHOVA, A.V., A. NOVOBILSKY, Jana HLOŽKOVÁ, Peter SCHEER, H. PETROKOVA, R. JIRIK, P. KULICH, E. BARTHELDYOVA, F. HUBATKA, V. JONAS, R. MIKULIK, P. MALY, J. TURANEK a J. MASEK. Thrombus Imaging Using 3D Printed Middle Cerebral Artery Model and Preclinical Imaging Techniques: Application to Thrombus Targeting and Thrombolytic Studies. European Journal of Pharmaceutics and Biopharmaceutics. BASEL: Elsevier, 2020, roč. 12, č. 12, s. 1-16. ISSN 0939-6411. Dostupné z: <https://dx.doi.org/10.3390/pharmaceutics12121207>.

BIOIMAGING OF ELEMENTS AND PROTEINS BY LA-ICP-MS IN MEDICINE AND PHARMACEUTICAL RESEARCH [Typ výsledku: k]

KUCHYNKA, Michaela, Marcela VLČNOVSKÁ, Jana HLOŽKOVÁ, Peter SCHEER, Radka OPATŘILOVÁ, Markéta VACULOVÍČOVÁ, Viktor KANICKÝ, Michal MASARIK a Tomáš VACULOVIC. BIOIMAGING OF ELEMENTS AND PROTEINS BY LA-ICP-MS IN MEDICINE AND PHARMACEUTICAL RESEARCH. In ESAS 2022. 2022. ISBN 978-80-88195-41-2.

IMAGING OF ELEMENTS AND PROTEINS IN BIOLOGICAL TISSUES: MEDICAL AND PHARMACEUTICAL APPLICATIONS [Typ výsledku: k]

KUCHYNKA, Michaela, Peter SCHEER, Jana HLOŽKOVÁ, Marcela VLČNOVSKÁ, Radka OPATŘILOVÁ, Viktor KANICKÝ, Michal MASARIK, Tomáš VACULOVIC a Tereza PADRTOVÁ. IMAGING OF ELEMENTS AND PROTEINS IN BIOLOGICAL TISSUES: MEDICAL AND PHARMACEUTICAL APPLICATIONS. 2022. ISBN 978-80-280-0110-0.

IMPACT OF CALCIUM INFUSION ON THE INCIDENCE OF VENTRICULAR FIBRILLATION IN COMPARISON WITH CATECHOLAMINE-INDUCED VENTRICULAR FIBRILLATION IN REPERFUSION PERIOD ON RAT HEART [Typ výsledku: k]

DAVUT AKSU, Ahmet, Jana HLOŽKOVÁ, Peter SCHEER a Eliška BRHELOVÁ. IMPACT OF CALCIUM INFUSION ON THE INCIDENCE OF VENTRICULAR FIBRILLATION IN COMPARISON WITH CATECHOLAMINE-INDUCED VENTRICULAR FIBRILLATION IN REPERFUSION PERIOD ON RAT HEART. In 49. pracovná konferencia Komisie experimentálnej kardiológie 2022. 2022.

Brief analysis of the frequency of use and spectrum of animal models in stroke research [Typ výsledku: J]

HLOŽKOVÁ, Jana, Peter SCHEER a Pavel SUCHÝ. Brief analysis of the frequency of use and spectrum of animal models in stroke research. CESKA A SLOVENSKA NEUROLOGIE A NEUROCHIRURGIE. 2019. Dostupné z: <https://dx.doi.org/10.14735/amcsnn2019274>.

doc. MVDr. Pavel Suchý, Ph.D.

Evaluation and comparison of structurally different cellulose-based hemostatic agents in a rat kidney model [Typ výsledku: Jimp]

PAPRSKÁROVÁ, Alice, Pavel SUCHÝ, Marta CHALUPOVÁ, L. MICHLOVSKA, Jarmila KLUSÁKOVÁ, T. SOPUCH a L. VOJTOVA. Evaluation and comparison of structurally different cellulose-based hemostatic agents in a rat kidney model. Cellulose. DORDRECHT: SPRINGER, 2021, roč. 28, č. 14, s. 9369-9382. ISSN 0969-0239. Dostupné z: <https://dx.doi.org/10.1007/s10570-021-04104-1>.

A synergistic effect of fibrous carboxymethyl cellulose with equine collagen improved the hemostatic properties of freeze-dried wound dressings [Typ výsledku: Jimp]

SEDLAR, M., K. KACVINSKA, Z. FOHLEROVA, D. IZSAK, Marta CHALUPOVÁ, Pavel SUCHÝ, M. DOHNALOVA, T. SOPUCH a L. VOJTOVA. A synergistic effect of fibrous carboxymethyl cellulose with equine collagen improved the hemostatic properties of freeze-dried wound dressings. Cellulose. DORDRECHT: SPRINGER, 2023, Neuveden., September, s. 1-19. ISSN 0969-0239. Dostupné z: <https://dx.doi.org/10.1007/s10570-023-05499-9>.

Olanzapine, but not haloperidol, exerts pronounced acute metabolic effects in the methylazoxymethanol rat model [Typ výsledku: Jimp]

HORSKÁ, Kateřina, Silje SKREDE, Jan KUČERA, Gabriela KUZMÍNOVÁ, Pavel SUCHÝ, Vincenzo MICALE a Jana RUDÁ. Olanzapine, but not haloperidol, exerts pronounced acute metabolic effects in the methylazoxymethanol rat model. CNS NEUROSCIENCE & THERAPEUTICS. HOBOKEN: WILEY, 2024, roč. 30, č. 2, s. 1-13. ISSN 1755-5930. Dostupné z: <https://dx.doi.org/10.1111/cns.14565>.

Composite Hemostatic Nonwoven Textiles Based on Hyaluronic Acid, Cellulose, and Etamsylate [Typ výsledku: Jimp]

SUCHÝ, Pavel, Alice PAPRSKÁROVÁ, Marta CHALUPOVÁ, Lucie MARHOLDOVA, Kristina NESPOROVA, Jarmila KLUSÁKOVÁ, Gabriela KUZMÍNOVÁ, Michal HENDRYCH a Vladimír VELEBNY. Composite Hemostatic Nonwoven Textiles Based on Hyaluronic Acid, Cellulose, and Etamsylate. Materials. ST ALBAN-ANLAGE: MDPI, 2020, roč. 13, č. 7, s. 1-14. ISSN 1996-1944. Dostupné z: <https://dx.doi.org/10.3390/ma13071627>.

Špeciálna toxikológia [Typ výsledku: B]

LEGÁTH, Jaroslav, Ľubomír LEGÁTH, Karel ŠMEJKAL, Vladimír PETROVIČ, Pavel SUCHÝ, Rastislav SABO, Marcel FALIS, Štefan MAZAN a Vladimír PETRILA. Špeciálna toxikológia. 2. vyd. Košice, SR: UVLF Košice, 2023, 380 s. ISBN 978-80-8077-783-8.

doc. PharmDr. Zdeňka Šklubalová, Ph.D.

OGADAH C. U., MRŠTNÁ, K., MATYSOVÁ, L., MÜLLERTZ, A., RADES, T., NIEDERQUELL, A., ŠKLUBALOVÁ, Z., VRANÍKOVÁ, B.: Comparison of the liquisolid technique and co-milling for loading of a poorly soluble drug in inorganic porous excipients. *Int. J. Pharm.* 2024, 650, 123702, <https://doi.org/10.1016/j.ijpharm.2023.123702>

MARUSHKA, J., BROKEŠOVÁ, J., OGADAH C. U., KAZEMI A., TEBBENS, J. D., ŠKLUBALOVÁ, Z.: Milling of pharmaceutical powder carrier excipients: Application of central composite design. *Adv. Pow. Tech.*, 2022, 33, 103881, ISSN: 0921-8831. <https://doi.org/10.1016/j.apt.2022.103881>

BROKEŠOVÁ, J., NIEDERQUELL, A., KUENTZ, M., ZÁMOSTNÝ, P., VRANÍKOVÁ, B., ŠKLUBALOVÁ, Z. Powder cohesion and energy to break an avalanche: can we address surface heterogeneity? *Int. J. Pharm.* 2022, 626, 122198. ISSN: 0378-5173. <https://doi.org/10.1016/j.ijpharm.2022.122198>

MARUSHKA, J.; HURYCHOVÁ, H.; ŠKLUBALOVÁ, Z.; TEBBENS, J. D. Flow equations for free-flowable particle fractions of sorbitol for direct compression: an exploratory multiple regression analysis of particle and orifice size influence. *Pharmaceutics* 2022, 14(8), 1653. ISSN: 1999-4923. <https://doi.org/10.3390/pharmaceutics14081653>

SVAČINOVÁ, P., MACHO, O., JAROLÍMOVÁ, Ž., KUENTZ, M., GABRIŠOVÁ, L., ŠKLUBALOVÁ, Z. Evaluation of gravitational consolidation of binary powder mixtures by modified Heckel equation. *Powder Technology* 408 (2022) 117729. ISSN: 0032-5910. <https://doi.org/10.1016/j.powtec.2022.117729>

prof. PharmDr. Karel Šmejkal, Ph.D.

Biological activity of Cannabis compounds: a modern approach to the therapy of multiple diseases [Typ výsledku: Jimp]

HELGMAN, Martin a Karel ŠMEJKAL. Biological activity of Cannabis compounds: a modern approach to the therapy of multiple diseases. *Phytochemistry reviews*. Dordrecht: Springer, 2021, Neuveden., October, s. 1-42. ISSN 1568-7767. Dostupné z: <https://dx.doi.org/10.1007/s11101-021-09777-x>.

Anti-breast cancer effects of phytochemicals: primary, secondary, and tertiary care [Typ výsledku: Jimp]

MAZURAKOVA, Alena, Lenka KOKLESOVA, Marek SAMEC, Erik KUDELA, Karol KAJO, Veronika SKUCIOVA, Sandra Hurta CSIZMAR, Veronika MESTANOVA, Martin PEC, Marian ADAMKOV, Raghad Khalid AL-ISHAQ, Karel ŠMEJKAL, Frank A GIORDANO, Dietrich BUSSELBERG, Kamil BIRINGER, Olga GOLUBNITSCHAJA a Peter KUBATKA. Anti-breast cancer effects of phytochemicals: primary, secondary, and tertiary care. *EPMA JOURNAL*. Cham: SPRINGER INT PUBL AG, 2022, roč. 13, č. 2, s. 315-334. ISSN 1878-5077. Dostupné z: <https://dx.doi.org/10.1007/s13167-022-00277-2>.

C-geranylated flavonoids from Paulownia tomentosa Steud. fruit as potential anti-inflammatory agents [Typ výsledku: Jimp]

MOLČANOVÁ, Lenka, Jakub TREML, Veronika BREZANI, Petr MARSIK, Sebnem KURHAN, Zdenek TRAVNICEK, Pavel UHRIN a Karel ŠMEJKAL. C-geranylated flavonoids from Paulownia tomentosa Steud. fruit as potential anti-inflammatory agents. *JOURNAL OF ETHNOPHARMACOLOGY*. CLARE: ELSEVIER IRELAND LTD, 2022, roč. 296, October, s. 1-14. ISSN 0378-8741. Dostupné z: <https://dx.doi.org/10.1016/j.jep.2022.115509>.

Multiple In vitro biological effects of phenolic compounds from Morus alba root bark [Typ výsledku: Jimp]

ČULENOVÁ, Marie, Alice SYCHROVÁ, S. T. S. HASSAN, K. BERCHOVA-BIMOVA, P. SVOBODOVA, A. HELCLOVA, H. MIČHOVA, J. HOSEK, H. VASILEV, Pavel SUCHÝ, Gabriela KUZMÍNOVÁ, Emil ŠVAJDLENKA, Jan GAJDZIOK, Alois ČÍŽEK, Václav SUCHÝ a Karel ŠMEJKAL. Multiple In vitro biological effects of phenolic compounds from Morus alba root bark. *JOURNAL OF ETHNOPHARMACOLOGY*. CLARE: ELSEVIER IRELAND LTD, 2020, roč. 248, č. 112296, s. 1-12. ISSN 0378-8741. Dostupné z: <https://dx.doi.org/10.1016/j.jep.2019.112296>.

Therapeutic potential of prenylated stilbenoid macasiamenene F through its anti-inflammatory and cytoprotective effects on LPS-challenged monocytes and microglia [Typ výsledku: Jimp]

LELÁKOVÁ, Veronika, Sophie BÉRAUD-DUFOUR, Jan HOŠEK, Karel ŠMEJKAL, Vilailak PRACHYAWARAKORN, Phanruethai PAILEE, Catherine WIDMANN, Jiří VÁCLAVÍK, Thierry COPPOLA, Jean MAZELLA, Nicolas BLONDEAU a Catherine HEURTEAUX. Therapeutic potential of prenylated stilbenoid macasiamenene F through its anti-inflammatory and cytoprotective effects on LPS-challenged monocytes and microglia. *JOURNAL OF ETHNOPHARMACOLOGY*. CLARE: ELSEVIER IRELAND LTD, 2020, roč. 263, č. 263, s. 1-14. ISSN 0378-8741. Dostupné z: <https://dx.doi.org/10.1016/j.jep.2020.113147>.

doc. PharmDr. Martin Štěrba, Ph.D.

Veronika Keresteš, Jan Kubeš, Lenka Applová, Petra Kollárová, Olga Lenčová-Popelová, Luliia Melnikova, Galina Karabanovich, Mushtaq M Khazeem, Hana Bavlovič-Piskáčková, Petra Štěrbová-Kovaříková, Caroline A Austin, Jaroslav Roh, Martin Štěrba, Tomáš Šimůnek, Anna Jirkovská, Exploring the effects of topoisomerase II inhibitor XK469 on anthracycline cardiotoxicity and DNA damage, *Toxicological Sciences*, Volume 198, Issue 2, April 2024, Pages 288 — 302, <https://doi.org/10.1093/toxsci/kfae008>

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Zuzana Pokorná, Petra Kollárová-Brázdová, Olga Lenčová-Popelová, Eduard Jirkovský, Jan Kubeš, Yvona Mazurová, Michaela Adamcová, Magdalena Holečková, Vladimír Palička, Tomáš Šimůnek, Martin Štěrba; Primary prevention of chronic anthracycline cardiotoxicity with ACE inhibitor is temporarily effective in rabbits, but benefits wane in post-treatment follow-up. *Clin Sci (Lond)* 14 January 2022; 136 (1): 139 — 161; DOI: <https://doi.org/10.1042/CS20210836>

Anna Jirkovská, Galina Karabanovich, Jan Kubeš, Veronika Skalická, Iuliia Melnikova, Jan Korábečný, Tomáš Kučera, Eduard Jirkovský, Lucie Nováková, Hana Bavlovič Piskáčková, Josef Škoda, Martin Štěrba, Caroline A. Austin, Tomáš Šimůnek, and Jaroslav Roh. Structure — Activity Relationship Study of Dextrazoxane Analogues Reveals ICRF-193 as the Most Potent Bisdioxopiperazine against Anthracycline Toxicity to Cardiomyocytes Due to Its Strong Topoisomerase II β Interactions. *Journal of Medicinal Chemistry* 2021 64 (7), 3997-4019; DOI: 10.1021/acs.jmedchem.0c02157

Petra Kollárová-Brázdová, Anna Jirkovská, Galina Karabanovich, Zuzana Pokorná, Hana Bavlovič Piskáčková, Eduard Jirkovský, Jan Kubeš, Olga Lenčová-Popelová, Yvona Mazurová, Michaela Adamcová, Veronika Skalická, Petra Štěrbová-Kovaříková, Jaroslav Roh, Tomáš Šimůnek and Martin Štěrba. Investigation of Structure-Activity Relationships of Dextrazoxane Analogs Reveals Topoisomerase II β Interaction as a Prerequisite for Effective Protection against Anthracycline Cardiotoxicity. *Journal of Pharmacology and Experimental Therapeutics* June 2020, 373 (3) 402-415; DOI: <https://doi.org/10.1124/jpet.119.264580>

PharmDr. Jakub Tremel, Ph.D.

Recent Advances in Metabolic Pathways of Sulfate Reduction in Intestinal Bacteria [Typ výsledku: Jimp]

KUSHKEYVYCH, Ivan, Jiří CEJNAR, Jakub TREML, Dani DORDEVIĆ, Peter KOLLÁR a Monika VÍTĚZOVÁ. Recent Advances in Metabolic Pathways of Sulfate Reduction in Intestinal Bacteria. *Cells*. Basel: MDPI, 2020, roč. 9, č. 3, s. 1-16. ISSN 2073-4409. Dostupné z: <https://dx.doi.org/10.3390/cells9030698>.

Natural Products-Derived Chemicals: Breaking Barriers to Novel Anti-HSV Drug Development [Typ výsledku: Jimp]

TREML, Jakub, Markéta GAZDOVÁ, Karel ŠMEJKAL, M. SUDOMOVA, P. KUBATKA a S. T. S. HASSAN. Natural Products-Derived Chemicals: Breaking Barriers to Novel Anti-HSV Drug Development. *Viruses-Basel*. Basel, Switzerland: MDPI AG, 2020, roč. 12, č. 2, s. 1-42. ISSN 1999-4915. Dostupné z: <https://dx.doi.org/10.3390/v12020154>.

Edible Films from Carrageenan/Orange Essential Oil/Trehalose-Structure, Optical Properties, and Antimicrobial Activity [Typ výsledku: Jimp]

JANCIKOVA, S., D. DORDEVIC, P. SEDLACEK, Marcela NEJEZCHLEBOVÁ, Jakub TREML a B. TREMLLOVA. Edible Films from Carrageenan/Orange Essential Oil/Trehalose-Structure, Optical Properties, and Antimicrobial Activity. *Polymers*. Basel: MDPI, 2021, roč. 13, č. 3, s. 1-19. ISSN 2073-4360. Dostupné z: <https://dx.doi.org/10.3390/polym13030332>.

Incorporation of Natural Blueberry, Red Grapes and Parsley Extract By-Products into the Production of Chitosan Edible Films [Typ výsledku: Jimp]

DORDEVIC, S., D. DORDEVIC, P. SEDLACEK, M. KALINA, K. TESIKOVA, B. ANTONIC, B. TREMLLOVA, Jakub TREML, Marcela NEJEZCHLEBOVÁ, L. VAPENKA, A. RAJCHL a Monika BULÁKOVÁ. Incorporation of Natural Blueberry, Red Grapes and Parsley Extract By-Products into the Production of Chitosan Edible Films. *Polymers*. Basel: MDPI, 2021, roč. 13, č. 19, s. 1-21. ISSN 2073-4360. Dostupné z: <https://dx.doi.org/10.3390/polym13193388>.

Direct and Indirect Antioxidant Effects of Selected Plant Phenolics in Cell-Based Assays [Typ výsledku: Jimp]

TREML, Jakub, P. VEČEŘOVÁ, Petra HERCZOGOVA a Karel ŠMEJKAL. Direct and Indirect Antioxidant Effects of Selected Plant Phenolics in Cell-Based Assays. *Molecules*. Basel: MDPI, 2021, roč. 26, č. 9, s. 1-15. ISSN 1420-3049. Dostupné z: <https://dx.doi.org/10.3390/molecules26092534>.

Mgr. Ing. Jiří Václavík, Ph.D.

Parallel in vitro and in silico investigations into anti-inflammatory effects of non-prenylated stilbenoids [Typ výsledku: Jimp]

LELÁKOVÁ, Veronika, Karel ŠMEJKAL, K. JAKUBCZYK, O. VESELY, P. LANDA, Jiří VÁCLAVÍK, Pavel BOBÁL, Hana PÍŽOVÁ, V. TEMML, T. STEINACHER, D. SCHUSTER, S. GRANICA, Z. HANAKOVA a J. HOSEK. Parallel in vitro and in silico investigations into anti-inflammatory effects of non-prenylated stilbenoids. *Food Chemistry*. Oxford, UK: Elsevier Science, 2019, roč. 285, s. 431-440. ISSN 0308-8146. Dostupné z: <https://dx.doi.org/10.1016/j.foodchem.2019.01.128>.

Anticholinesterase Activity of Methanolic Extract of Amorpha fruticosa Flowers and Isolation of Rotenoids and Putrescine and Spermidine Derivatives [Typ výsledku: Jimp]

JANKOVSKÁ, Dagmar, Nikol JURČOVÁ, Renata KUBÍNOVÁ, Jiří VÁCLAVÍK, Emil ŠVAJDLENKA, Anna MASCELLANI, Petr MARSÍK, Kateřina BOUZKOVÁ a Milan MALANÍK. Anticholinesterase Activity of Methanolic Extract of Amorpha fruticosa Flowers and Isolation of Rotenoids and Putrescine and Spermidine Derivatives. *PLANTS-BASEL. BASEL*: MDPI, 2024, roč. 13, č. 9, s. Neuvedeno, 10 s. ISSN 2223-7747. Dostupné z: <https://dx.doi.org/10.3390/plants13091181>.

Therapeutic potential of prenylated stilbenoid macasiamenene F through its anti-inflammatory and cytoprotective effects on LPS-challenged monocytes and microglia [Typ výsledku: Jimp]

LELÁKOVÁ, Veronika, Sophie BÉRAUD-DUFOUR, Jan HOŠEK, Karel ŠMEJKAL, Vilailak PRACHYAWARAKORN, Phanruethai PAILEE, Catherine WIDMANN, Jiří VÁCLAVÍK, Thierry COPPOLA, Jean MAZELLA, Nicolas BLONDEAU a Catherine HEURTEAUX. Therapeutic potential of prenylated stilbenoid macasiamenene F through its anti-inflammatory and cytoprotective effects on LPS-challenged monocytes and microglia. *JOURNAL OF ETHNOPHARMACOLOGY. CLARE: ELSEVIER IRELAND LTD*, 2020, roč. 263, č. 263, s. 1-14. ISSN 0378-8741. Dostupné z: <https://dx.doi.org/10.1016/j.jep.2020.113147>.

Five New Tamarixetin Glycosides from Astragalus thracicus Griseb. Including Some Substituted with the Rare 3-Hydroxy-3-methylglutaric Acid and Their Collagenase Inhibitory Effects In Vitro [Typ výsledku: Jimp]

VASILEV, Hristo, Karel ŠMEJKAL, Sabína JUSKOVÁ, Jiří VÁCLAVÍK a Jakub TREML. Five New Tamarixetin Glycosides from Astragalus thracicus Griseb. Including Some Substituted with the Rare 3-Hydroxy-3-methylglutaric Acid and Their Collagenase Inhibitory Effects In Vitro. *ACS Omega*. WASHINGTON: American Chemical Society, 2024, roč. 9, č. 16, s. 18023-18031. ISSN 2470-1343. Dostupné z: <https://dx.doi.org/10.1021/acsomega.3c09677>.

Cholinesterase and Tyrosinase Inhibitory Potential and Antioxidant Capacity of *Lysimachia verticillaris* L. and Isolation of the Major Compounds [Typ výsledku: Jimp]

OZGEN, U., S. O. SENER, Karel ŠMEJKAL, Jiří VÁCLAVÍK, D. F. SENOL, Orhan I ERDOGAN, Emil ŠVAJDLENKA, A. C. GOREN a Milan ŽEMLIČKA. Cholinesterase and Tyrosinase Inhibitory Potential and Antioxidant Capacity of *Lysimachia verticillaris* L. and Isolation of the Major Compounds. *TURKISH JOURNAL OF PHARMACEUTICAL SCIENCES*. CANKAYA-ANKARA: TURKISH PHARMACISTS ASSOC, 2020, roč. 17, č. 5, s. 528-534. ISSN 1304-530X. Dostupné z: <https://dx.doi.org/10.4274/tjps.galenos.2019.71598>.

prof. PharmDr. Mgr. David Vetchý, Ph.D.**Structure, dynamics, and functional properties of hybrid alginate-pectin gels dually crosslinked by Ca²⁺ and Zn²⁺ ions designed as a delivery device for self-emulsifying systems for lipophilic phytotherapeutics [Typ výsledku: Jimp]**

URBANOVA, Martina, Jan MACKŮ, Kateřina KUBOVÁ, Jakub VYSLOUŽIL, Jan MUSELÍK, Miroslav SLOUF, Ivana SEDENKOVA, Olga KOCKOVA, Larisa JANISOVA, Josef MASEK, Eliska MASKOVA, Adam NOVOBILSKY, Martina PARENICOVA, Rafal KONEFAL, Jiri CZERNEK, David VETCHÝ, Miroslava PAVELKOVÁ a Jiri BRUS. Structure, dynamics, and functional properties of hybrid alginate-pectin gels dually crosslinked by Ca²⁺ and Zn²⁺ ions designed as a delivery device for self-emulsifying systems for lipophilic phytotherapeutics. *Food Hydrocolloids*. Oxford: Elsevier Science, 2024, roč. 150, May 2024, s. 1-16. ISSN 0268-005X. Dostupné z: <https://dx.doi.org/10.1016/j.foodhyd.2023.109693>.

Utilization of Pharmaceutical Technology Methods for the Development of Innovative Porous Metasilicate Pellets with a Very High Specific Surface Area for Chemical Warfare Agents Detection [Typ výsledku: Jimp]

ZEMAN, Jiří, Sylvie PAVLOKOVÁ, David VETCHÝ, Adam STAŇO, Zdeněk MORAVEC, Lukáš MATĚJOVSKÝ a Vladimír PITSCHMANN. Utilization of Pharmaceutical Technology Methods for the Development of Innovative Porous Metasilicate Pellets with a Very High Specific Surface Area for Chemical Warfare Agents Detection. *Pharmaceutics*. BASEL: MDPI, 2021, roč. 13, č. 11, s. 1-15. ISSN 1999-4923. Dostupné z: <https://dx.doi.org/10.3390/pharmaceutics13111860>.

Bilayer mucoadhesive buccal films with prolonged release of ciclopirox olamine for the treatment of oral candidiasis: In vitro development, ex vivo permeation testing, pharmacokinetic and efficacy study in rabbits [Typ výsledku: Jimp]

GAJDOŠOVÁ, Markéta, David VETCHÝ, Jan MUSELÍK, Jan GAJDZIOK, Jan JUŘICA, M. VETCHÁ, K. HAUPTMAN a V. JEKL. Bilayer mucoadhesive buccal films with prolonged release of ciclopirox olamine for the treatment of oral candidiasis: In vitro development, ex vivo permeation testing, pharmacokinetic and efficacy study in rabbits. *International Journal of Pharmaceutics*. AMSTERDAM: ELSEVIER SCIENCE BV, 2021, roč. 592, JAN 5 2021, s. 1-12. ISSN 0378-5173. Dostupné z: <https://dx.doi.org/10.1016/j.ijpharm.2020.120086>.

Interaction Pathways and Structure-Chemical Transformations of Alginate Gels in Physiological Environments [Typ výsledku: Jimp]

URBANOVA, M., M. PAVELKOVA, J. CZERNEK, K. KUBOVA, J. VYSLOUZIL, A. PECHOVA, D. MOLINKOVA, Jan VYSLOUŽIL, D. VETCHY a J. BRUS. Interaction Pathways and Structure-Chemical Transformations of Alginate Gels in Physiological Environments. *Biomacromolecules*. Washington: American Chemical Society, 2019, roč. 20, č. 11, s. 4158-4170. ISSN 1525-7797. Dostupné z: <https://dx.doi.org/10.1021/acs.biomac.9b01052>.

Unique coated neusilin pellets with a more distinct and fast visual detection of nerve agents and other cholinesterase inhibitors [Typ výsledku: Jimp]

ZEMAN, Jiří, David VETCHÝ, Sylvie PAVLOKOVÁ, Aleš FRANC a Vladimír PITSCHMANN. Unique coated neusilin pellets with a more distinct and fast visual detection of nerve agents and other cholinesterase inhibitors. *Journal of Pharmaceutical and Biomedical Analysis*. Elsevier, 2020, roč. 179, February, s. 1-9. ISSN 0731-7085. Dostupné z: <https://dx.doi.org/10.1016/j.jpba.2019.113004>.

PharmDr. Jakub Vysloužil, Ph.D.**Assessment of Antimicrobial, Antiviral and Cytotoxic Potential of Alginate Beads Cross-Linked by Bivalent Ions for Vaginal Administration [Typ výsledku: Jimp]**

PAVELKOVÁ, Miroslava, Jakub VYSLOUŽIL, Kateřina KUBOVÁ, Sylvie PAVLOKOVÁ, D. MOLINKOVA, V. CELER, A. PECHOVA, J. MASEK a David VETCHÝ. Assessment of Antimicrobial, Antiviral and Cytotoxic Potential of Alginate Beads Cross-Linked by Bivalent Ions for Vaginal Administration. *Pharmaceutics*. BASEL: Elsevier, 2021, roč. 13, č. 2, s. 1-20. ISSN 0939-6411. Dostupné z: <https://dx.doi.org/10.3390/pharmaceutics13020165>.

The Acute Immune Responses of the Common Carp *Cyprinus carpio* to PLGA Microparticles-The Interactions of a Teleost Fish with a Foreign Material [Typ výsledku: Jimp]

MONTERO, Ruth, Justin Tze Ho CHAN, Bernd KOELLNER, Roman KUČHTA, Jakub VYSLOUŽIL, Peter PODHOREC, Astrid Sibylle HOLZER a Tomas KORYTAR. The Acute Immune Responses of the Common Carp *Cyprinus carpio* to PLGA Microparticles-The Interactions of a Teleost Fish with a Foreign Material. *Biomolecules*. Basel: MDPI, 2022, roč. 12, č. 2, s. 1-17. ISSN 2218-273X. Dostupné z: <https://dx.doi.org/10.3390/biom12020326>.

Exploration of Neusilin® US2 as an Acceptable Filler in HPMC Matrix Systems—Comparison of Pharmacopoeial and Dynamic Biorelevant Dissolution Study [Typ výsledku: Jimp]

BÍLIK, Tomáš, Jakub VYSLOUŽIL, Martina NAISEROVÁ, Jan MUSELÍK, Miroslava PAVELKOVÁ, Josef MAŠEK, D. ČOPOVÁ a Kateřina KUBOVÁ. Exploration of Neusilin® US2 as an Acceptable Filler in HPMC Matrix Systems—Comparison of Pharmacopoeial and Dynamic Biorelevant Dissolution Study. *Pharmaceutics*. BASEL: MDPI, 2022, roč. 14, č. 1, s. 1-18. ISSN 1999-4923. Dostupné z: <https://dx.doi.org/10.3390/pharmaceutics14010127>.

Effects of gonadotropin-releasing hormone agonist administered in microparticles on sperm quality and quantity, and plasma sex steroid levels in northern pike [Typ výsledku: Jimp]

KNOWLES, J., S. BORYSHPOLETS, V. KHOLODNYI, D. RAHI, Jakub VYSLOUŽIL, Jan MUSELÍK, V. STEJSKAL, J. KOURIL a P. PODHOREC. Effects of gonadotropin-releasing hormone agonist administered in microparticles on sperm quality and quantity, and plasma sex steroid levels in northern pike. *ANIMAL*. Amsterdam: Elsevier, 2022, roč. 16, č. 1, s. 1-8. ISSN 1751-7311. Dostupné z: <https://dx.doi.org/10.1016/j.animal.2021.100430>.

Matrix Vaginal Rings for Female Dogs-Effect of Altering Dimensions on Mechanical Properties and Dissolution Characteristics, and In vivo Safety Study [Typ výsledku: Jimp]

NOVÁKOVÁ TKADLEČKOVÁ, Veronika, V. PITRONOVA, Kateřina KUBOVÁ, Sylvie PAVLOKOVÁ, Jan ELBL, R. NOVOTNY, David VETCHÝ a Jakub VYSLOUŽIL. Matrix Vaginal Rings for Female Dogs-Effect of Altering Dimensions on Mechanical Properties and Dissolution Characteristics, and In vivo Safety Study. *AAPS PHARMSCITECH*. NEW YORK: SPRINGER, 2020, roč. 21, č. 6, s. 1-12. ISSN 1530-9932. Dostupné z: <https://dx.doi.org/10.1208/s12249-020-01770-5>.