

22nd International Congress PHYTOPHARM 2018
Wädenswil (Horgen), Switzerland, 25-27 June, 2018



Zürich University
of Applied Sciences



Life Sciences and
Facility Management

Institute of
Chemistry and Biotechnology

XXIInd International Congress

"Phytopharm 2018"



June 25 - 27, 2018
Horgen, Switzerland
www.phytopharm2018.ch

CONGRESS VENUE

Seminar Hotel Bocken
Bockenweg 4
CH-8810 Horgen
www.bocken.ch

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WELCOME

Dear participants, dear colleagues!

As the two chairs of the Organizing Committee from Russia and Switzerland of the 22th International Congress PHYTOPHARM 2018, we are pleased to welcome you to Horgen and ZHAW Wädenswil!

Ever since the first Phytopharm conference in 1990, it has become one of the important events of the year in Phytopharmaceutical Science, aiming to present interesting, state-of-the-art research relevant to professionals working in various fields of herbal medicinal plants and natural product research, and to foster networking and collaboration across the globe and building bridges between East and West. This year, participants from 41 countries, have accepted our invitation and have come to Switzerland.

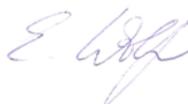
The scientific program of PHYTOPHARM covers natural product research from phytochemical studies, safety, efficacy and quality aspects until phytotherapeutic and other health related applications. The aim of the congress is to serve as a forum for discussions on trends, and the latest results, and to exchange ideas relating to phytochemical analysis, ethnopharmacology, TCM and Tibetan medicine, pharmacology and clinical trials of natural products as well as biotechnology.

In total, 105 posters, 15 plenary, and 47 short lectures will be presented during the three days of the congress. In addition to plenary lectures – 3 parallel sessions will allow an appreciable number of participants to present results in oral talks – featuring one special young research session each day. The poster sessions at central time frames within the congress will also provide an opportunity for scientific discussions. The posters are displayed throughout the whole conference.

Many people have contributed in the preparation and the organization of this congress. Especially, we want to thank the members of the local organizing committee as well as many team members from St. Petersburg Institute of Pharmacy and ZHAW Wädenswil for their great engagement. Also, the members of the scientific committee are highly acknowledged. Special thanks go to our supporters and exhibitors for their financial contribution.



Prof. Valery Makarov
*Institute of Pharmacy,
St. Petersburg, Russia*



Dr. Evelyn Wolfram
*Phytopharmacy & Natural Products
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36.	Vasilii Ivlev, Sergey Goryainov, Gennady Kalabin, Rimma Abramovich, Olga Potanina	Screening of herbal medicines and dietary supplements for synthetic adulterants
37.	Mingzhi Su, Changhao Zhao, <u>Jee H. Jung</u>	Anti-biofilm effect of viriditoxin on bacterial pathogens
38.	<u>Olaf Kelber</u> , Karen Nieber, Karin Kraft	Safety assessment of herbal products: Common pitfalls
39.	Fink C, <u>Olaf Kelber</u> , Sabine Rabini, Ahmed Madisch	Mechanisms of action of STW 5 in IBS
40.	Sabine Rabini, Manfred Wargenau, Vincenzo Stanghellini	Functional dyspepsia: STW 5 effective in multiple symptoms
41.	Olaf Kelber, Karen Nieber	Natural products and the liver: From HILI to hepatoprotection
42.	Olaf Kelber, S. Verjee, Eva Gorgus, Dieter Schrenk, Karen Nieber	Ethanol in medicines for children: Food more relevant than phytomedicines
43.	<u>Cristina D. Kelemen</u> , Ivo Daskocil, Johana Rondevaldova, Doru Pamfil and Ladislav Kokoska	In vitro antioxidant and anti-proliferative activity of Ranunculaceae species from Romania
44.	<u>Mohamed T. Khayyal</u> , Mona Abdel-Tawab, Jan Frank, Dariush Behnam, Walaa El-Sabbagh, Rania El-Hazek	Enhancement of the chronic anti-inflammatory activity of curcumin through micellar formulation: Further potentiation through combination with Boswellia and Xanthohumol
45.	<u>Mohamed T. Khayyal</u> , Matthias H. Kreuter, Sabine Anagnostou, Michael Kemmler, Peter Altmann, Mona A. El-Ghazaly, Doaa H. Abdel-Naby	A specially formulated chamomile extract protects against radiation-induced intestinal mucositis
46.	Kitaek Kim, Min-Hwan Kim, Ju-Hwan Park, <u>Dae-Duk Kim</u>	Microemulsion for topical delivery of 20(S)-protopanaxadiol
47.	Youjung Lee, Seoyoung Kim, Beodul Yang, Jung_Hoon Kim, <u>Hyungwoo Kim</u>	Anti-inflammatory effects of <i>Brassica oleracea</i> L. var. capitata in mice with contact dermatitis
48.	<u>Yon-Suk Kim</u> , Xin-Dong, Woen-Bin Shin, Jin-Su Park, Pyo-Jam Park	Enhanced-immune effects of <i>Pueraria lobate</i> flower extracts through MAPK signaling pathway in RAW264.7 cells
49.	<u>Klemper A.V.</u>	Collection of medicinal raw materials of pharmacognosy department
50.	<u>Rita Könye</u> , Samuel Peter, Szabolcs Béni, Imre Boldizsár, Evelyn Wolfram, Kalina Danova	Flavonoid profile of field and biotechnologically derived Hypericum species

tract: gastritis, enterocolitis, irritable bowel syndrome, gastric ulcer, and duodenal ulcer. *C. recutita* oil extract manufactured by Moscow Pharmaceutical Factory CJSC is a registered Russian medicinal preparation. The efficacy and safety of this preparation was studied in preclinical and clinical trials. Studies have revealed a pronounced anti-ulcer activity of the medicinal product. Its activity is comparable to the efficacy of such medicinal products as sea buckthorn oil, vicalin, romazulan and omeprazole. The anti-inflammatory effect of the medicinal product was tested in the tests on rats with exudative inflammation (carrageenan oedema). The preparation showed potent antibactericidal activity against *Helicobacter pylori*.

The clinical study was done on 90 patients according to the protocol "Open-label, randomised study of the efficacy and safety of the medicinal product Chamomilla extract in the treatment of chronic gastroduodenitis,

gastric ulcer, and duodenal ulcer" (III phase). Studies were carried out in accordance with the requirements of Good Clinical Practice (GCP). Feasibility of using the Chamomilla extract in treatment and prevention of recurrence of gastroduodenal diseases was confirmed in the studies.

Modern antispasmodics have in its range the combined antispasmodic herbal medicinal product Gastroguttal in the form of oral drops (manufactured by MosFarma) used in diseases of the gastrointestinal tract accompanied by spasms of smooth muscles, including hypo- and anacid gastritis, chronic colitis, chronic cholecystitis, biliary dyskinesia. Scientific data on the composition (valerian, wormwood, belladonna, peppermint) and many years of experience in clinical practice of Gastroguttal make it possible to declare high efficacy and safety of this antispasmodic agent and to recommend it for use in practical gastroenterology.

FLAVONOID PROFILE OF FIELD AND BIOTECHNOLOGICALLY DERIVED *HYPERICUM* SPECIES

© Rita Könye^{1,2,3}, Samuel Peter¹, Szabolcs Béni², Imre Boldizsár³, Evelyn Wolfram¹, Kalina Danova⁴

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Introduction: *Hypericum perforatum* L. is one of the most frequently applied evidence-based phytotherapeutics of today's medicine. The broad range of its biologically active compounds, such as phenylpropane-derivatives, flavonoids, naphthodianthrones and phloroglucinol-derivatives, may be involved in its activities as a multi-compound system. Although its phytochemical profile is widely investigated, the secondary metabolite production of other species is less studied. Our recent result on *Hypericum* species confirmed the flavonoid content varied among the *in vitro* derived samples, but for clear statements further studies were needed [1].

Aim of the Study: The main goal was to characterize the flavonoid and organic acids content of the well-known *H. perforatum* and the less studied species – *H. calycinum* L., *H. rumeliacum* Boiss. and *H. richeri* Vill., as well to compare field cultivated and biotechnologically derived *Hypericum* plant material.

Materials and Methods: Methanolic extract of *ex situ* *H. perforatum* and *H. calycinum*, as well as 4 months old biotechnologically derived *H. perforatum*, *H. calycinum*, *H. richeri* and *H. rumeliacum* samples were analysed using a recently established UHPLC-DAD-MS method. Eighteen reference substances were used to identify the presence of flavonoids, flavonoid-glycosides and organic acids in the samples.

References:

[1] Könye, R. et al. *Planta Medica*. 2015;81 - PW_194.

Results and Discussion: The result revealed the presence of eight of the eighteen standard compounds belonging to flavonoids, flavonoid-glycosides and organic acids. The accumulation of these molecules was characteristic to the species and to the source of the plant material. Exclusively in the blossoms containing *ex situ* sample of *H. perforatum*, all eight components were detected (catechin, epicatechin, rutin, quercetin-3-glucuronide, quercitrin, hyperoside, quercetin, chlorogenic acid). Among the *in vitro* samples, the composition of the identified reference molecules varied: e.g. in *in vitro* *H. calycinum* quercetin and chlorogenic acid, and in *H. rumeliacum* quercetin and quercetin-3-glucuronide could not be unambiguously identified.

Conclusions: The flavonoid UHPLC profile of the tested *Hypericum* species revealed that eight known compounds could be identified and quantified. Further studies are needed to identify the still unknown peaks of the fingerprint profile. Furthermore, the composition of the medium does not affect the quality of the presence of the identified compounds.

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