



# ORBIS Final Conference

July 5-6<sup>th</sup> 2023, Poznań



UNIVERSITY OF HELSINKI



The University of Dublin



RUTGERS



The ORBIS Project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under the Maria Skłodowska-Curie Action: Grant Agreement No 778051



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## SCIENTIFIC COMMITTEE

### Leads

Adam VOELKEL (Poznan University of Technology), Piotr RUDZKI (Celon Pharma S.A.)

Members of the ORBIS Steering Committee:

Sharon DAVIN (Applied Process Company Ltd.)  
Katarzyna DOPIERAŁA (Poznan University of Technology)  
Črt DRAGAR (University of Ljubljana)  
Rok DREU (University of Ljubljana)  
Aleksandra DUMICIC (Zentiva, k.s.)  
Grzegorz GARBACZ (Physiolution GmbH)  
Anne JUPPO (University of Helsinki)  
Katarzyna KOSICKA – NOWORZYŃ (Poznan University of Medical Sciences)  
Janina LULEK (Poznan University of Medical Sciences)  
Michał MASTERNAK (University of Central Florida)  
Bożena MICHNIAK-KOHN (Rutgers University)  
Irina NAGORICHNA (Farmak JSC)  
Michał ROMĄŃSKI (Poznan University of Medical Sciences)  
Wojciech SMUŁEK (Poznan University of Technology)  
František ŠTĚPÁNEK (University of Chemistry and Technology Prague)  
Clare STRACHAN (University of Helsinki)  
Lidia TAJBER (Trinity College Dublin)

## ORGANIZING COMMITTEE

**The Conference was organized by Poznan University of Medical Sciences.**

### Lead Organizers

Janina LULEK, Bożena RADUCHA (Poznan University of Medical Sciences)

### Coordinators

Dorota DANIELAK, Piotr GADZIŃSKI, Katarzyna KOSICKA-NOWORZYŃ, Marcin SKOTNICKI  
(Poznan University of Medical Sciences)  
Wojciech SMUŁEK (Poznan University of Technology)  
Marek RYCHTER (former ORBIS Secondee, Poznan University of Medical Sciences)

### Student support

Antoni BIAŁEK, Julia KRYSZTOFIK, Maciej MICHALAK (Poznan University of Medical Sciences/Student Chapter of The International Society for Pharmaceutical Engineering)



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## WELCOME MESSAGE



On behalf of Poznan University of Medical Sciences (PUMS) - the ORBIS Project Coordinator and the Scientific and Organizing Committees of the Final ORBIS Conference on July 5<sup>th</sup> – 6<sup>th</sup>, 2023 in Poznan, we are honored to warmly welcome the lecturers, participants and guests from Czech Republic, Finland, Germany, Ireland, Slovenia, Serbia, Ukraine, United Kingdom, United States and Poland.

ORBIS (Open Research Biopharmaceutical Internships Support) is an international and intersectoral project funded by the Horizon 2020 - Marie Skłodowska Curie Actions - Research and Innovation Staff Exchange programme implemented between the 1<sup>st</sup> of March 2018 and the 31<sup>st</sup> of August 2023. According to the RISE scheme, during the implementation of the goals of the ORBIS project, we have promoted international and inter-sector collaboration through research and innovation staff exchanges and sharing of knowledge and ideas from research to market and vice-versa.

Currently, the ORBIS Consortium consists of thirteen organizations: six European universities – *Trinity College Dublin*, TCD (Ireland); *University of Helsinki*, UH (Finland), *University of Chemistry and Technology Prague*, UCTP (Czech Republic), *University of Ljubljana*, UL (Slovenia), *Poznan University of Technology*, PUT (Poland), *Poznan University of Medical Sciences*, PUMS (Poland), two universities from US – *Rutgers*, *The State University of New Jersey*, RUTG and *University of Central Florida*, UCF and five pharmaceutical companies: *Applied Process Company Limited*, APC (Ireland), *Physiolution GmbH*, PHY (Germany), *Farmak JSC*, FMK (Ukraine), *Zentiva k.s.*, ZNT (Czech Republic) and *Celon Pharma*, CLN (Poland). All thirteen organisations are involved in activities across the seven work packages of the ORBIS program.

As stated on the ORBIS project website ([www.orbisproject.eu](http://www.orbisproject.eu)), the main research areas of ORBIS cover the synthesis optimization for new active ingredients, preformulation studies, development of novel drug carriers, oral, dermal and transdermal dosage forms, as well as their biopharmaceutical evaluation with the use of novel techniques.

We are finally meeting today after a long break and a few postponements of this Final Conference, initially planned in ORBIS Grant Agreement for December 2021. Our conference brings together esteemed experts, professors, industry representatives, postdoctoral, and early stage researchers including students from several countries in the field of biopharmaceutical research and development. The conference provides them with the opportunity to report, present, share, and discuss scientific questions, achievements, issues and challenges in the field of all main research areas of the ORBIS project mentioned above.

Full of optimism, we are happy that neither the COVID-19 pandemic nor the ongoing war in Ukraine discouraged ORBIS Partners from continuing the project goals. At the same time, we firmly believe that the brave Ukrainian people will soon win this cruel war, and we thank so much our Colleagues from FARMAK they decided to continue participating in our project despite such a difficult time for the Ukraine people.

We would like to thank all the distinguished lecturers who accepted our invitation and all who contributed to organising this event, as well as all participants and guests for coming to Poznan. We wish you all successful, inspiring conference with many novel scientific collaborations and friendships.

Poznań, July 5<sup>th</sup>, 2023

Prof. Janina Lulek, PhD  
ORBIS Project Coordinator



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## PROGRAMME

Day 1, July 5<sup>th</sup>, 9:00 – 17:10

Conference venue: [PUMS Congress Center, Przybyszewskiego 37a, Poznań](#)

| Time  | Event  |
|---|--|
| 8:30 – 9:00   | Registration   |
| 9:00 – 9:30   | <b>Opening and introductions:</b><br>Master of Ceremony – dr Katarzyna Kosicka-Noworzyń, PUMS<br><b>prof. Janina Lulek</b> - Project Coordinator<br><b>prof. Dorota Zozulińska-Ziółkiewicz</b> - PUMS Vice-Rector &<br>Rector prof. Andrzej Tykarski Representative<br><b>prof. Anna Jelińska</b> - Dean of the Faculty of Pharmacy, PUMS<br><b>prof. Judyta Cielecka-Piontek</b> - Pharmacy Council Chancellor, PUMS<br><b>Invited Guests</b> |
| 9:30 – 9:45   | Overview of ORBIS project<br><b>Prof. Janina Lulek</b> (Poznan University of Medical Sciences, Poland)   |
| 9:45 – 10:00  | Short break  |
| 9:00 – 17:00  | <b>Poster session</b><br>Head of the session - <b>prof. František Štěpánek</b> (University of Chemistry and Technology Prague, Czech Republic)   |
| <b>Session I: Drug substances and pharmaceutical preformulation</b><br>Session Chairs: <b>prof. Lidia Tajber</b> (Trinity College Dublin) &<br><b>prof. Stane Srčič</b> (University of Ljubljana) |  |
| 10:00– 10:30  | <b>Lecture 1: prof. Andrzej Kutner</b> (Medical University of Warsaw, Poland)<br><i>Recent advances in API development</i>   |
| 10:30 – 11:00   | <b>Lecture 2: prof. Stane Srčič</b> (University of Ljubljana, Slovenia)<br><i>Effect of moisture on solid-state stability</i>  |
| 11:00 – 11:40   | Oral presentation, <b>Sreela Ramesh</b> (Zentiva, k.s., Czech Republic)<br><i>Non-classical mechanism in crystallization of salts of cyamemazine</i>   |
|   | Oral presentation, <b>Martin Balouch</b> (University of Chemistry and Technology Prague, Czech Republic)<br><i>Machine learning algorithms for slurry crystallization control</i>  |
|   | <b>Discussion on the multidisciplinary scientific outcomes</b>   |
|   |  |
| 11:40 – 12:10   | Coffee break   |



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| <b>Session II: Dosage forms and drug delivery systems</b><br><b>Session Chairs: prof. Anne Juppo (University of Helsinki) &amp; dr Aleksandra Domicic (Zentiva, k.s)</b>  |   |
|---|---|
| 12:10 – 12:40   | <b>Lecture 1: prof. Clare Strachan</b> (University of Helsinki, Finland)<br><i>New insight on solid dosage form analysis</i>  |
| 12:40 – 13:10   | <b>Lecture 2: prof. Dimitrios Lamprou</b> (Queen's University Belfast, UK)<br><i>Emerging Technologies Transforming Therapy</i>   |
| 13:10 – 14:00   | Oral Presentation, <b>Dominik Martynek</b> (Zentiva, k.s., Czech Republic)<br><i>Solid solutions preparation using spray drying and hot melt extrusion</i>  |
|   | Oral Presentation, <b>Anna Froelich</b> (Poznan University of Medical Sciences, Poland)<br><i>Topical delivery of meloxicam using liposome and microemulsion formulation approaches</i>                                     |
|   | Oral Presentation, <b>Viktoriia Shyrokov</b> a (Farmak JSC, Ukraine)<br><i>Comparative studies of gels for topical delivery of ketoprofen: physicochemical characteristics and in vitro drug release rate determination</i> |
|   | <b>Discussion on the multidisciplinary scientific outcomes</b>  |
| 14:00 – 14:30   | <b>Discussion on the policies developed by the consortium</b>   |
| 14:30 – 15:30   | Lunch break   |
| <b>Session III: Biopharmaceutical evaluation of dosage forms and drug delivery systems</b><br><b>Session Chairs: dr Grzegorz Garbacz (Physiolution GmbH) &amp; dr Marta Karaźniewicz-Lada (Poznan University of Medical Sciences)</b> |   |
| 15:30 – 16:00   | <b>Lecture 1: prof. Iztok Grabnar</b> (University of Ljubljana, Slovenia)<br><i>Modeling complex absorption in a population pharmacokinetic analysis using empirical functions</i>  |
| 16:00 – 16:30   | <b>Lecture 2: dr Irena Tomaszewska</b> (Pfizer, UK)<br><i>Applications of biopredictive tools during drug product development</i>   |
| 16:30 - 17:10   | Oral presentation, <b>Monika Zielińska</b> (Poznan University of Technology, Poland)<br><i>The effects of various food products on bisphosphonates availability</i>   |
|   | Oral Presentation, <b>Yulia Kondratova</b> (Farmak JSC, Ukraine)<br><i>Study of dissolution profiles: from API to IVIVC</i>   |
|   | <b>Discussion on the multidisciplinary scientific outcomes</b>  |



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Day 2, July 6<sup>th</sup>, 8:30 – 15:30

Conference venue: [PUMS Congress Center, Przybyszewskiego 37a, Poznań](#)

| Time   | Event   |
|--|---|
| 8:30 – 8:35  | Opening and introductions   |
| 8:30 – 15:30   | Poster session  |
| <b>Session I - Rutgers University</b><br>Session Chairs: prof. Jan Matysiak (Poznan University of Medical Sciences) & dr Sharon Davin (Applied Process Company Ltd.) |   |
| 8:35 – 9:05  | <b>Lecture 1: prof. Joachim Kohn</b> (Rutgers University, New Jersey, USA)<br><i>Future Opportunities in the Field of Drug Delivery Research</i>  |
| 9:05 – 9:35  | <b>Lecture 2: prof. Rohit Ramachandran</b> (Rutgers University, New Jersey, USA)<br><i>Energy efficient smart-manufacturing of pharmaceutical solid oral dosage forms</i>                                 |
| 9:35 – 10:05   | Oral presentation, <b>Aneta Kalvodova</b> (University of Chemistry and Technology Prague, Czech Republic)<br><i>Innovative cerosomes as carriers for an enhanced dermatitis therapy</i>                   |
|  | Oral presentation, <b>Aleksandra Grzybka-Zasadzińska</b> (Poznan University of Technology, Poland)<br><i>Prediction of quality attributes of granules prepared by high-shear wet granulation</i>          |
|  | Oral presentation, <b>Marta Karaźniewicz-Lada</b> (Poznan University of Medical Sciences, Poland)<br><i>UPLC-MS/MS method for the stability study and bioanalysis of first-line anti-tubercular drugs</i> |
|  |   |
| 10:05 – 10:15  | <b>Discussion on the multidisciplinary scientific outcomes</b>  |
| 10:15 – 11:00  | Coffee break  |
| <b>CEREMONY OF CONFERRING THE TITLE OF PUMS HONORIS CAUSA DOCTORATE TO PROF. BOŻENA MICHNIAK-KOHN</b>  |   |
| 11:00 – 13:00  | Ceremony<br><b>Lecture by prof. Bozena Michniak-Kohn</b>  |
| 13:00 – 14:00  | Coffee break  |



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| <b>Session II - University of Central Florida</b><br>Session Chairs: dr Tomasz Osmalek (Poznan University of Medical Sciences) &<br>dr Ewelina Juszczuk (Celon Pharma S.A.) |  |
|---|--|
| 14:00 – 14:30   | <b>Lecture: prof. Michał Masternak</b> (University of Central Florida, USA)<br><i>Senescent cells as new pharmacological targets for age-related diseases and anti-aging therapy</i> |
| 14:30 – 15:00   | Oral presentation, <b>Ewelina Juszczuk</b> (Celon Pharma S.A., Poland)<br><i>The impact of selected miRNAs on growth of head and neck cancer cell lines in vitro</i>                 |
|   | Oral Presentation, <b>Błażej Rubiś</b> (Poznan University of Medical Sciences, Poland)<br><i>New therapies targeting aging cells in the skin</i>                                     |
|   | <b>Q&amp;A Session</b>   |
| 15:00 – 15:30   | <b>Overview of the poster session</b><br>Head of the session - <b>prof. František Štěpánek</b> (University of Chemistry and Technology Prague, Czech Republic)                       |

**6<sup>th</sup> July 2023**

**Networking event:**

**18:00** – bus departure from PUMS Congress Center, 37a Przybyszewskiego Str.

19:00 - 24:00 **Gala dinner with Best Poster & Best Short Oral Presentation Award ceremony**  
at [Siedem Drzew Restaurant with Botanical Garden, Biskupice](#)  
(for all secondees participating in conference and invited guests)

**24:00** - return bus departure to the PUMS Congress Center, 37a Przybyszewskiego Str.



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## USEFUL INFORMATION

### How to travel in Poznan

Many options make moving around Poznan easier. You can order a taxi or even rent a scooter with one click.

The most popular are:



#### UBER

If you want to order a taxi, Uber is generally cheaper than a “normal one”. Another advantage is that you can be picked up swiftly after a driver is assigned.

#### BOLT & LIME

Both apps are mostly known for renting a scooter. They are usually scattered around the whole city, and you can locate them quickly via the app. You can download an app with a logo on the scooter, register, and pay per time you use it.

[Try to avoid TAXIs standing in front of the airport and central train station, the prices are usually higher than regular]

#### PUBLIC TRANSPORT

If you want to use public transport, below are the most important bus stops:

**"Port lotniczy Ławica"** – the bus stop at the airport,

**"Polna Szpital"** – the bus stop on Bukowska street, the closest one to the PUMS Campus,

**"Rondo Nowaka-Jeziorańskiego"** – tram and bus stop, close to the PUMS Campus and the “Enjoy” Restaurant. You can catch here the tram to the city center,

**"Poznań Main Station"** – the bus stop at the train station.

**"Most Dworcowy"** – tram number 6 goes directly to **"Rondo Nowaka-Jeziorańskiego"**





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## Important locations

### Conference Venue:

PUMS Congress Center, 37a Przybyszewskiego Str.

#### Google Maps link:

<https://goo.gl/maps/1dXs1irYbVG2tA5C6?coh=178572&entry=tt>



### Accommodation:

**Platinum Palace Residence Hotel 19 Reymonta Str.)**

**10 min of walk to the conference venue**

#### Google Maps link:

<https://goo.gl/maps/dfcsfWgsxzGpum2g8>



### Other hotels near the Conference venue:

<https://cityparkhotel.pl/pl/>

<https://olimpia-apart.hotels-poznan.com/pl/#bkl>

<https://www.apartamentyvelvet.pl/en/>

## Social Event

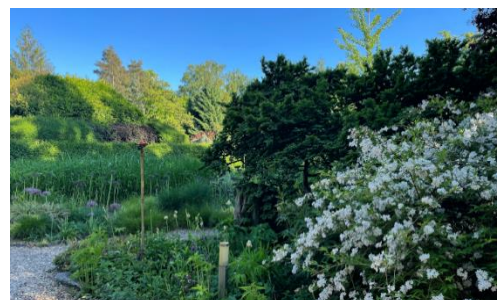
(all secondees participating in conference and invited guests):

18:00 bus departure from PUMS Congress Center, 37a Przybyszewskiego Str.

19:00 –24:00 Gala dinner with Best Poster & Best Short Oral Presentation Award ceremony  
(Siedem Drzew Restaurant with Botanical Garden, Biskupice)

#### Google Maps link:

<https://goo.gl/maps/yKB8LUuATJr6G26N6?coh=178572&entry=tt>





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## Public transport in Poznań

Poznań's public transport offers many day and night connections. During your stay, you can travel by bus or tram. The following webpage has plenty of information about tickets and tariffs

<https://www.ztm.poznan.pl/en/komunikacja/> Single-use time tickets or a 24-hour ticket could be the best option for you.

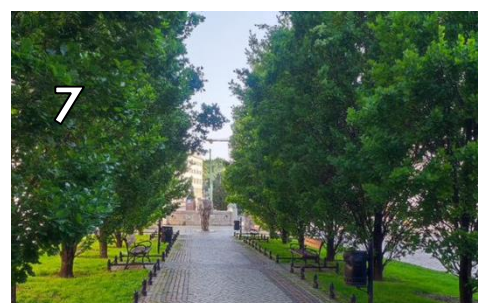
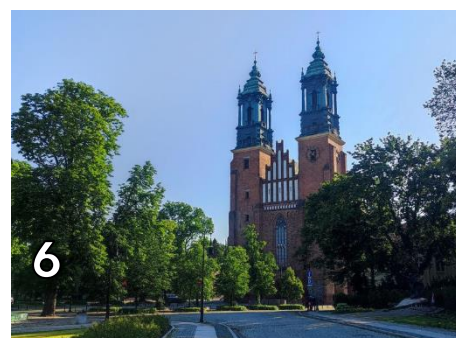
You can buy a ticket for public transport in places such as **ticket machines** near bus/ tram stops and **local newsstands** as well as **on the internet**. Purchasing a ticket for Zone A will be enough for communication in the city. The easiest and simplest way to buy a ticket is by downloading a „**Jakdojade**” mobile app. There you can buy tickets and pay via credit card, Apple Pay, and Google Pay. The application also shows a timetable and allows you to plan your route.

## Safety in Poznań

Poznań is generally a very safe city. Most public places have CCTV, and only a few spots are less welcoming for foreigners. Please be cautious in public transport and be aware of possible pickpockets as in all major cities.

## Places worth visiting

Our city improves for the benefit of its inhabitants. Unfortunately, several of Poznań's tourist attractions are now less accessible due to renovations. However, we still encourage you to visit the historic Old Market and its vicinities, sip a coffee in one of many cafes, drink a pint of cold beer, or enjoy the night lights while strolling along the Warta river bank. The nearby area of the campus also offers some attractions and multicultural restaurants. Do not worry if you are vegan or follow a particular diet – there are plenty of options. Feel free to ask us for recommendations or discover our city on your own.



- 1 – The Freedom Square
- 2 – The Kolegiacki Square
- 3 – Poznań Goats
- 4 – Fara Church
- 5 – The Old Market with the Town Hall
- 6 – The Cathedral
- 7 – David Černý's Golem



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**Thank you for participating  
in the ORBIS Final Conference**



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