



# UNGAP



# NORDIC POP

## In vitro tools for evaluating the intraluminal and absorption behavior of advanced drug formulations

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*Joint UNGAP & NordicPOP hands-on training school, 17<sup>th</sup> to 20<sup>th</sup> of June 2019  
Location University of Southern Denmark, Department of Physics, Chemistry & Pharmacy, SDU Campus; Campusvej 5230 Odense, Denmark*

Co-organised by

- University of Southern Denmark, Denmark
- National and Kapodistrian University of Athens, Greece
- University of Greifswald, Germany
- Copenhagen University, Denmark
- University of Ljubljana, Slovenia
- University of Oslo, Norway
- UIT The Arctic University of Norway, Norway
- Uppsala University, Sweden

Last updated February 18th

This training school provides a state-of-the-art overview on in vitro techniques applied in the field of oral biopharmaceutics along with an opportunity to get hands-on training on laboratory tools for studying the intraluminal and absorptive behavior of candidate-enabling drug formulations. For this purpose, leading scientists, active in the design and evaluation of novel in-vitro tools for the oral bioavailability toolbox, will provide detailed and critical insights into the application of a variety of in-vitro technologies such as dissolution and permeation models. The primary aim of this workshop is to initiate and stimulate collaboration between the different UNGAP and NordicPOP partners with corresponding or complementary experiences and needs. For this reason, the program leaves ample time for panel discussions and face-to-face exchange of experiences. A table-top exhibition of commercially available tools will run alongside with the training course.

Introductory day: Maximum number of participants 100

Hands-on training: Maximum number of participants 48 (whereof 24 each from UNGAP and NordicPOP)

Registration will open on 1<sup>st</sup> of March 2019. An application form will be posted here, where you can fill in your preferences (introductory day only / introductory day + preferred hands-on training). Admission will be granted according to COST criteria for the UNGAP audience and on a first submit-first serve basis for the NordicPOP audience.

For each of the audiences (UNGAP / NordicPOP), every hands-on training will run at least once, depending on availability of trainers up to three times. UNGAP participants will attend three different training sessions. NordicPOP attendants may select on-site a 2nd hands-on training among those training sessions that are not fully booked.



# UNGAP



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## Monday 17<sup>th</sup> Introductory day

we start with an introductory day with lectures and/or seminars for both, the UNGAP and NordicPOP audience.  
Tentative program

time	person	activity
8.30	-	Registration open, coffee
9:00 – 9:05	Uhd Nielsen& Brandl	Welcome & Housekeeping
Dissolution		
9:05 - 9:40	Paul Stein	“Diffusion – the basis of drug transport”
9:40 – 10:15	Christos Reppas	“Gastrointestinal transfer in the fasted state”
10:15 – 10:50	Werner Weitschiess/ Mirko Koziulek	“Physiological considerations in drug release testing – the role of gastric emptying and motility”
10:50 – 11:10	-	Coffee break
11:10 – 11:45	Anette Müllertz	“In vitro lipolysis / lipid DDS”
11:45 – 12:20	Karl Box	“Novel dissolution methodologies; usefulness, challenges and potential”
12:20 – 12:45	Speakers of morning session	Panel discussion
12:45 – 13:30		Lunch break

Permeation Across Biological Barriers		
13:30 – 14:05	Carsten Uhd-Nielsen	“Transport, Transporters and Solute Carriers”
14:05 – 14:40	Albin Kristl	“Permeation studies in Ussing chambers using intestinal membrane”
14:40 – 14:55	-	Coffee break
Permeation Across Artificial Barriers – Combined Dissolution/Permeation		
14:55 – 15:30	Massimiliano di Cagno	“Permeability studies using artificial biomimetic barriers”
15:30 – 16:05	Gøril Eide Flaten	“Mucus-PVPA”
16:05 – 16:40	Christel Bergström/ Janneke Keemink	“In vitro tools applicable to simultaneous determination of formulation digestion, drug release and drug permeation”
16:40 – 17:00		Coffee break
17:00 – 17:35	Annette Bauer-Brandl	“High throughput formulation screening in 96-well plates”
17.35 – 18:10	Martin Brandl	“Dynamic dissolution-/permeation testing”
18:10 – 18:45	Speakers of afternoon session	Panel discussion of afternoon session
19:00		Welcome reception; drinks & snacks



# UNGAP



## **Tuesday 18<sup>th</sup> (whole day) & Wednesday 19<sup>th</sup> (morning)**

Parallel hands-on training sessions in our labs in small groups for the UNGAP audience<sup>1</sup>, followed by a brief summarizing seminar of the participant's experiences on Wednesday late afternoon, which completes the UNGAP hands-on-course.

## **Wednesday evening dinner for both UNGAP and NordicPOP attendants.**

## **Wednesday 19<sup>th</sup> (afternoon) and Thursday 20<sup>th</sup> (whole day)**

Parallel hands-on training for the NordicPOP audience followed by a summarizing seminar on Thursday late afternoon, which completes the NordicPOP hands-on-course.

### **Hands-on training Topics:**

1. Carsten Uhd Nielsen: [Drug transporter / cell culture studies](#) (confirmed)
2. Annette Bauer-Brandl: [High throughput formulation screening](#) (96-well plate format, confirmed)
3. Martin Brandl: [Dynamic dissolution/permeation assay](#) (PermeaLoop®, confirmed)
4. Paul Stein: [NMR-based tools for drug transport](#) (confirmed)
5. Mirko Koziolk/Hannes Gierke (Greifswald Univ, UNGAP & NordicPOP): ["A biorelevant dissolution test devices for the simulation of gastric emptying and motility"](#) (GastroDuo),(confirmed)
6. Maria Vertzoni (Univ. Athens, UNGAP): ["An in vitro biorelevant gastrointestinal transfer \(BioGIT\) system"](#) (confirmed)
7. Matthias Knop/NN (University of Copenhagen, NordicPOP): ["In vitro lipolysis / lipid DDS"](#) (confirmed)
8. Massimiliano di Cagno (University of Oslo, NordicPOP): ["Permeability studies using Permeapad®"](#) (side-by-side cell, Franz cell, confirmed)
9. Gøril Eide Flaten (Arctic University Tromsø, NordicPOP): ["Mucus-PVPA model"](#) (titer plate format; confirmed)
10. Christel Bergström/Janneke Keemink (Uppsala University, NordicPOP): ["simultaneous determination of formulation digestion, drug release and drug permeation"](#) (confirmed)

Industry table-top exhibition and practical demonstrations (running alongside the hands-on training sessions)

Physiolution GmbH, Dr. Grzegorz Garbacz, [www.physiolution.eu](http://www.physiolution.eu) (confirmed)

innoME GmbH, Jannik Jungmann, <https://www.innome.org/en/> (confirmed)

plon, Karl Box, <https://pion-inc.com/> (confirmed)

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<sup>1</sup> NordicPOP-audience (in part) moves on to University of Copenhagen (2 hours by train) to attend a NordicPOP course on amorphous solid dispersions directed by Korbinian Löbmann