



IVP NEWSLETTER

NR. 2, 2019



IN VIVO PHARMACOLOGY
GRADUATE PROGRAMME FOR IN VIVO PHARMACOLOGY & EXPERIMENTAL ANIMALS

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Layout:
Camilla Ebert

www.invivofarm.dk

SINCE LAST...

Dear All,

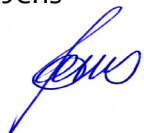
Another year has passed and looking back at the activities in the program, I think it has been a great year. We held our 13th annual meeting in March with strong presentations and posters and our 3rd student-organized IVP Animal Models Workshop 30. August 2019. In particular, I wish to thank Victoria and Charlotte for their involvement in making this an interesting and inspiring day of science for all of us! By the way: Don't forget to sign up for our Xmas meeting next week where Dr. Florence Sotty from Lundbeck will talk about Modeling Parkinson's disease pathophysiology in rodents for the development of novel therapies followed by tapas and wine. See more about the future activities below in the newsletter.

Our PhD program continues to attract new students and I wish to formally welcome everyone that started their studies in 2019. A part from our compulsory curriculum and meeting activities, we hope to offer you an important network within the field of in vivo pharmacology that will hopefully follow you in your future career. Our student population continues to balance around 40 people with about 10-12 graduations per year. In my opinion, this is a near optimal number to secure both critical mass but also the intimacy necessary to ensure a strong cohesion. I hope you will take advantage of this opportunity.

A new compulsory add-on course in RCR will emerge in 2020 aimed at students finishing their thesis work. There has been some unfortunate cases of plagiarism leading to cases filed to the Committee for Scientific Dishonesty (Nævnet for Videnskabelig Uredelighed) and this course seeks to ensure that students are better capable of judging the quality of their own writing. On a happier note, the PhD school at SUND has decided to pay for the print of 12 copies of all SUND PhD theses. The program leaders are advocating for 20 copies and we will see how this ends.

Looking forward to seeing you all next week and wishing everyone a merry Christmas and a happy and prosperous New Year!

Jens



Program Head

3RD IVP ANIMAL MODELS WORKSHOP 30 AUGUST 2019



The IVP student representatives, Victoria & Charlotte, kicked off the workshop with a short introduction.



One of the organisers presented each speaker. Here, PhD student Emilio Di Ianni presenting Postdoc Anders Brunse.



Postdoc Anders Brunse was invited to speak during the first session with Microbiota as the main theme.



PhD students Mille (L) and Laura (R) enjoying a refreshment during one of the many breaks.



Many of the presentations fostered discussions whilst enjoying a cup of coffee.



Professor Axel Kornerup Hansen presenting during the first session: "Microbiome studies: Lessons from animal models."



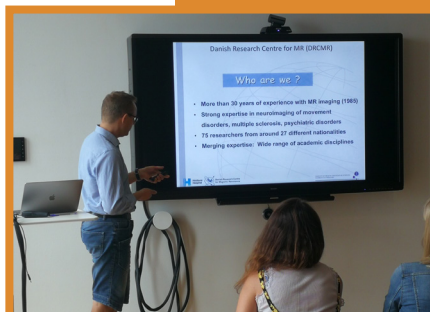
PhD students Laura (L) and Josephine (R) presented speakers from the second session: Computational and cellular biology as integrative tools in In Vivo Pharmacology.



Christian Hove Rasmussen presenting during session two: “Pharmacometrics in Drug R&D: Utilizing in vivo and in vitro data for in silico models.”



Assistant professor Johan Ulrik Lind presenting during session two: “Instrumented human cardiac tissue models for drug development and disease modelling.”



Associate professor Tim Bjørn Dyrby presenting during the third session (Imaging): “Multiscale imaging of the brain using MRI.”



A small but engaged crowd participated in this year’s Animal Models Workshop.



The last speaker of the day was Principal scientist Jacob Hecksher Sørensen entertaining us with: “Developing 3D imaging to quantify disease endpoints and support drug discovery.”



NEWS FROM THE STUDENT REPRESENTATIVES

Dear fellow members of the IVP Graduate Programme

As Joni Mitchell once wrote; “It’s coming on Christmas”! and we hope all of you are starting to feel the Christmas spirit settling in, despite the cold and windy days of November, long hours in the lab and the increasing lack of day light.

Since last, we have been gathered at both the annual Animal Models Workshop in August and more recently for those of us attending the Novo Nordisk Fellowship Symposium on November 7-8th.

At the Animal Models Workshop we were fortunate to have a group of inspiring scientists enlightening us on everything from the importance of the microbiota; how 3D imaging and MRI can be utilised to quantify disease endpoints; and lastly how pharmacokinetic modelling and human cardiac tissue models can be utilised in drug development.

Thank you all for facilitating interesting discussions by asking lots of questions! We hope you enjoyed it as much as we did – and we look forward to seeing you next year (remember that you can sign up for the planning committee if you want to influence the scientific subjects for next year’s workshop!)

The next big event in the calendar is the annual IVP meeting on 5-6 March 2020 in Helsingør, where we look forward to spending two inspiring days with you, discussing each other’s research. Make sure to book the dates in your calendar, if you haven’t already done so!

However, before that we’ll hopefully see most of you at the IVP Christmas Gathering on December 11th! Principal Scientist Florence Sotty from Lundbeck will join us to explain how Parkinson’s disease is modelled in rodents and afterwards we’ll have fun with wine, tapas and Christmas shenanigans. Don’t miss it!

*Christmas greetings from your student representatives,
Charlotte & Victoria*

Ps. As we are both “retiring” as student representatives within the next year, we encourage you to consider signing up as new student representatives!! For more information on what it’s all about, feel free to contact either us or Camilla Ebert.

JOIN THE IVP GRADUATE PROGRAMME ON FACEBOOK



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LEARN MORE

IVP Christmas Gathering December 2019



Wednesday 11 December
at 2 p.m.



FUNDING^{ooo}

SUNDS PhD school provides funding for courses offered from external providers. Up to two courses pr. PhD student. [Read the conditions.](#)

SUNDS PhD school also provides funding for stays abroad at other research environments. The stay should be all in all 4 weeks, which means that the stay can be split into two short stays as long as they comply to 4 weeks in total. [Read more.](#)

The Graduate School now offers financial support for international PhD students' Danish language courses. Learn more about financial support for participation in Danish language courses [here](#).

The IVP graduate programme provides funding for conferences and seminars under the condition that you have been accepted to present a poster or oral presentation. Members that are part of an industrial project are not eligible for funding. [Read more.](#)

IVP ANNUAL WHEEL^{ooo}

The IVP Advisory Board has decided to make an annual wheel for the IVP Graduate Programme. The Annual Wheel shows IVP's annual activities and what we expect our graduate members to participate in.

Click on the picture to download the wheel.



NEW FACES...

Ahmed Barakat Ibrahim Soltan

from Dept. of Drug Design and Pharmacology. Title of project: Cancer-induced bone pain – microenvironment and behavioural outcomes. Principal supervisor: Anne-Marie Heegaard. Project initiated 1 September 2019.

Chelsea Hopkins from Dept. of Drug Design and Pharmacology. Title of project: Mechanisms of bone pain in fibrous dysplasia. Principal supervisor: Anne-Marie Heegaard. Project initiated 1 September 2019.

Khaled Mohamed from Dept. of Drug Design and Pharmacology. Title of project: Exploring a novel Calcitonin/Amylin Receptor Agonist for its ability to improve structure and pain in rat models of osteoarthritis (OA). Principal supervisor: Anne-Marie Heegaard. Project initiated 1 September 2019.

Heidi Young Nilsen from Dept. of Veterinary and Animal Sciences. Title of project: Diabetes mellitus in dogs: Improved management and unravelling of disease mechanisms. Principal supervisor: Lisbeth Høier Olsen. Project initiated 1 October 2019.



”I work in small animal practice as a veterinarian in a small animal hospital in Gothenburg, Sweden. I’m doing a part-time PhD project looking at cardiac changes in diabetic dogs and predictors for remission in dogs with diestrus diabetes.”

Pernille Colding-Jørgensen from Dept. of Experimental Medicine. Title of project: Characterization of welfare implications and refinement of a mouse model for polyarthritis. Principal supervisor: Klas Abelson. Project initiated 1 October 2019.



PhD fellow working with a systemic polyarthritis model in mice by characterizing welfare parameters, pain related behavior, model

specific parameters and emotional states. Further, to refine the model by investigating the most optimal analgesic strategy and maximize animal welfare with minimal impact on the model.

Sofie Kromann from the Dept. of Veterinary and Animal Sciences. Title of project: Continuous Disease Monitoring and Intervention Program (COLI-STOP). Principal supervisor: Henrik Elvang Jensen. Project initiated 1 February 2019.



“During my PhD-project, three main focus areas will constitute the centre of my work. These are as follows: 1) Development of an aerogeneous infection model and conduction of a controlled intervention study. 2) Farm-surveillance of colibacillosis. 3) Bioinformatic analysis of Escherichia coli WGS-data obtained during the surveillance.”

Alexandra Zisser from Dept. of Veterinary and Animal Sciences. Title of project: The role of the hepatic stellate cells in non-alcoholic steatohepatitis

and fibrosis. Principal supervisor: Pernille Tveden-Nyborg. Project initiated 1 November 2019.



”In my PhD project, I aim to investigate the role of the hepatic stellate cells in the progression of liver fibrosis in non-alcoholic fatty liver disease (NAFLD), applying the guinea pig as validated in vivo model and using precision cut liver slices for ex vivo culture of intact liver segments.”

Claudia Andrea Torero Gutierrez from Dept. of Public Health. Title of project: Airway exposure to metal oxide nanomaterials and acute phase response. Principal supervisor: Martin Roursgaard. Project initiated 1 December 2019.

Karina Poulsdóttir Debes from Dept. of Veterinary and Animal Sciences. Title of project: In depth characterization of myocardial function in a porcine model of ischemic heart failure. Principal supervisor: Lisbeth Høier Olsen. Project initiated 2 December 2019.

Welcome to everyone!

NEW PUBLICATIONS...

A. U. Odland, L. Jessen, C. M. Fitzpatrick and J. T. Andreasen, '8-OH-DPAT Induces Compulsive-like Deficit in Spontaneous Alternation Behavior: Reversal by MDMA but Not Citalopram', ACS Chem Neurosci, vol. 10(7), 3094-3100, 2019. [Link to article.](#)

A. U. Odland, L. Jessen, J. L. Kristensen, C. M. Fitzpatrick and J. T. Andreasen, 'The 5-hydroxytryptamine 2A receptor agonists DOI and 25CN-NBOH decrease marble burying and reverse 8-OH-DPAT-induced deficit in spontaneous alternation, Neuropharmacology, 107838, 2019b. [Link to article.](#)

D. O. Lützhøft, L. Sánchez-Alcoholado, P. Tougaard, C. M. Junker Mentzel, W. Kot, D. S. Nielsen, A. K. Hansen, 'Short communication : Gut microbial colonization of the mouse colon using faecal transfer was equally effective when comparing rectal inoculation and oral inoculation based on 16S rRNA sequencing', Research in Veterinary Science, vol. 26, p. 227-232, 2019. [Link to article.](#)

E. Fjære, L. S. Myrmel, D. O. Lützhøft, H. Andersen, J. B. Holm, P. Kiilerich, R. Hannisdal, B. Liaset, K. Kristiansen, L. Madsen, 'Effects of exercise and dietary protein sources on adiposity and insulin sensitivity in obese mice', Journal of Nutritional Biochemistry, vol. 66, p. 98-109, 2019. [Link to article.](#)

H. L. Zakariassen, K. M. Bendtsen, P. Tougaard, A. K. Hansen, 'Reduced early life mucosal integrity decreases thymic cell counts and increases local, but not thymic regulatory, T cell recruitment: Gut mucosal integrity breach and thymic T cells', European Journal of Inflammation, vol. 17,

p. 1-16, 2019. [Link to article.](#)

K. R. Christensen, M. Kjelgaard-Hansen, L. N. Nielsen, B. Wiinberg, F. A. Althoejn, N. B. Poulsen, K. K. Vøls, A. P. Thyme, K. M. Lovgren, A. K. Hansen, K. Roepstorff, 'Rapid inflammation and early degeneration of bone and cartilage revealed in a time-course study of induced haemarthrosis in haemophilic rats', Rheumatology, vol. 58,4, p. 588-599, 2019. [Link to article.](#)

D. H. Ipsen, J. Skat-Rørdam, M. M. Tsamouri, M. Latta, J. Lykkesfeldt, P. Tveden-Nyborg, 'Molecular drivers of non-alcoholic steatohepatitis are sustained in mild-to-late fibrosis progression in a guinea pig model', Molecular Genetics and Genomics, Vol. 294,3, p. 649-661, 2019. [Link to article.](#)

A. K. Jógvansdóttir Gradel, T. Porsgaard, P. M. Bruun Brockhoff, T. Seested, J. Lykkesfeldt, H. H. F. Refsgaard, 'Delayed insulin absorption correlates with alterations in subcutaneous depot kinetics in rats with diet-induced obesity', Obesity Science & Practice, vol. 5,3, p. 281-288, 2019. [Link to article.](#)

L. H. Ørstrup, R. Slaaby, M. G. Rasch, N. Rasmussen, S. Lund, J. Brandt, G. Schluckebier, Z. Wang, A. Lützen, T. Å. Pedersen, H. Hvid, B. F. Hansen, N. Blume, 'Cross-species reactive monoclonal antibodies against the extracellular domains of the insulin receptor and IGF1 receptor', Journal of Immunological Methods, vol. 465, p. 20-26, 2019. [Link to article.](#)

K. Gjendal, J. Lund Ottesen, I. A. S. Olsson, D. B. Sørensen, 'Burrowing and nest building activity in mice after exposure to grid floor, isoflurane or ip injections',

Physiology and Behavior, vol. 206, p. 59-66, 2019. [Link to article.](#)

O. Bæk, C. Fabiansen, H. Friis, C. Ritz, J. Koch, J. L. Willesen, P. M. H. Heegaard, J. Lykkesfeldt, A. Briend, M. H. Golden, P. T. Sangild, T. Thymann, 'Malnutrition predisposes to endotoxin-induced edema and impaired inflammatory response in parenterally fed piglets', Journal of Parenteral and Enteral Nutrition, 2019. [Link to article.](#)

K. Obelitz-Ryom, S. Brandt Bering, S. Hvid Overgaard, S. F. Eskildsen, S. Ringgaard, J. L. Olesen, K. Skovgaard, S. Pankratova, B. Wang, A. Brunse, A. B. Heckmann, M. P. Rydal, P. Torp Sangild, T. Thymann, 'Bovine Milk Oligosaccharides with Sialyllactose Improves Cognition in Preterm Pigs', Nutrients, vol. 11,6, 2019. [Link to article.](#)

D. N. Nguyen, A. J. Currie, S. Ren, S. B. Bering, P. T. Sangild, 'Heat treatment and irradiation reduce anti-bacterial and immune-modulatory properties of bovine colostrum', Journal of Functional Foods, vol. 57, p. 182-189, 2019. [Link to article.](#)

S. Ren, Y. Hui, S. Goericke-Pesch, S. Pankratova, W. Kot, X. Pan, T. Thymann, P. T. Sangild, D. N. Nguyen, 'Gut and immune effects of bioactive milk factors in preterm pigs exposed to prenatal inflammation', American Journal of Physiology: Gastrointestinal and Liver Physiology, vol. 317, p. G67-G77, 2019. [Link to article.](#)

V. S. Harikrishnan, L. K. Krishnan, K. S.P. Abelson, 'A novel technique to develop thoracic spinal laminectomy and a methodology to assess the functionality and welfare of the contusion spinal cord injury (SCI) rat model', PLoS ONE, vol. 14,7, p. 1-19, 2019. [Link to article.](#)

J. A. Cuesta-Seijo, A. J. De Porcellinis, A. H. Valente, A. Striebeck, C. Voss, L. Marri, A. Hansson, A. M. Jansson, M. H. Dinesen, J. U. Fangel, J. Harholt, M. Popovic, M. Thieme, A. Hochmuth, S. C. Zeeman, T. N. Mikkelsen, R. B. Jørgensen, T. G. Roitsch, B. L. Møller, I. Braumann, 'Amylopectin chain length dynamics and activity signatures of key carbon metabolic enzymes highlight early maturation as culprit for yield reduction of barley endosperm starch after heat stress', Plant and Cell Physiology, 2019. [Link to article.](#)

D. M. Jensen, M. L., M. S., J. Lykkesfeldt, R. S. Wils, S. Loft, P. Møller, 'Telomere length and genotoxicity in the lung of rats following intragastric exposure to food-grade titanium dioxide and vegetable carbon particles', Mutagenesis, vol. 34,2, p. 203-214, 2019. [Link to article.](#)

M. H. G. Andersen, M. Frederiksen, A. T. Saber, R. S. Wils, A. S. Fonseca, I. K. Koponen, S. Johannesson, M. Roursgaard, S. Loft, P. Møller, U. Vogel, 'Health effects of exposure to diesel exhaust in diesel-powered trains', Particle and Fibre Toxicology, vol. 16, 2019. [Link to article.](#)

A. M. Ahnfeldt, N. Hyldig, Y. Li, S. S. Kappel, L. Aunsholdt, P. T. Sangild, G. Zachariassen, 'FortiColos - A multicentre study using bovine colostrum as a fortifier to human milk in very preterm infants: Study protocol for a randomised controlled pilot trial', Trials, vol. 20, 2019. [Link to article.](#)

**REMEMBER TO
NOTIFY US OF YOUR
NEW PUBLICATIONS**

NEW PUBLICATIONS TO

IVP ANNUAL MEETING 5-6 March 2020



IN VIVO PHARMACOLOGY

GRADUATE PROGRAMME FOR IN VIVO PHARMACOLOGY & EXPERIMENTAL ANIMALS

Industrial visit at
Lundbeck
Pharma A/S
27 January 2020

Lundbeck



Programme will be
announced as soon as
possible

4th IVP Animal
Models Workshop
28 August 2020



Workshop

Programme will be
announced in June 2020

THE GRADUATE SCHOOL CHANGES E-MAIL...

The Graduate School changes email address from **phdschool@sund.ku.dk** to **graduateschool@sund.ku.dk**.

The new email address is already in use.

Do not worry if you have just send an email to **phdschool@sund.ku.dk**. Your email will be redirected to the new address.

THOSE WHO DEFENDED SINCE LAST...

Sisse Andersen Nørgaard defended her thesis on 14 August 2019. The title: Refining mouse models of diabetic nephropathy.

Lykke Boysen defended her thesis on 4 September 2019. The title: Formation and vascular deposition of immune complexes in mice administered with species-foreign proteins.

Maitane Caballero Puntiverio defended her thesis on 6 September 2019. The title: Studies of attentional performance and impulsivity - In vivo pharmacological studies in mice and human studies in healthy volunteers.

Hannah Louise Zakariassen defended her thesis on 23 September 2019. The

title: Mechanisms underlying the regulation of energy balance with amylin and calcitonin receptor agonism in mice.

Kåre Kryger Vøls defended his thesis on 4 November 2019. The title: In vivo characterisation of critical determinants of bleeding in the development of haemophilic arthropathy in haemophilic rodent models.

Congratulations to everyone!

UPCOMING PHD DEFENCES...

Rikke Elgaard will defend her thesis on 5 December 2019. The title: Transcriptomic Differences between the Cephalic and Extra-cephalic Pain Pathways in Rat.

Maria Ougaard will defend her thesis on 6 December 2019. The title: Establishment of a murine model of chronic kidney disease.

Stay updated on all the PhD defences at The Graduate School for Health and Medical Sciences. [Read more.](#)



**REMEMBER TO
NOTIFY US WHEN YOU
HAVE SUBMITTED YOUR
PHD FOR
ASSESSMENT**

IVP CONTACT INFO

If you have issues to be discussed, things to be clarified, suggestions for the board of the PhD programme, please contact your representatives in advance of next meeting.

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Further information:

For further information, questions or contributions to the newsletter please contact Camilla Elisabeth Søgaard Ebert, camilla.ebert@sund.ku.dk

The next IVP Advisory Board Meeting is scheduled for Friday 6 December 2019.

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