

Overview of CANS-related research groups + CVs from group leaders and interim scientific leader team



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Microbial Pharmacology and Population Biology (MicroPop)

Group leader: Prof. Pål J. Johnsen (paal.johnsen@uit.no; Tel: +47 47688974). Department of Pharmacy, Faculty of Health Sciences.

Webpage: https://en.uit.no/forskning/forskningsgrupper/gruppe?p_document_id=340314

Main research topics/activities: We work on microbial evolution with emphasis on evolution, selection and spread of antimicrobial resistance. We are also from a basic science point of view interested in how and why bacteria engage in horizontal gene transfer.

Current staff: Prof./ass. Prof. (n=1.45), postdoc/researcher (n=5), PhD (n=3), Tech/admin (n=0)

Ongoing international collaborations: Bruce Levin, Emory University USA; Dan Andersson, Uppsala University, Sweden; Daniel Rozen, Leiden University, Netherlands; Adam P Roberts, Liverpool School of Tropical Medicine, UK; Niels Frimodt-Møller, Rigshospitalet, Copenhagen, Denmark; Hanne Ingmer, Danish Technical University, Copenhagen, Denmark; William B. Hanage Harvard, USA; Jeffrey Townsend Yale, USA.

External research funding last three years: Northern-Norway Regional Health Authorities (HelseNord 2015); Joint Programme Initiative on Antimicrobial Resistance (JPI-AMR, Coordinator) 2016; NFR FRIBIOMED and NFR BedreHelse 2017; Thon Awards- Nordic Research Project 2018.

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CV Group leader MicroPop:

Tel: + 47 47688974

Email: paal.johnsen@uit.no

Professor, Research Group Leader

Pål Jarle JOHNSEN

Date of Birth 31/03/74

Norwegian citizens

Married, 3 children



Education

- 2004 : PhD, University of Tromsø (UiT)
- 2000: MSc, UiT
- 1998: BSc, University of Trondheim/UiT

Employment

- 2015 -: Professor, Research group leader: Microbial Pharmacology and Population Biology Research group (MicroPop). UiT- The Arctic University of Norway. Team
- website: https://en.uit.no/forskning/forskningsgrupper/gruppe?p_document_id=340314
- 2008-15: Associate professor, UiT
- 2006-08: Visiting postdoc, Bruce Levin Lab. Emory University, Atlanta, USA
- 2006-08: Personal Postdoctoral Fellowship, Norwegian Research Council (FRIPRO)
- 2004-06: Post-Doctoral Fellowship. Prof. Kaare M. Nielsen Lab, UiT, Norway.

Main research topics

Microbial evolution: Evolution, selection and spread of antimicrobial resistance; selection inversion strategies for alternative use of antimicrobials; horizontal gene transfer.

Awards and Distinctions

- Olav Thon Awards 2018. Nordic collaborative research project (10 mio NOK)
- Research award 2017. Faculty of Health Sciences, UiT-The Arctic University of Norway.

Meeting and Conference organization

- Chair/Discussion leader at ECCMID 2017 / Gordon Research conference Pop. Biology 2013.
- Invited speaker (Wennergren Symposium 2018, Stockholm, University of Exeter UK, 2015,
- ETH-Zürich, Switzerland 2011, University College London, UK 2009).

32 peer reviewed publications, 1414 citations (44 per paper), H-index:19 (Google Scholar 05-2018).

5 most relevant publications within last five years

1. Podnecky, N., Fredheim EGA., Kloos J., Sorum V., Primicerio R., Roberts AP., Rozen DE., Samuelsen Ø., **PJ. Johnsen**. Conserved collateral susceptibility networks in diverse clinical strains of Escherichia coli. BioRxiv: doi: <https://doi.org/10.1101/248872>, Under consideration Nature Communications
2. Di Luca MC., Sørum V., Starikova I., Kloos J., Hülter N., Naseer U., **Johnsen PJ.**, Ø. Samuelsen. Low biological cost of carbapenemase-encoding plasmids following transfer from Klebsiella pneumoniae to Escherichia coli. J Antimicrob Chemother, 2017 72:1 75-89
3. Harms K., Lunnan A., Hülter N., Mourier T., Vinner L., Andam CP., Martiinen P., Fridholm H., Hansen AJ., Hanage WP., Nielsen KM., Willerslev E., **PJ. Johnsen**. Substitutions of short Heterologous DNA segments of intragenomic or extragenomic origins produce clustered genomic polymorphisms. Proc Nat Acad Sci, 2016 113:52 15066-071
4. Engelstädter J., Harms K., and **PJ. Johnsen**. The evolutionary dynamics of integrons in changing environments ISME J, 2016. Jun;10(6):1296-1307
5. Levin B. R., Baquero F., **PJ Johnsen**. A Model-Guided Analysis and Perspective on the Evolution and Epidemiology of Antibiotic Resistance and its Future. Invited. Current Opin Microbiol. 2014: Jun;19:83-9.



Drug Transport and Delivery Research Group (DTDRG)

Group leader: Professor Dr. Natasa Skalko-Basnet (Email: natasa.skalko-basnet@uit.no; phone: +4777646640). Department of Pharmacy, Faculty of health sciences

Webpage: https://en.uit.no/forskning/forskningsgrupper/gruppe?p_document_id=338459

Main research topics/activities: focused interests in drug transport across biological membranes, and drug delivery systems as means for improved drug bioavailability. The group aims at gaining a deeper understanding of transport processes of drugs and drug delivery systems destined for oral, parenteral and topical route of drug administration, enabling improved therapeutic drug effects and reduced toxic effects by increasing the drug targeting. Specific focus on localized treatment of skin and vaginal infections, thereof reducing the systemic exposure to antimicrobial substances. In addition, delivery of natural origin antimicrobials is one of the pipelines in current research.

Current staff:

Current ongoing international collaboration: The group has a very strong international network, among others Regine Suess, University of Freiburg, Germany; Barbara Luppi, University of Bologna, Italy; Jyrki Tapio Heinämäki, University of Tartu, Estonia; Adyary Fallarero, University of Helsinki, Finland; Jelena Filipovic-Grcic and Zeljka Vanic (Pavelic), University of Zagreb, Croatia; Albin Kristl, University of Ljubljana, Slovenia;

External research funding last three years: Northern Norway regional Health Authorities (Helse Nord - Targeted therapy of genital chlamydia infections: acting locally, efficiently and patient-friendly). RCN (project numbers 221648/O30, BIOTEK2021) 2013-2017 and 228200/O70, NANO2021) 2013-2018. EU HORIZON 2020: Research and Innovation Framework Program: Super-resolution optical microscopy of nanosized pore dynamics in endothelial cells "DeLIVER". Mobility grant: NordicUniversity HUB: Nordic POP Patient Oriented Products (2018-2022)

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CV Group leader DTDRG:

Tel: +4777646640

Email: natasa.skalko-basnet@uit.no

Professor, Head of Research Group

Natasa SKALKO-BASNET

Date of Birth 27/11/63

Croatian citizenship

Married, 1 child



Education

- 1999 University Habilitation, Faculty of Pharmacy and Biochemistry, University of Zagreb, Croatia
- 1995 PhD: 18.01.1995.
The School of Pharmacy, University of London, U.K.
- 1990 Master in Pharmaceutical Sciences
Faculty of Pharmacy and Biochemistry, University of Zagreb, Croatia

Employment

- 2008-present Professor and Head of Drug Transport and Delivery Research Group, Faculty of Health Sciences, University of Tromsø The Arctic University of Norway, Norway
- 2001-2008 Professor and Program Director, The School of Pharmaceutical and Biomedical Sciences, Pokhara University, Nepal

Main research topics

Localized drug therapy of vaginal and skin infections, wound healing, drug targeting, controlled drug release, nanomedicine, drug delivery

Awards and Distinctions

- 1997/8 Alexander von Humboldt Foundation Fellow at Pharmazeutisches Institut, University of Freiburg, Germany (15 months)
- 1991-1994 Overseas Research Award Scheme, PhD position, University of London, U.K. (3 years)

Meeting and Conference organization

2012 9th Central European Symposium on Pharmaceutical Technology, September 2012, Dubrovnik, member of scientific advisory board, 300 participant

93 peer-reviewed publications; h-index: 26, total citation: 2078 (Scopus, May 2018)

ResearcherID: A-4117-2012

5 most relevant publications within last five years:

1. M. W. Jøraholmen, Ž. Vanić, I. Tho and **N. Škalko-Basnet** (2014) Chitosan-coated liposomes for topical vaginal therapy: Assuring localized drug effect, *International Journal of Pharmaceutics*, 472, 94-101.
2. T. Andersen, S. Bleher, G. Eide Flaten, I. Tho, S. Mattsson and **N. Škalko-Basnet** (2015) Chitosan in mucoadhesive drug delivery: Focus on local vaginal therapy, *Marine Drugs*, 35, 222-236.
3. M. W. Jøraholmen, P. Basnet, G. Acharya and **N. Škalko-Basnet** (2017) PEGylated liposomes for topical vaginal therapy improve delivery of interferon alpha. *European Journal of Pharmaceutics and Biopharmaceutics*, 113, 132-139.
4. T. Andersen, E. Mishchenko, G. Eide Flaten, J. U. Ericson Sollid, S. Mattsson, Ingunn Tho and **N. Škalko-Basnet** (2017) Chitosan-based nanomedicine to fight genital Candida infections: Chitosomes. *Marine Drugs*, 15, 64
5. S. Terunullo, L. de Weerd, A. M. Holsæter, G. E. Flaten and **N. Škalko-Basnet** (2017) Going skin deep: a direct comparison of penetration potential of lipid-based nanovesicles on the isolated perfused human skin flap model, *European Journal of Pharmaceutics and Biopharmaceutics*, 121, 14-23.



Identification and Prevention of Suboptimal medicine use (IPSUM)

Group leader: Lars Småbrekke, Associate professor (Tel: +47 77645792 Mob: +47 99249663 lars.smabrekke@uit.no), Department of Pharmacy, Faculty of Health Sciences,

Webpage: https://uit.no/forskning/forskningsgrupper/gruppe?p_document_id=406443

Main research topics/activities: Pharmacoepidemiology - Population level use of antimicrobial therapy and low dose naltrexone. Clinical pharmacy - Hospital treatment of community acquired pneumonia. Optimization of medical treatment in patients with heart disease. Medical treatment among the elderly.

Current staff: Prof/Ass. Prof (n=6), researcher/postdoc (n=1), PhD (n=3), tech./admin. (n=0) :

Current ongoing international collaboration: Miriam Ekstedt - Linné University, Johanna Westbrook – Macquary University, Hannah Morrisey - Wolverhampton University, Tim Chen - Sidney University, Alberto Vaccheri - Bologna University, Jim Slattery - European Medical Agency.

External research funding last three years: Northern Norway Regional Health Authorities (Helse Nord RHF), Farmasøytisk Selskap, Norske kvinners sanitetsforening.

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CV Group leader IPSUM:

Lars SMÅBREKKE

Tel: +47 77645792

Date of birth 18/01/59

Mob: +47 99249663

Citizenship: Norwegian

E-mail: lars.smabrekke@uit.no

Associate professor



Education

1985 Candidatus pharmaciae. University of Oslo (UiO)

1999 Master of Public Health. University of Tromsø (UiT)

2009 PhD. UiT

Employment

1986-98 Hospital pharmacy. University hospital North Norway

1998-2008 Head of Regional Drug Information Centre of North Norway

2008-09 PhD student

2009- UiT. Associate professor. Head of IPSUM Research group

Awards and distinctions

2003 The best research project in primary health care in Norway (Intervention to reduce the use of antibiotics in treatment of acute otitis media). Awarded by the Norwegian Medical Association

Peer reviewed publications 25 (PubMed 05-18); Citations: 211 (Web of Science); h-index (Scopus)

ORCID: 0000-0001-6475-3368

Five most relevant publications within last five years

1. Utnes J, **Småbrekke L**, Garcia BH. MAT-CAP: a novel medication assessment tool to explore adherence two clinical practice guidelines in community acquired pneumonia. *Pharmacoepidemiol Drug Saf* 2014;23 (9): 933-41.
2. Zykov I, Sundsfjord A, **Småbrekke L**, Samuelsen Ø. The antimicrobial activity of mecillinam, nitrofurantoin, temocillin and fosfomycin and comparative analysis of resistance patterns in a nationwide collection of ESBL-producing *Escherichia coli* in Norway 2010-2011. *Infectious Diseases* 2015. <http://dx.doi.org/10.3109/23744235.2015.1087648>
3. Høgli JU, Garcia BH, Skjold F, Skogen V, **Småbrekke L**. An audit and feedback intervention study increased appropriate antibiotic prescribing at a Norwegian hospital. *BMC Infect Dis* 2016;16(1):96. doi: 10.1186/s12879-016-1426-1.
4. Haugen P, Simonsen GS, Primicerio R, Furberg AS, **Småbrekke L**. Antibiotics to outpatients in Norway – assessing effect of latitude and municipality population size using quantile regression in a cross-sectional study. *Pharmaceutical Statistics* 2018; 17: 4-11
5. Zykov IN, Samuelsen Ø, Jakobsen L, **Småbrekke L**, Andersson DI, Sundsfjord A, Frimodt-Møller N. Pharmacokinetics and Pharmacodynamics of Fosfomycin and its Activity against ESBL-, Plasmid-mediated AmpC- and Carbapenemase-Producing *Escherichia coli* in a Murine Urinary Tract Infection Model. *Antimicrob Agents Chemother* 2018: AAC.02560-17. doi: 10.1128/AAC.02560-17



Natural Products and Medicinal Chemistry

Group leader substitute / CANS representative: Prof. Morten B. Strøm (morten.strom@uit.no; Tel. +47 93839021) and **Group leader:** Assoc. prof. Guro Forsdahl (guro.forsdahl@uit.no; Tel: +47 776 46 656), Department of Pharmacy Faculty of Health Sciences.

Webpage: https://en.uit.no/forskning/forskningsgrupper/gruppe?p_document_id=340333

Main research topics/activities: We work on design and synthesis of peptides, peptidomimetics and *marine natural product mimics* (MNPMs) with activity against multidrug resistant (MDR) bacteria and compounds with antibiofilm activity. The group has also research projects within the fields of proteomics, metabolomics and pharmaceutical analytical chemistry.

Current staff: Prof./ass. Prof. (n=4), postdoc/researcher (n=0), PhD (n=3), Tech./admin. (n=2)

Current ongoing international collaborations: Assoc. prof. Christian Hedberg (UMEÅ University, Sweden), prof. Thomas Moritz (Swedish Metabolomics Centre, UMEÅ, Sweden).

External research funding last three years: RCN – FRINATEK, MABIT, Novo Nordic Trust.

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CV Co-group leader Natural Products and Medicinal Chemistry: Morten B. STRØM

Professor
Tel: + 47 938 39 021
E-mail: morten.strom@uit.no
ORCID: 0000-0003-1973-0078

Date of Birth 16/04/71
Norwegian citizen
Married, 2 children



Education

- 2001 : Dr. Scient., Dept. of chemistry, University of Tromsø (UiT).
- 1996 : Cand. Scient, Dept. of chemistry, UiT.
- 1994 : Cand. Mag. Dept. of chemistry, UiT.

Employment

- 2012 - : **Professor** at the Natural Products and Medicinal Chemistry Research Group, Department of Pharmacy, Faculty of Health Sciences, UiT.
- 2002 –12: **Associate Professor** at the Natural Products and Medicinal Chemistry Research Group, Department of Pharmacy, Faculty of Health Sciences, UiT.
- 2001 – 02: Post doc. Department of chemistry, UiT, Norway.
- 1996: Researcher at the University Hospital of North Norway

Main research topics

- Design and synthesis of antimicrobial, antibiofilm and anticancer peptides, peptidomimetics and marine natural product mimics – *development of lead-compounds as future drug-candidates, optimization of potency and pharmacokinetic properties, and establishment of pharmacophore models*

Awards and Distinctions

- Best Teachers Award, Department of Pharmacy (UiT) 2010.

34 peer reviewed publications; patents (n=4), 1251 citations (36 per paper), H-index: 19 (Research gate 05-2018).

5 most relevant publications within last five years

6. Ausbacher, D.; Fallarero, A.; Kujala, J.; Määttänen, A.; Peltonen, J.; **Strøm**, M.B.; Vuorela, P.M. Staphylococcus aureus biofilm susceptibility to small and potent α , β -amino acid derivatives. *Biofouling*. 2014, 30, 81-93.
7. Hanski, L.; Ausbacher, D.; Tiirola, T.; **Strøm**, M.B.; Vuorela, P.M. Amphipathic α , β -amino acid derivatives suppress infectivity and disrupt the intracellular replication cycle of Chlamydia pneumoniae. *PLoS ONE*. 2016, 11(6): e0157306. doi:10.1371/journal.pone.0157306.
8. Paulsen, M.H.; Engqvist, M.; Ausbacher, D.; **Strøm**, M.B.; Bayer, A. Efficient and scalable synthesis of α , β -disubstituted α -amino amides. *Org. Biomol. Chem*. 2016, 14, 7570-7578.
9. Igumnova, E.M.; Mishchenko, E.; Haug, T.; Blencke, H.-M.; Ericson Sollid, J.U.; Fredheim, E.G.Aa.; Lauksund, S.; Stensvåg, K.; **Strøm**, M.B. Synthesis and antimicrobial activity of small cationic amphipathic aminobenzamide marine natural product mimics and evaluation of relevance against clinical isolates including ESBL-CARBA producing multi-resistant bacteria. *Bioorganic & Medicinal Chemistry*. 2016, 24, 5884-5894.
10. Bakka, T.A.; **Strøm**, M.B.; Andersen, J.H.; Gautun, O.R. Methyl propiolate and 3-butyne: starting points for synthesis of amphiphilic 1,2,3-triazole peptidomimetics for antimicrobial evaluation. *Bioorganic & Medicinal Chemistry*. 2017, 25, 5380-5395.



Oral ecology

Group leader: Associate professor, Mohammed Al-Haroni, Mohammed. (Al-Haroni@uit.no; Tel: +4777649151). Department of Clinical Dentistry, Faculty of Health Sciences.

Webpage: https://en.uit.no/forskning/forskningsgrupper/gruppe?p_document_id=370974

Main research topics/activities: The group current focus is on antibiotic resistance among oral streptococci mediated by mobile genetic elements like Tn916/Tn1545 family and the fitness cost of these elements. Proper use of antibiotics in dental practice is another research topic in the group.

Current staff: Prof./ass. Prof. (n=1), postdoc/researcher (n=1), PhD (n=1), Tech./admin. (n=1)

Current ongoing international collaboration: Temple University, USA and Liverpool School of Tropical Medicine.

External research funding last three years: Norwegian Directorate of Health, Northern-Norway Regional Health Authorities, Centre for International Education (SIU)

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CV Group leader Oral Ecology:

Tel: +47 77649151

Email: Mohammed.Al-Haroni@uit.no

Associate professor

Mohammed Al-Haroni

Date of Birth 03/08/76

Norwegian citizenship

Married, 2 children



Education

- 2014: Fellow of Higher Education Academy (FHEA), UK
- 2007: PhD degree in basic oral sciences (Oral Microbiology) – University of Bergen, Norway
- 2000: Doctor of Dental Surgery (DDS) – University of Science and Technology, Yemen

Employment

- Since 2014: Associate professor, Department of Clinical Dentistry, Faculty of Health Sciences, UiT The Arctic University of Norway, Norway.
- 2012-2014: Marie Curie research fellow, University College London, UK.
- 2009-2012: Post-doctoral position, University of Tromsø, Norway.
- 2008: Post-doctoral position, University of Tromsø, Norway.
- 2003-2007: Doctoral Research Fellow, University of Bergen, Norway.

Main research topics

Antibiotic resistance among oral bacteria – Mobile genetic elements in oral streptococci and their fitness cost – Antibiotic use in dental practice – Antibiotic stewardship program in dentistry

Awards and Distinctions

- Marie-curie research fellowship (EU Framework 7, 2011)

Meeting and Conference organization

- Mini-symposium in antibiotic resistance (2017).
- Workshop on antimicrobial prescription in dental practice (2018).

16 peer-reviewed Publications; h-index: 11, total citation: 494 (Google Scholar, 14.05.2018)

ORCID: 0000-0002-7347-7016

5 most relevant publications within last five years

1. Lunde T, Roberts AP, **Al-Haroni M***. Determination of Copy Number and Excision Rate of Tn916-Tn1545 family in oral streptococci by Digital Droplet PCR. J Oral Microbiol. 2018 (revision is submitted). *corresponding author
2. Novais C, Tedim AP, Lanza VF, Freitas AR, Silveira E, Escada R, Roberts AP, Al-Haroni M, Baquero F, Peixe L, Coque TM. Co-diversification of Enterococcus faecium core genomes and ampicillin-resistant PBP5: evidences of pbp5 horizontal transfer". Front Microbiol. 2016 Oct 6;7:1581
3. Halboub E, Alzaili A, Quadri MF, **Al-Haroni M**, Al-Obaida MI, Al-Hebshi NN. Antibiotic Prescription Knowledge of Dentists in Kingdom of Saudi Arabia: An Online, Country-wide Survey. Contemp Dent Pract. 2016 Mar 1;17(3):198-204.
4. Dhabaan GN, AbuBakar S, Cerqueira GM, **Al-Haroni M**, Pang SP, Hassan H. Imipenem Treatment Induces Expression of Important Genes and Phenotypes in a Resistant Acinetobacter baumannii Isolate. Antimicrob Agents Chemother. 2015 Dec 14;60(3):1370-6. doi: 10.1128/AAC.01696-15.
5. Starikova I, **Al-Haroni M**, Werner G, Roberts A, Sørnum V, Nielsen K; Johnsen P. Fitness costs of various mobile genetic elements in Enterococcus faecium and Enterococcus faecalis. J Antimicrob. Chemother. 2013 Dec;68(12):2755-65.



Research group for Host-Microbe Interaction (HMI)

Group leader: Professor Mona Johannessen (mona.johannessen@uit.no, Tel: +4777646225).
Department of Medical Biology, Faculty for Health Science

Webpage: https://en.uit.no/forskning/forskningsgrupper/gruppe?p_document_id=395045

Main research topics/activities: HMI searches novel and innovative bacterial targets for future infection prevention and treatment. We perform multilevel (resistance gene, mobile genetic element, clone) molecular epidemiological studies of antimicrobial resistance and/or colonization determinants in important human pathogens including *S. aureus*, *E. faecium/faecalis* and/or *Klebsiella pneumoniae*. The relevant targets are tested in molecular and functional assays as well as in animal infection models. In addition, we explore the use of genomics in rapid diagnostic microbiology and contribute with MIC- and mode of action assays in antimicrobial drug discovery projects.

Current staff: Prof./ass. Prof. (n=5.6), postdoc/researcher (n=2), PhD (n=6.5), Tech./admin. (n=2)

Current ongoing international collaboration: Professor Victor Nizet <http://nizetlab.ucsd.edu/> University of California San Diego. Professor Sun Nyunt Wai <http://www.molbiol.umu.se/english/research/researchers/sun-nyunt-wai/> Umeå University, Sweden. Professor Joan Geoghegan https://www.tcd.ie/Microbiology/research/j_geoghegan.php Trinity College, Dublin, Ireland. Professor Rob Willems , <https://www.umcutrecht.nl/en/Research/Researchers/Willems-Rob-RJL> Utrecht Medical Center, Netherland. Professor Jos van Strijp <https://www.umcutrecht.nl/en/Research/Researchers/van-Strijp-Jos-JAG> Utrecht Medical Center, Netherland

External research funding last three years: Northern Norway Regional Health Authorities, JPI-AMR, NORAD.

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CV Group leader HMI:

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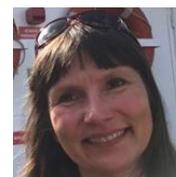
Professor and Head of HMI at UiT

Mona JOHANNESEN

Date of Birth 30/06/66

Norwegian citizenship

Married, 3 children



Education

- 2005 : PhD, UiT-The Arctic University of Norway (UiT)
- 1992 : Educational science, UiT
- 1991 : MSc Microbiology/Molecular biology- UiT

Employment

- 2014 -: Professor. IMB, UiT
- 2006 - 2014: Associate professor, IMB, UiT
- 2002-2005: PhD student/ Engineer, IMB, UiT
- 1995-2004: Engineer - genetics/biochemistry/ virology, UiT
- 1992-1995: Engineer- microbiology, UiT

Main research topics

Molecular interactions between host and microbe, such as adhesion, immune evasion and extracellular vesicles.

Meeting and Conference organization

- Invited speaker in international meetings (ISSSI, ECCMID)
- Symposium on Bacterial Membrane vesicle- Functions and implications- Tromsø -2018
Head of organizing committee

41 peer-reviewed Publications; h-index: 20, total citation: 2312 (Google Scholar May 12th-2018)

<https://scholar.google.no/citations?user=mj65POEAAAAJ&hl=no>

5 most relevant publications within last five years

1. Askarian F, Lapek JD, Dongre M, Tsai CM, Kumaraswamy M, Kousha A, Valderrama JA, Ludviksen JA, Cavanagh JP, Uchiyama S, Mollnes TE, Gonzalez DJ, Wai SN, Nizet V, **Johannessen M** (2018) *Staphylococcus aureus* Membrane-derived Vesicles Promote Bacterial Virulence and Confer Protective Immunity in Murine Infection Models. **Frontiers in Microbiology** (2018) Feb 20;9:262. doi: 10.3389/fmicb.2018.00262.
2. Hanssen AM, Kindlund B, Stenklev NC, Furberg AS, Fismen S, Olsen RS, **Johannessen M**, Sollid JUE. Localization of *Staphylococcus aureus* in Tissue from the Nasal Vestibule in Healthy Carriers. **BMC microbiology** (2017) 17(1):89. doi: 10.1186/s12866-017-0997-3.
3. Askarian F, Ajayi C, Hanssen AM, van Sorge NM, Pettersen I, Diep DB, Sollid JUE, **Johannessen M**. The interaction between *Staphylococcus aureus* SdrD and desmoglein 1 is important for adhesion to host cells. **Scientific Reports** (2016) 6: 22134.
4. Askarian F, Uchiyama S, Valderrama JA, Ajayi C, Sollid JU, van Sorge NM, Nizet V, van Strijp JA, **Johannessen M**. Serine-Aspartate Repeat Protein D Increases *Staphylococcus aureus* Virulence and Survival in Blood. **Infection and Immunity** (2016) 85(1). pii: e00559-16. doi: 10.1128/IAI.00559-16.
5. Askarian F, van Sorge NM, Sangvik M, Beasley FC, Henriksen JR, Sollid JUE, van Strijp JAG, Nizet V and **Johannessen M**. A *Staphylococcus aureus* TIR Domain Protein Virulence Factor Blocks TLR2-Mediated NF-κB Signaling. **Journal of Innate Immunity** (2014) 6; 485-498.



Molecular Pharmacology and Toxicology

Group leader: prof. Ingebrigt Sylte (ingebrigt.sylte@uit.no; Tel: +4777644705). Department of Medical Biology, Faculty of Health Sciences.

Webpage: https://en.uit.no/forskning/forskningsgrupper/gruppe?p_document_id=355978

Main research activities: The research group is using a combination of experimental and theoretical methods to study molecular mechanisms of drug target interactions. The main research activities include: (i) Molecular mechanism of bacterial and human zinc proteases (ii) Identify new inhibitors of bacterial virulence factors.

Current staff: Prof./ass. Prof. (n=2.5), postdoc/researcher (n=0), PhD (n=2), Tech./admin. (n=0.5)

Current ongoing international collaboration: *A. Bojarski* and *A. Pilc*, Institute of Pharmacology, Polish Academy of Science, Cracow, Poland. *Z. Chilmonczyk*, National Medicines Institute, Warszawa, Poland, *M. Fendt*, Institute of Pharmacology & Toxicology, Otto-von-Guericke University Magdeburg, Germany. *N. Kurita*, Toyohashi University of Technology, Toyohashi, Japan. *O. O. Odunuga*, Stephen F. Austin State University, SFA Station, Nacogdoches, TX, USA. *A. Rossello*, Dipartimento di Farmacia, Università di Pisa, Pisa, Italy.

External funding (last 3 years): Northern-Norway Regional Health Authorities (Helse-Nord project - HNF1426-18 (2018-2020), PI. NFR project no. 268419/E10 (20017-2019), project partner. NFR project no. 221455/E40 (2015-2017), project partner.

Overview of CANS-related research groups + CVs from group leaders and its scientific leader team



CV Group leader Molecular Pharmacology and Toxicology: Ingebrigt SYLTE

Tel: +4777644705

Date of birth: 14/11/60

Email: Ingebrigt.Sylte@uit.no

Norwegian citizenship

Professor UiT –The ArcticUniversity of Norway

Married, 2 children



Education

- 1992 PhD, disputation 12.10.1992.
Faculty of Medicine/Institute of Medical Biology/Department of Pharmacology, University of Tromsø, (present name UiT - The Arctic University of Norway).
- 1987 Master of Chemistry, Institute of Chemistry, AVH, University of Trondheim (Present name Norwegian University of Science and Technology), Norway

Employment

- 2001- Professor of Pharmacology, Faculty of Health Sciences, UiT.
- 1999-2001 Associate Professor of Pharmacology, Faculty of Medicine, University of Tromsø, Norway.
- 1998-1999 Post doctor, Faculty of Medicine, University of Tromsø, Norway.
- 1993-1997 Researcher, Faculty of Medicine, University of Tromsø, Norway.
- 1988-1992 PhD fellow, Faculty of Medicine, University of Tromsø, Norway.

Main research topics

Molecular mechanism of bacterial and human zinc proteases - Inhibitors of bacterial virulence factors
- Molecular mechanisms of receptors and transporters in the CNS - New molecules with a therapeutic potential in the treatment of psychiatric disease.

Awards and distinctions

- 2010 The research award (highest scientific production), Faculty of Health Sciences, UiT - The Arctic University of Norway.

126 per reviewed publications (ORCID), one patent application, h-index: 25 (scopus), total citation: 2339 (Researchgate, 09/05/18). ORCID-ID: 0000-0002-3290-3736.

Five most relevant publications for CANS activity within the last five years

1. **Sylte I**, Dawadi R, Malla, N., von Hofsten S., Nguyen T-M., Solli AI., Berg E., Adekoya OA., Svineng G. and Winberg JO. The selectivity of galardin and an azasugar-based hydroxamate compound for human matrix metalloproteases and bacterial metalloproteases, *PlosONE*, in press, 2018.
2. Ara A, Kadoya R, Ishimura H, Shimamura K, **Sylte I**. and Kurita N. Specific interactions between zinc metalloproteinase and its inhibitors: Ab initio fragment molecular orbital calculations. *Journal of Molecular Graphics & Modelling*. 2017 Aug;75:277-286. doi: 10.1016/j.jmgm.2017.05.013.
3. Sjøli, S., Nuti, E., Casalini, F., Bilotto, I., Rosello, A., Winberg, J-O, **Sylte, I.** and Adekoya O.A. Synthesis, experimental evaluation and molecular modelling of hydroxamate derivatives as zinc metalloproteinase inhibitors, *European Journal of Medicinal Chemistry*, 2016, 108, 141-153.
4. Odunuga O.O., Adekoya, O.A. and *Sylte, I.* High-level expression and Purification of Pseudolysin, the extracellular elastase of *Pseudomonas aeruginosa*, in *Escherichia coli* and its purification. *Protein Expression and Purification*, 2015, (05/2015), DOI: 10.1016/s.pep.2015.05.005.
5. Adekoya, O., Sjøli, S., Wuxiuer, Y., Bilotto, I., Marques, SM., Santos, MA., Nuti, E., Cercignani, G., Rossello, A., Winberg, JO, and **Sylte I.** Inhibition of pseudolysin and thermolysin by hydroxamate-based MMP inhibitors. *European Journal of Medicinal Chemistry*, 2015, 89, 340-348.



Pediatric Research group - Infection

Steering group:

- Professor Trond Flægstad, MD, PhD, trond.flaegstad@unn.no. +4792455047
- Professor Claus Klingenberg, MD, PhD, claus.klingenberg@unn.no. +4791563167
- Researcher Pauline Cavanagh, PhD, Pauline.cavanagh@uit.no. +40498490

Institute of Clinical Medicine, Faculty of Health Sciences, UiT, and Department of Paediatrics, UNN

Webpage: https://uit.no/forskning/forskningsgrupper/gruppe?p_document_id=340946

Main research topics/activities:

Infections and antibiotics to neonates: we are collaborating with the Norwegian Neonatal Network. By using high quality, population based epidemiological data we aim to improve therapy for vulnerable neonates. We also perform own studies on long term follow up of side effects (gut, antibiotic resistance and ototoxicity).

Gut microbiota of preterm infants and in children with HIV: We aim to detect the impact of antibiotic and probiotic treatment, in different paediatric populations. In children with HIV we are specifically studying the effect of azithromycin given to prevent respiratory problems in HIV-positive African children. In preterm infants the effects of probiotics are of great interest as probiotics are increasingly used in order to prevent gut inflammation.

Coagulase negative staphylococci (CoNS) - pathogenicity and antibiotic resistance: we focus on *Staphylococcus haemolyticus* (SH) as a model organism of opportunistic nosocomial infections. We are currently comparing genomes of clinical and commensal SH-isolates, in order to identify novel virulence factors like surface proteins and membrane vesicles. Moreover, SH is often multi-resistant to antibiotics leaving glycopeptides as last "hope". We are also examining mechanisms responsible for glycopeptide resistance development.

Current staff: Prof./ass. Prof. (n=2.5), postdoc/researcher (n=3), PhD (n=3), Tech./admin. (n=1)

Current ongoing international collaboration: Claus Moser, Rigshospitalet, Copenhagen. Marc Nicol, University of Cape Town, Vladimir Vimberg and Gabriella Novotna, Laboratory for Biology of Secondary Metabolism Antibiotic resistance group Institute of Microbiology CAS, Czech Republic, John Van den Anker, Children's National Medical Center, Washington, DC

External research funding last three years: Norwegian Research Council, Northern-Norway Regional Health Authorities (Helse Nord), Norwegian Childhood Cancer Foundation

Overview of CANS-related research groups + CVs from group leaders and its scientific leader team



CV Pediatric Research group steering committee member: Trond FLÆGSTAD

Tel: +47 92455047

Email: trond.flægstad@unn.no

Professor/senior consultant

Date of Birth 09/11/52

Norwegian citizenship



Education

- 1988-89: Post.doc. Univ of California, Sand Diego, USA
- 1988: PhD, UiT-The Arctic University of Norway, Tromsø
- 1988: Specialist in Paediatrics, Norwegian Paediatric Association
- 1978: Medical doctor, University of Trondheim, Norway Germany

Employment

- 1992 -: Professor in paediatrics at UiT-the Arctic University of Norway and senior consultant, Department of pediatrics, University Hospital of North Norway (UNN)
- 1981-1992: Fellow, Paediatric Dept., UNN
- Sabbatical stay at Karolinska institutet, Stockholm, Univ of Queensland, Brisbane, Univ of New South Wales, Sydney, University of Cape Town.

Main research topics

Paediatric infections, especially meningococcal infections. Pathogenesis of Coagulase negative staphylococcal infections. Gut microbiota of HIV-patients. Clinical oncology (leukemia), experimental oncology (neuroblastoma).

Awards and Distinctions

Folke Nordbring Award 2002.

Meeting and Conference organization

Invited speaker in several national and international meetings in pediatrics

Organizer and co-organizer, national and international meetings in paediatrics/paediatric oncology.

99 peer-reviewed publications in Pubmed; h-index: 30, total citation: 3484 (Google scholar 05-18)

Google Scholar: <https://scholar.google.com/citations?user=syeClze0-98C&hl=en&oi=ao>

5 most relevant publications within last five years

1. Gonzalez-Martinez C, Kranzer K, McHugh G, Corbett EL, Mujuru H, Nicol MP, Rowland-Jones S, Rehman AM, Gutteberg TJ, Flægstad T, Odland JO, Ferrand RA; BREATHE study team. *Trials*. 2017 Dec 28;18(1):622. doi: 10.1186/s13063-017-2344-2. Azithromycin versus placebo for the treatment of HIV-associated chronic lung disease in children and adolescents (BREATHE trial): study protocol for a randomised controlled trial.
2. Nordheim K, Hovland IH, Kristiansen BE, Kaaresen PI, Flægstad T. *Acta Paediatr*. 2018 Mar;107(3):490-495. doi: 10.1111/apa.14135. Epub 2017 Nov 15. An epidemic of meningococcal disease in children in North Norway in the 1970s and 1980s was dominated by a hypervirulent group B strain.
3. Cavanagh JP, Hjerde E, Holden MT, Kahlke T, Klingenberg C, Flægstad T, Parkhill J, Bentley SD, Sollid JUJ. *Antimicrob Chemother*. 2014 Nov;69(11):2920-7. doi: 10.1093/jac/dku271. Epub 2014 Jul 17. Whole-genome sequencing reveals clonal expansion of multiresistant *Staphylococcus haemolyticus* in European hospitals.
4. Cavanagh JP, Granslo HN, Fredheim EA, Christophersen L, Jensen PØ, Thomsen K, Van Gennip M, Klingenberg C, Flægstad T, Moser C.J. *Antimicrob Chemother*. 2013 Sep;68(9):2106-10. doi: 10.1093/jac/dkt161. Epub 2013 May 3. Efficacy of a synthetic antimicrobial peptidomimetic versus vancomycin in a *Staphylococcus epidermidis* device-related murine peritonitis model.
5. Granslo HN, Klingenberg C, Fredheim EA, Acharya G, Mollnes TE, Flægstad T. *Pediatr Res*. 2013 Mar;73(3):294-300. doi: 10.1038/pr.2012.193. Epub 2012 Dec 11. *Staphylococcus epidermidis* biofilms induce lower complement activation in neonates as compared with adults.

Overview of CANS-related research groups + CVs from group leaders and its scientific leader team



CV Pediatric research group steering committee member: Claus KLINGENBERG

Tel: +47 91563167

Date of Birth 25/02/67

Email: claus.klingenberg@unn.no

Norwegian citizenship

Professor/lead consultant

Married, 3 children



Education

- 2013: Habilitation/professor, UiT-The Arctic University of Tromsø
- 2006: PhD, UiT-The Arctic University of Tromsø
- 2001: Specialist in Paediatrics, Norwegian Paediatric Association
- 1994: Medical doctor, University of Ulm, Germany

Employment

- Since 2013: Professor in paediatrics at UiT-the Arctic University of Tromsø and lead consultant, Neonatal Intensive Care Unit, University Hospital of North Norway (UNN)
- 2009-2010: Honorary Research fellow, Royal Women's Hospital, Melbourne Australia
- 1999-2009: Consultant, Neonatal Intensive Care Unit, UNN
- 1998-1999: Fellow, Paediatric Dept., Kilimanjaro Christian Medical centre, Moshi, Tanzania
- -1995 -1998: Fellow, Paediatric Dept., UNN

Main research topics

Neonatal/Paediatric infections and antibiotic use (clinical and epidemiology). Pathogenesis of Coagulase negative staphylococcal infections. Gut microbiota of preterm infants.

Awards and Distinctions

Folke Nordbring Award 2002. Quality prize for specialist health care, Norwegian medical association.

Meeting and Conference organization

- Invited speaker in several national and international meetings (mainly related to infections and respiratory management of neonates)
- Organizer and co-organizer of several national meetings in neonatology.

72 peer-reviewed publications; h-index: 21, total citation: 1873 (Google Scholar 05-2018)

Google Scholar: <https://scholar.google.com/citations?user=BoRBEIcAAAAJ&hl=en>

5 most relevant publications within last five years

1. Fjalstad JW, Stensvold HJ, Bergseng H, Simonsen GS, Rønnestad A, **Klingenberg C**. Early onset sepsis and antibiotic exposure in term infants: a nationwide population-based study in Norway. *Pediatr Infect Dis J*. 2016; 35:1-6.
2. Esaiassen E, Fjalstad JW, Juvet LK, van den Anker J, **Klingenberg C**. Antibiotic exposure in neonates and early adverse outcomes - a Systematic Review and Meta-Analysis. *J Antimicrob Chemotherapy* 2017; 72:1858-1870.
3. Esaiassen E, Hjerde E, Cavanagh P, Simonsen G, **Klingenberg C**. Bifidobacterium bacteremia – clinical characteristics and a genomic approach to assess pathogenicity. *J Clin Microbiol*, 2017; 55:2234-48
4. Fjalstad JW, Esaiassen E, Juvet LK, van den Anker J, **Klingenberg C**. Antibiotic Therapy in Neonates and Impact on Gut Microbiota and Antibiotic Resistance Development: A Systematic Review. *J Antimicrob Chemother*. 2017 Nov 22. doi: 10.1093. [Epub ahead of print]
5. Sørensen M, Kuehn A, Mills C, Costello CA, Ollert M, Småbrekke L, Primicerio R, Wickman M, **Klingenberg C**. Cross-reactivity in Fish Allergy; A Double-Blind Placebo-Controlled Food Challenge Trial. *J Allergy Clin Immunol*, 2017; 140: 1170-2.



Bayer group

Group leader: Assoc. Prof. Annette Bayer (Annette.bayer@uit.no; Tel: +47 77644069). Department of chemistry, Faculty of Science and Technology

Webpage: <http://site.uit.no/bayerlab/>

Main research topics/activities: The group is working with structure-based design of carbapenemase inhibitors and has expertise in analysis of inhibitor-enzyme binding, fragment-based inhibitor design and synthesis of inhibitors (in collaboration with the group of H.K.S. Leiros). The group has experience in medicinal chemistry from a series of multi-disciplinary natural-product based drug discovery projects focusing, among others, on anti-bacterials, e.g. membrane active compounds derived from NP scaffold (in collaboration with the group of M.B. Strøm) and anti-biofilm compounds (in collaboration with K. Stensvåg/T. Haug). Furthermore, we develop methods for the formation of carboxylic acids from CO₂.

Current staff: Prof./ass. Prof. (n=1), postdoc/researcher (n=1), PhD (n=2), Tech./admin. (n=0)

Current ongoing international collaboration (main researcher and institution): Mate Erdily (Uppsala University, Sweden) – NMR of carbapenemases, Veronic Piazza (ISMAR – Inst. of marine sciences, Italy) – Biofilm/anti-fouling activity, Troels Skrudstrup (Århus University/ Denmark) – Method development

External research funding last three years: Partner in ICARBA/NFR (carbapenemase inhibitors), Partner in NordCO2/NordForsk (method development), Partner in CHOCO (method development)

Overview of CANS-related research groups + CVs from group leaders and its scientific leader team



CV Group leader Bayer group: Annette BAYER

Phone +47 77 64 40 69; E-mail: annette.bayer@uit.no

Education, positions and affiliations:

Since 2002 Associate Prof, University of Tromsø
2009 Visiting researcher at MPI Dortmund, Germany
2003 Visiting researcher at Uppsala University, Sweden
2002 PhD in organic chemistry, University of Tromsø



Main research topics

Structure-based design of carbapenemase inhibitors, fragment-based inhibitor design, chemical synthesis, natural product based drug discovery, natural product synthesis, synthetic method development.

Awards, distinctions and most important grants

- PI on RCN grant (2013-17, 15 MNOK, Biology-Driven Synthesis – from Marine Natural Products to Commercial Leads - BIOSnet). A national network for drug design based on marine natural products with national, international and industrial (Lead Discovery Centre, Germany) partners
- WP leader (design and synthesis) on RCN grant (2018-21, 5.3 MNOK, *Inhibition of clinically relevant Carbapenemases - ICARBA*)
- WP leader (medicinal chemistry and synthesis) in RCN Proof-Of-Concept project (2015-17, 9 MNOK, *KINSEA*)
- Young Investigator Travel Award to attend the 9th EuCheMS Organic Division Young Investigator Workshop

Meetings and conference organisation

- Invited speaker to: Organikerdagerne 2016, EuCheMS Organic Division Young Investigator Workshop 2017, Annual CADIAC workshop 2016, Ulla and Stig Holmquist Symposium 2018
- Organizer of: Organic Chemistry Winter Meeting 2016; Co-organizer of: MR2018, Organic Chemistry Winter Meeting 2010

32 peer-reviewed publications, 1 patent on MBL inhibitors, 1 patent application on antimicrobial agents, 2 book chapters. H-index = 11, total citations > 480

ORCID-ID: [0000-0003-3481-200X](https://orcid.org/0000-0003-3481-200X)

5 most relevant publications within last five years

1. Akhter S, Lund BA, Ismael A, Lange M, Christopheit T, Leiros HKS, **Bayer A**. Eur. J. Med. Chem. **2018**, 634. *A focused fragment library targeting the antibiotic resistance enzyme - oxacillinase-48: synthesis, structural evaluation and inhibitor design.*
2. Skagseth S, Akhter S, Paulsen MH, Zeeshan M, Samuelsen Ø, Leiros HKS, **Bayer A**. Eur. J. Med. Chem. **135**, **2017**, 159. *Metallo-β-lactamase inhibitors by bioisosteric replacement: preparation, activity and binding.*
3. Vaitla J, Hopmann KH, **Bayer A**. Org. Lett. **2017**, 6688. *Rhodium-Catalyzed Synthesis of Sulfur Ylides via in Situ Generated Iodonium Ylides.*
4. Lund BA, Guttormsen Y, Christopheit T, **Bayer A**, Leiros HKS. J. Med. Chem. **2016**, 5542. *Screening and Design of Inhibitor Scaffolds for the Antibiotic Resistance Oxacillinase-48 (OXA-48) through Surface Plasmon Resonance Screening.*
5. Pandey S, Guttormsen Y, Haug BE, Hedberg C, **Bayer A**. Org. Lett. **2015**, 122. *A Concise Total Synthesis of Breitfussin A and B.*



LacZymes

Group leader: Hanna-Kirsti Schrøder Leiros (hanna-kirsti.leiros@uit.no; Tel +47 77 64 5706.
Department of Chemistry, Faculty of science and technology.

Web page: [LacZymes](#)

Main research topics/activities (short description): Focused on β -lactamases crystal structures since 2007. Antibiotic resistant enzymes to understand their activity relationship (SAR), biochemical behaviour and observed antibiotic resistance profiles. β -lactam inhibitor development, inhibitor screening; and inhibitor mode of action.

Current staff: Prof./ass. Prof. (n=1), postdoc/researcher (n=1), PhD (n=1), Tech./admin. (n=0)

Current ongoing international collaboration:

2018- **Mate Erdelyi**, Professor Department of Chemistry BMC, Uppsala University, Sweden.

2017- **Ranjana Pathania & Naveen Kumar Navani**, Ass. Professors at Department of Biotechnology, Indian Institute of Technology Roorkee, India.

2017- **Joakim Larsson**, Professor at Centre for Antibiotic Resistance Research at the University of Gothenburg (CARE), Sweden.

2008 - James Spencer, Dr and Senior Lecturer in Microbial Pathogenesis, University of Bristol, UK.

External research funding last three years:

2015 WP leader: Crystallography/modelling. BIOTEK2021, PI: P.Rognved, UiO

2018 PI. Inhibition of clinically relevant carbapenemases (ICARBA). (RCN, BEDREHELSE).

Overview of CANS-related research groups + CVs from group leaders and its scientific leader team



CV Group leader LacZymes:

Tel: +47 77 64 5706

Email: hanna-kirsti.leiros@uit.no

Permanent researcher, Ph.D

Hanna-Kirsti SCHRØDER LEIROS

Date of Birth 10/09/71

Norwegian citizenship

Married, 3 children, 1999, 2002, 2008



Education

1999 PhD in structural biology/protein crystallography, *UiT Tromsø*

1995 MSc in protein crystallography, *UiT, Tromsø, Norway*

Employment

2018- Manger of The Norwegian Structural Biology Centre (NorStruct), UiT

2013- Permanent Research scientist, UiT The Arctic University of Norway

2005-2013 Research scientist, UiT The Arctic University of Norway

2003-2005 Post Doc, ESRF, Grenoble, France

2000-2002 Post Doc, Dept. of chemistry, UiT The Arctic University of Norway

01-03.1999 Training and Mobility of Researchers (TMR) grant, EMBL, Grenoble, France

04-07.1999 EMBO-Short term fellowship, EMBL, Grenoble, France

Main research topics

Focused on β -lactamases structures since 2007. Antibiotic resistant enzymes to understand their activity relationship (SAR), biochemical behaviour and observed antibiotic resistance profiles. β -lactam inhibitor development, inhibitor screening; and inhibitor mode of action.

Awards, distinctions and most important grants

2018 PI on RCN grant (5.3 mill NOK) *Inhibition of clinically relevant Carbapenemases.*

2017 WP leader on MOA & enzyme resistance (RCN 5.0 MNOK. FORNY)

2015 WP leader on Crystallography/modelling (RCN 7.5 MNOK. BIOTEK2021)

Meeting and Conference organization

2017- 18 Invited speaker ECCMID 2018, Madrid and 13th β -Lactamase Meeting, Rome.

2016 **Leader of the organizing committee** for Norwegian biochemical society (NBS) contact meeting. Tromsø, 212 participants, <http://www.biokjemisk.no/contact-meeting>- 21.-24.1.2016.

51 peer-reviewed Publications; 1 patents; h-index: 21, citations: 1605 (Google scholar 05-18)

ORCID ID: [0000-0002-2726-6322](https://orcid.org/0000-0002-2726-6322). Full publication list is available [here](#).

5 most relevant publications within last five years

1. Sundus, A., Lund, B. A., Isamel, A., Lange, M., Isaksson, J., Christopheit, T., **Leiros, H.-K.S.** & Bayer, A. (2018) A focused fragment library targeting the antibiotic resistance enzyme-Oxacillinase-48: Synthesis, structural evaluation and inhibitor design., [Eur J Med Chem.](#) **145**, 634-648.
2. Skagseth, S., Akhter, S., Paulsen, M.H., Muhammad, Z., Lauksund S., Samuelsen, Ø., **Leiros, H.-K.S.** & Bayer, A. (2017) Metallo- β -lactamase inhibitors by bioisosteric replacement: preparation, activity and binding. [Eur J Med Chem.](#) **135**, 159-173.
3. Christopheit, T., Albert, A., **Leiros, H.-K.S.** (2016) Discovery of a novel covalent non- β -lactam inhibitor of the metallo- β -lactamase NDM-1, [Bioorg Med Chem.](#) **24**, (13), 2947-2953.
4. Lund, B.A., Christopheit, T., Guttormsenn, Y., Bayer, A., **Leiros, H.-K.S.** (2016). Screening and Design of Inhibitor Scaffolds for the Antibiotic Resistance Oxacillinase-48 (OXA-48) through Surface Plasmon Resonance Screening. [J Med Chem](#) **59**, (11) 5542-5554.
5. Christopheit T., Carlsen, T.J., Helland, R., **Leiros, H.-K.S.** (2015). Discovery of Novel Inhibitor Scaffolds against the Metallo- β -lactamase VIM-2 by Surface Plasmon Resonance (SPR) Based Fragment Screening. [J Med Chem](#) **58**: 8671-8682.



Antimicrobial peptides

Group leader: Prof. John S. Mjøen Svendsen (John-sigurd.svendsen@uit.no; Tel: +47 90095972).
Department of Chemistry, Faculty of Science and Technology.

Webpage:

https://uit.no/om/enhet/ansatte/person?p_document_id=41023&p_dimension_id=88139

Main research topics/activities: Synthetic organic chemistry, asymmetric synthesis, absolute configuration, natural products, peptide synthesis, NMR, mass spectrometry, medicinal chemistry, antimicrobial compounds, anticancer compounds, protein kinase inhibitors drug discovery, drug design, quantitative structure-activity relationships. I am also heading a large transdisciplinary research consortium; DigiBiotics with 6 distinguished PIs that represents a complete research pipeline from biodiscovery to advanced patient-like efficacy models spanning organic synthesis, high-level theoretical modelling and spectroscopic techniques at atomic resolution.

Current staff (including DigiBiotics): Professors (PIs, n=6), Postdoc/researcher (n=7), PhD (n=7), Tech./admin. (n=1)

Ongoing international collaborations: Georg Wagener (Harvard Medical School, USA), Robert E.W. Hancock (UBC, Canada), Hans Vogel (University of Calgary, Canada), Philip Thompson (Monash University, Australia).

External research funding last three years: (2016) Transfaculty strategic programme (UiT), **AntiBioSpec**; (2017) NFR Biotek 2021, Digital Life, **DigiBiotics**, NFR FRIPRO Nano-AMP, NFR NæringsPhD Surface-AMP.

Overview of CANS-related research groups + CVs from group leaders and their scientific leader team



CV Group leader Antimicrobial peptides: John S. Mjøen SVENDSEN

Tel: + 47 90095972

Date of Birth 03/12/58

Email: john-sigurd.svendsen@uit.no

Norwegian citizens

Professor, Research Group Leader

Married, 3 children



Education

- 1985 : Dr. Scient., University of Tromsø (UiT)
- 1982 : Cand. mag. (*Laudabilis prae ceteris*), University of Tromsø (UiT)

Employment (Current)

- 2000 – : Professor, Research group leader: Antimicrobial peptides. UiT- The Arctic University of Norway. Team website: <http://site.uit.no/antibiotics/>
- 2015 – : Chief Scientific Officer, Amicoat AS
- 2014 – : Chief Scientific Officer, Pharmasum Therapeutics AS

Main research topics

Synthetic organic chemistry, asymmetric synthesis, absolute configuration, natural products, peptide synthesis, NMR, mass spectrometry, medicinal chemistry, antimicrobial compounds, anticancer compounds, protein kinase inhibitors drug discovery, drug design, quantitative structure-activity relationships.

Awards and Distinctions

- NATO Science Fellowship (1989)
- UiT Innovation Prize (2017)

More than 90 peer reviewed publications, 3912 citations (average 42 citations per paper), H-index of 34 (Google Scholar 05-2018). Inventor of 32 patent families. Researcher unique identifier (ORCID): orcid.org/0000-0001-5945-6123

5 most relevant publications within last five years

1. Balmukund S Thakkar, **John-Sigurd M Svendsen**, Richard A Engh, Cis/Trans Isomerization in Secondary Amides: Reaction Paths, Nitrogen Inversion, and Relevance to Peptidic Systems. *Journal of Physical Chemistry A* 2017, 121:36 6830-6837
2. J Johannes Eksteen, Dominik Ausbacher, Jaione Simon-Santamaria, Trine Stiberg, Cristiane Cavalcanti-Jacobsen, Imin Wushur, **John S Svendsen**, Øystein Rekdal, Iterative design and in vivo evaluation of an oncolytic antilymphoma peptide, *Journal of medicinal chemistry*, 2017 60:1 146-156
3. Ulli Rothweiler, Wenche Stensen, Bjørn Olav Brandsdal, Johan Isaksson, Frederick Alan Leeson, Richard Alan Engh, **John S Mjøen Svendsen**. Probing the ATP-binding pocket of protein kinase DYRK1A with benzothiazole fragment molecules. *Journal of medicinal chemistry*, 2016 59:21 *Journal of medicinal chemistry*, 2016 60:1 146-156
4. Wenche Stensen, Rob Turner, Marc Brown, Nahid Kondori, **John Sigurd Svendsen**, Johan Svenson. Short Cationic Antimicrobial Peptides Display Superior Antifungal Activities toward Candidiasis and Onychomycosis in Comparison with Terbinafine and Amorolfine. *Molecular pharmaceutics*, 2016 13:10 3595-3600
5. Rozenn Trepos, Gunnar Cervin, Claire Hellio, Henrik Pavia, Wenche Stensen, Klara Stensvåg, **John-Sigurd Svendsen**, Tor Haug, Johan Svenson. Antifouling compounds from the sub-arctic ascidian *Synoicum pulmonaria*: Synoxazolidinones A and C, pulmonarins A and B, and synthetic analogues. *Journal of Natural Products*, 2014. 77:9 2105-2113.



MARBIO

Group leader: Professor Jeanette Hammer Andersen (Jeanette.h.andersen@uit.no, Tel: +47779492).
Norwegian college of fisheries science, Faculty of biosciences, fisheries and economics

Webpage: https://en.uit.no/forskning/forskningsgrupper/gruppe?p_document_id=380005

Main research topics/activities: Marbio is an analytical platform at the University of Tromsø - for screening, isolation and identification of bioactive natural products /molecules. The expertise at Marbio are screening crude extracts/fractions for different bioactivities and performing bioassay-guided purification to isolate active compounds and hence build up a library of natural products. We explore Arctic and sub-Arctic marine organisms, searching for compounds with activities against bacteria, cancer and diabetes as well as compounds with immunomodulatory and antioxidative effects.

Current staff:

Current ongoing international collaboration: Bert Klebl, Lead Discovery Centre, Germany. Donatella De Pascale, IBP-CNR, Italy. Marcel Jaspars, University of Aberdeen, UK. Marla Trindade, University of Western Cape, SA. Fernando Reyes, Medina, Spain. Alan Dobson, University college of Cork, Ireland. Adrianna Ianora, Stazione Zoologica Anton Dohrn, Italy. Peter De Witte, KU Leuven, Belgium

External research funding last three years: ERA-NET marine biotechnology, RCN, EU H2020, Tromsø Research Foundation

Overview of CANS-related research groups + CVs from group leaders and its scientific leader team



CV Group leader MARBIO:

Tel: +47 77 64 92 61

Email: jeanette.h.andersen@uit.no

Professor at UiT

Jeanette Hammer ANDERSEN

Date of Birth 19/11/73

Norwegian citizenship

Married, 2 children



Education

- 2003 : PhD degree in Biochemistry and Molecular Biology – UiT
- 1998 : Master degree in Medical Biochemistry – UiT

Employment

- 2016 -: Professor marine biodiscovery, Faculty of bioscience, fisheries and economics, UiT
- 2011 -: Head of Research, Marbio, UiT, Tromsø, Norway. "Marbio- an analytical platform for natural products". Team website: https://uit.no/forskning/forskningsgrupper/gruppe?p_document_id=380005
- 2004 - 2011: Project manager, Marbio , UiT, Tromsø, Norway
- 2004-2005: Researcher (20%) Department of Microbiology, University Hospital of North Norway.

Main research topics

Marine biodiscovery, with emphasis on bioactivity screening and identification of natural products with potential for drug discovery. High-throughput cell-based assays, in particular anticancer and antibacterial assays

Awards and Distinctions

Dissemination award 2015, Faculty of Bioscience, Fisheries and Economics, UiT.

Meeting and Conference organization

- Invited speaker for international meetings (FEMS/SGM, Cork, Ireland 2012, ScanBalt Academy Oslo 2009, SLAS meeting Dortmund 2015, Nordic Chemical Biology 2015 Stockholm)
- Co-organizer of the International meeting: BIOPROSP (2009, 2011, 2013, 2017).

31 peer-reviewed Publications; 1 patent, h-index: 17, citations: 1106 (Google Scholar 05-18)

ORCID: 0000-0002-6059-060X

5 most relevant publications within last five years

1. Hansen KØ, Isaksson J, Bayer A, Johansen JA, **Andersen JH**, Hansen E. Securamine Derivatives from the Arctic Bryozoan *Securiflustra securifrons*. **Journal of Natural Products** (2017) 12:3276-3283.
2. Bakka TA, Strøm MB, **Andersen JH**, Gautun OR. Synthesis and antimicrobial evaluation of cationic low molecular weight amphipathic 1,2,3-triazoles. **Bioorganic & Medicinal Chemistry Letters** (2017) 27: 1119 – 1123.
3. Olsen EK, Sørderholm KL, Isaksson J, **Andersen JH** and Hansen E. Metabolomic Profiling Reveals the N-Acyl-Taurine Geodiataurine in Extracts from the Marine Sponge *Geodia macandrewii* (Bowerbank). **Journal of Natural Products** (2016) 27:1285-1291.
4. Hansen E, **Andersen JH**. Screening for marine natural products with potential as chemotherapeutics for acute myeloid leukemia. **Current Pharmaceutical Biotechnology** (2016) 17:71-77
5. Lind KF, Østerud B, Hansen E, Jørgensen TØ, **Andersen JH**. The immunomodulatory effects of baretin and involvement of the kinases CAMK1α and RIPK2. **Immunopharmacology and immunotoxicology** (2015) 37:458-464



Marine bioprospecting

Group leader: Prof. Klara Stensvåg (klara.stensvag@uit.no; Tel: +47 41239918/+47 77644512).
Norwegian College of Fishery Science, Faculty of Biosciences, Fisheries and Economics.

Webpage: https://en.uit.no/forskning/forskningsgrupper/gruppe?p_document_id=348358

Main research topics/activities: We work on drug discovery and bioprospecting focusing on the activity of antimicrobial compounds of Arctic Marine origin/microbiota against antibiotic resistant human pathogens. We are interested to identify mechanism of actions and define the pharmacophore of active natural or synthetic natural products mimics using new methods and approaches. Has established Arctic Bioanalytical Platform (ABP).

Current staff: Prof./ass. Prof. (n=4), postdoc/researcher (n=0), PhD (n=6), Tech./admin. (n=2.5)

Ongoing international collaborations: Courtney L Smith, George Washington University, USA; Morten K. Moe, Akershus University Hospital (Ahus), Norway; Magne O. Sydnes, University of Stavanger, Norway; Enrique de la Vega, Medical University of South Carolina, Charleston, USA; Yaroslav A. Andreev, Sechenov First Moscow State Medical University, Institute of Molecular Medicine, Branch of the Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, RAS, Russia; Marco Scocchi, University of Trieste, Italy.

External research funding last three years: Troms fylkeskommune (2017); RDA (2015); Norway Grants (2016).

Overview of CANS-related research groups + CVs from group leaders and its scientific leader team



CV Group leader Marine Bioprospecting:

Tel: +47 77 64 45 12

Email: Klara.stensvag@uit.no

Professor, UiT

Education

1998: PhD degree in Biotechnology – UiT

1992: Master degree in Biology/Immunology – UiT

1977: Bioengineer, Østfold ingeniørhøgskole, Sarpsborg, Norway

Employment

- 2003 - : Assoc. professor/Prof. (2008) Marine Biotechnology, Faculty of Biosciences, Fisheries and Economics (BFE)/Norwegian College of Fishery Science (NFH), UiT. Team [website](#)
- Visiting researcher at Dept. of Biochemistry, Hollings Marine Laboratory, Medical University of South Carolina, Charleston SC, USA (2006-2007).
- Others – including : Post doctoral fellow, NFH, BFE, UiT (2001-2002), Reserarcher, NFH, BFE, UiT (1998-2000), Phd fellow NFH, BFE, UiT (1993-1998), Researcher, Centre for Marine Biotechnology, Norwegian Institute of Fisheries and Aquaculture Research, Tromsø.

Main research topics

Drug discovery and bioprospecting focusing on antimicrobial compounds of Arctic Marine origin/microbiota on antibiotic resistant human pathogens – Search for, identify and describe novel antimicrobial compounds – Antibacterial peptides - Understanding strategies in marine organisms and cells - Mechanisms of actions of novel antimicrobial and anti-biofilm compounds and synthetic Marine Natural Product Mimics thereof.

Awards and Distinctions

- President- Elect in Norwegian Biochemical Society (NBS) (Since 2018)
- Education prize NFH, BFE, UiT (2013)
- Award for commercialization/ research and patenting UiT in 2006.

Meeting and Conference organization

- Invited speaker in several international meetings,
- Co-organizer of the International Conference on BIOPROSP UiT (2003-17).

44 peer-reviewed Publications; 9 patents; h-index: 22, total citation: 1411 (Google Scholar – 18.05.2018) ORCID: 0000-0002-4717-6711

5 most relevant publications within last five years

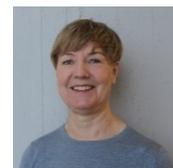
1. Moe MK, Haug T, Sydnes MO, Sperstad SV, Li C, Vaagsfjord LC, de la Vega E, Stensvag K. Paralithocins, Antimicrobial Peptides with Unusual Disulfide Connectivity from the Red King Crab, *Paralithodes camtschaticus*. *J Nat Prod*. 2018;81(1):140-50.
2. Igumnova EM, Mishchenko E, Haug T, Blencke H-M, Sollid JUE, Aarag E, Lauksund RS, Stensvåg K, Strøm MB. Synthesis and antimicrobial activity of small cationic amphipathic aminobenzamide marine natural product mimics and evaluation of relevance against clinical isolates including ESBL–CARBA producing multi-resistant bacteria. *Bioorgan Med Chem*. 2016;24(22):5884-94.
3. Solstad RG, Li C, Johansen J, Isakson J, Stensvåg K, Haug T. Novel Antimicrobial Peptides EeCentrocins 1, 2 and EeStrongylocin 2 from the Edible Sea Urchin *Echinus esculentus* have 6-Br-Trp Post-Translational Modifications. *Plos One*. 2016;11(3): e0151820.
4. Paulsen VS, Mardirossian M, Blencke HM, Benincasa M, Runti G, Nepa M, Haug T, Stensvag K, Scocchi M. Inner membrane proteins YgdD and SbmA are required for the complete susceptibility of *E. coli* to the proline-rich antimicrobial peptide arasin 1(1-25). *Microbiology*.
5. Li C, Blencke HM, Haug T, Stensvag K. Antimicrobial peptides in echinoderm host defense. *Developmental and Comparative Immunology*. 2015;49(1):190-7.

Klara STENSVÅG

Date of Birth 17/05/56

Norwegian citizenship

Married, 2 children





NORM – Norwegian Organization for Surveillance of Antimicrobial Resistance

Group leader: Professor II Gunnar Skov Simonsen (gunnar.skov.simonsen@unn.no, Tel: +47 91848680). Department of Microbiology and Infection Control, University Hospital of North Norway.

Webpage: www.antibiotikaresistens.no / www.norm-atlas.no

Main research topics/activities: Surveillance of antimicrobial resistance in human pathogenic bacteria in Norway. Molecular epidemiology of antimicrobial resistance in human pathogenic bacteria.

Current staff: Prof./ass. Prof. (n=1), postdoc/researcher (n=1), PhD (n=0), Tech./admin. (n=0)

Current ongoing international collaboration: Norwegian partner to European (EARS-Net) and WHO (GLASS) AMR surveillance networks

External research funding last three years: JPI-AMR (partner *PILGRIM* 2018-20)

Overview of CANS-related research groups + CVs from group leaders and its scientific leader team



Gunnar Skov SIMONSEN

Tel: +47 91 84 86 80

Email: gunnar.skov.simonsen@unn.no

Date of Birth 26/06/65

Norwegian citizenship

Married, 3 children



Head Department of Microbiology and Infection Control,

University Hospital of North Norway (UNN)

NORM – Norwegian Organization for Surveillance of Antimicrobial Resistance

Education

- 1990: MD, University of Tromsø
- 2000: PhD in Microbiology, University of Tromsø
- 2000: Specialist in Clinical Microbiology, University Hospital of North Norway

Employment

- 2000 -: Head of NORM - Norwegian Organization for Surveillance of Antimicrobial Resistance
- 2005 - : Head, Department of Microbiology and Infection Control, UNN 2005 -: Associate professor II / Professor II at UiT – The Arctic University of Norway
- 2014 -: Honorary Research fellow, School of Health Sciences, University of KwaZulu-Natal, Durban
- 2002-03: Medical Officer, RMD/CSR/CSR, World Health Organization, Geneva
- 2012-13: Visiting Professor, Harvard Medical School / Brigham and Women's Hospital, Boston

Main research topics

Surveillance of antimicrobial resistance. Molecular epidemiology of AMR and population-based studies of host-microbe interactions in bacterial colonization and infection.

Awards and Distinctions

Schering-Plough Young Investigator Award in Clinical Microbiology and Infectious Diseases 1998

Meeting and Conference organization

- Invited speaker in several international meetings
- Norwegian Focal Point for AMR, European Center for Disease Prevention and Control (ECDC)
- Coordination Group, European Antimicrobial Resistance Surveillance Network (EARS-Net)
- Norwegian Focal Point for GLASS, The WHO Global Surveillance System for AMR

136 peer-reviewed Publications; h-index: 34, total citation: 3336 (Google Scholar 05-18)

ORCID: 0000-0003-0043-7045

5 most relevant publications within last five years

1. Power law approximations of movement network data for modeling infectious disease spread. Geilhufe M, Held L, Skrøvseth SO, **Simonsen GS**, Godtliebsen F. **Biom J**. 2014 ay;56(3):363-82.
2. Cluster of linezolid-resistant *Enterococcus faecium* ST117 in Norwegian hospitals. Hegstad K, Longva JÅ, Hide R, Aasnæs B, Lunde TM, **Simonsen GS**. **Scand J Infect Dis**. 2014 Oct;46(10):712-5.
3. *Bifidobacterium* bacteremia - clinical characteristics and a genomic approach to assess pathogenicity. Esaiassen E, Hjerde E, Cavanagh JP, **Simonsen GS**, Klingenberg C; Norwegian Study Group on Invasive Bifidobacterial infections. **J Clin Microbiol**. 2017 Jul;55(7):2234-2248.
4. Systemic antibiotic prophylaxis prior to gastrointestinal surgery - is oral administration of doxycycline and metronidazole adequate? Giske A, Nymo LS, Fuskevåg OM, Amundsen S, **Simonsen GS**, Lassen K. **Infect Dis (Lond)**. 2017 Nov - Dec;49(11-12):785-791.
5. Infection prevention and control measures and tools for the prevention of entry of carbapenem-resistant *Enterobacteriaceae* into healthcare settings: guidance from the European Centre for Disease Prevention and Control. Magiorakos AP, Burns K, Rodríguez Baño J, Borg M, Daikos G, Dumpis U, Lucet JC, Moro ML, Tacconelli E, **Simonsen GS**, Szilágyi E, Voss A, Weber JT. **Antimicrob Resist Infect Control**. 2017 Nov 15;6:113..

Overview of CANS-related research groups + CVs from group leaders and in scientific leader team



Norwegian National Advisory Unit on Detection of Antimicrobial Resistance (K-res)

Group leaders: Senior research scientists/Professor IIs Kristin Hegstad (Kristin.Hegstad@uit.no, tel: +47 77646351) and Ørjan Samuelsen (orjan.samuelsen@unn.no; Tel: +47 97653716). Department of Microbiology and Infection Control, University Hospital of North Norway

Webpage: <https://unn.no/fag-og-forskning/k-res>

Main research topics/activities: National reference laboratory for carbapenemase producing Gram-negative bacteria (*Enterobacterales*, *Acinetobacter* spp., and *Pseudomonas* spp.) and linezolid resistant enterococci. We perform: (i) Evaluations of diagnostic methods for detection of antimicrobial resistance. (ii) Multilevel molecular epidemiology studies of antimicrobial resistant human pathogens (resistance gens, mobile genetic elements and clones including *Enterococcus faecium*, *Escherichia coli*, *Klebsiella pneumoniae* in national networks. (iii) Prevalence studies of antimicrobial resistance in healthy carriers (Tromsø 7 population study). (iv) Elucidation of novel resistance mechanisms and transmission dynamics of antimicrobial resistant pathogenic clones. (v) Search for novel anti-virulence targets for infection prevention/treatment and inhibitors for carbapenemases. K-res is an ESCMID Collaborative Centre and a EUCAST Antimicrobial Susceptibility Testing Network Laboratory.

Current staff: Prof./ass. Prof. (n=0.2), researcher/postdoc (n=3), PhD (n=3), Tech./admin. (n=4)

Current ongoing international collaboration: Professor Rob Willems, University Medical Center Utrecht, the Netherlands. Professor Matthew Holden, University of St. Andrews, UK. Karin Tegmark-Wisell, Public Health Agency of Sweden. Senior Scientist, PhD, Henrik Hasman, Statens Serum Institut, Denmark. Professor Niels Frimodt-Møller, University Hospital of Copenhagen – Rigshospitalet, Denmark. Research Director Sylvain Brisse, Institute Pasteur, France. Clinical data coordinator Gunnar Kahlmeter, EUCAST development laboratory, Sweden. Associate professor Christian Giske, Karolinska Institutet, Sweden

External research funding last three years: Norwegian Directorate of Health, Northern Norway Regional Health Authority, Northern Norway Regional Health Authority Medical Research Programme, RCN.

Overview of CANS-related research groups + CVs from group leaders and its scientific leader team



CV Group leader K-res:

Tel: +47 77646351

Email: Kristin.Hegstad@uit.no

Senior research scientist K-res

Professor II at UiT – The Arctic University of Norway

Kristin HEGSTAD

Date of Birth 09/12/71

Norwegian citizenship

Married, 2 children



Education

- 2000 : PhD degree in Medical Microbiology – UiT – The Arctic University of Norway (UiT)
- 1995 : Master degree in Marine biotechnology/microbiology – Norwegian Fishery College

Employment

- Since 2004: Research Scientist, Norwegian National Advisory Unit on Detection of Antimicrobial Resistance, University Hospital of North Norway
- Since 2017: Professor II, Research group HMI, Dept. of Medical Biology, UiT
- 2006 - 2016: Associate Professor II, Dept. of Medical Biology, UiT
- 2001 - 2004: Post-doctoral position, Dept. of Medical Biology, UiT
- May 2001 - May 2002: Post-doctoral position/visiting Research Fellow, Patrice Courvalin lab, Unité des Agents Antibactériens, Institut Pasteur, Paris, France.

Main research topics

Antimicrobial resistance in enterococci - Mobile genetic elements and horizontal gene transfer of antimicrobial resistance - Mechanisms for antimicrobial resistance - Detection of antimicrobial resistance - Novel virulence factors as targets for disarmament of pathogens - Membrane vesicles

Meeting and Conference organization

- Invited speaker in several international meetings (NordicAST workshop, Infektionsveckan och Mikrobiologiskt vårmöte)
- Co-organizer of Symposium on Bacterial Membrane Vesicles – Functions and implications (February 2018, Tromsø, Norway).

31 peer-reviewed Publications; h-index: 21, total citation: 1869 (Google Scholar – 12th May 2018)

ORCID: <https://orcid.org/0000-0002-1314-0497>

Five most relevant publications within last five years

1. Sivertsen A, Pedersen T, Larssen KW, Bergh K, Rønning TG, Radtke A, **Hegstad K**. Silenced *vanA* gene cluster on a transferable plasmid caused an outbreak of vancomycin-variable enterococci. *Antimicrobial Agents Chemother* 2016;60:4119-27. pii: AAC.00286-16.
2. Mikalsen T, Pedersen T, Willems R, Coque TM, Werner G, Sadowy E, van Schaik W, Jensen LB, Sundsfjord A, **Hegstad K**. Investigating the mobilome in clinically important lineages of *Enterococcus faecium* and *Enterococcus faecalis*. *BMC Genomics* 2015;16:282.
3. Sivertsen A, Billström H, Melefors Ö, Olsson Liljequist B, Tegmark Wisell K, Ullberg M, Özenci V, Sundsfjord A, **Hegstad K**. A multicentre hospital outbreak in Sweden caused by introduction of a *vanB2* transposon into a stably maintained pRUM-plasmid in an *Enterococcus faecium* ST192 clone. *PLOS ONE* 2014;9:e103274.
4. **Hegstad K**, Giske CG, Haldorsen B, Matuschek E, Schønning K, Leegaard TM, Kahlmeter G, Sundsfjord A on behalf of the NordicAST VRE detection study group. Performance of the EUCAST disk diffusion method, CLSI agar screen and VITEK 2 automated antimicrobial susceptibility testing system in detection of clinical isolates of enterococci with low and medium level VanB-type vancomycin resistance: a multicentre study. *J Clin Microbiol* 2014;52:1582-9.
5. Bjørkeng EK, Hjerde E, Pedersen T, Sundsfjord A, **Hegstad K**. ICES/*uvan*; a 94-kb mosaic Integrative Conjugative Element conferring interspecies transfer of VanB-type glycopeptide resistance, a novel bacitracin resistance locus and a toxin-antitoxin stabilisation system. *J Bacteriol.* 2013;195:5381-90.

Overview of CANS-related research groups + CVs from group leaders and its scientific leader team



CV Co-group leader K-res:

Ørjan SAMUELSEN

Tel: +47 97653716

Email: orjan.samuelсен@unn.no

Senior researcher

Norwegian National Advisory Unit on Detection of Antimicrobial

Resistance (K-res) and Professor II at UiT.

Date of Birth 20/06/74

Norwegian citizenship

Married, 2 children



Education

- 2005 : PhD. Medical Faculty, University of Tromsø, Norway
- 1999 : MSc in Pharmacology, University of Liverpool, UK
- 1997 : Engineer in Chemistry/Biotechnology, Nord-Trøndelag University College, Norway

Employment

- 2006 -: Research scientist: Norwegian National Advisory Unit on Detection of Antimicrobial Resistance, University Hospital of North Norway
- 2015 -: Professor II, MicroPop Research Group, Dept. of Pharmacy, UiT.
- 2006-2006: Post.doc/visiting Research Fellow, Timothy R. Walsh lab, Dept. of Cellular and Molecular Medicine, University of Bristol, UK (8 months)
- -2002-2005: PhD student, University Hospital of North Norway
- 1999-2002: Project engineer, University Hospital of North Norway

Main research topics

Antimicrobial resistance in Gram-negative bacteria in particular β -lactamase-mediated resistance (ESBLs and carbapenemases) - Molecular epidemiology - Evaluation of diagnostic methods - Biochemical and structural characterization of β -lactamases - Development of β -lactamase inhibitors - Evolutionary aspects and transmission dynamics of resistance plasmids.

Meeting and Conference organization

- Invited speaker in several international meetings (NSCMID congress, NordicaST workshop)
- Chair European Congress Clinical Microbiology and Infectious Diseases
- Organizer/Co-organizer of the Polar Bear Symposium on AMR (Svalbard, 2012).

65 peer-reviewed Publications; 1 patent; h-index: 24 (Web of Science, Clarivate Analytics, April 2018), total citations: 1783 (without self-citations)

ORCID: <https://orcid.org/0000-0002-5525-2614>

5 most relevant publications within last five years

1. Di Luca MC, Sørnum V, Starikova I, Kloos J, Hülter N, Naseer U, Johnsen PJ, **Samuelсен Ø**. Low biological cost of carbapenemase-encoding plasmids following transfer from *Klebsiella pneumoniae* to *Escherichia coli*. *J. Antimicrob. Chemother.* **72**(1):85-89.
2. **Samuelсен Ø**, Overballe-Petersen S, Bjørnholt JV, Brisse S, Doumith M, Woodford N, Hopkins KL, Aasnæs B, Haldorsen B, Sundsfjord A, on behalf of The Norwegian Study Group on CPE. Molecular and epidemiological characterization of carbapenemase-producing Enterobacteriaceae in Norway 2007 to 2014. *PLoS ONE* **12**(11):e0187832
3. Ellington MJ, Ekelund O, Aarestrup FM, Canton R, Doumith M, Giske C, Grundman H, Hasman H, Holden MT, Hopkins KL, Iredell J, Kahlmeter G, Köser CU, MacGowan A, Mevius D, Mulvey M, Naas T, Peto T, Rolain JM, **Samuelсен Ø**, Woodford N. The role of whole genome sequencing in antimicrobial susceptibility testing of bacteria: report from the EUCAST Subcommittee. *Clin. Microbiol. Infect.* **23**(1):2-22.
4. Skagseth S, Christopeit T, Akhter S, Bayer A, **Samuelсен Ø**, Leiros HS. (2017) Structural insights into TMB-1 and the role of residue 119 and 228 and inhibitor binding. *Antimicrob. Agents Chemother.* **61**:e02602-16
5. Zykov IN, **Samuelсен Ø**, Jakobsen L, Småbrekke L, Andersson DI, Sundsfjord A, Frimodt-Møller N. (2018) Pharmacokinetics and Pharmacodynamics of fosfomicin and its activity against ESBL-, plasmid-mediated AmpC- and carbapenemase-producing *Escherichia coli* in a murine urinary tract infection model. *Antimicrob Agents Chemother.* 2018 Mar 26. pii: AAC.02560-17. doi: 10.1128/AAC.02560-17. [Epub ahead of print]

Overview of CANS-related research groups + CVs from group leaders and interim scientific leader team



CANS interim scientific leader team

CV SANS interim director:

Tel: +47 906 16 118

Email: arnfinn.sundsfjord@uit.no

Professor UiT/Medical director K-res at UNN

Arnfinn SUNDSFJORD

Date of Birth 08/07/58

Norwegian citizenship

Married, 2 children



Education

- 1994 : PhD, UiT – The Arctic University of Norway (UiT)
- 1991 : Specialist diploma in Clinical Microbiology, Norway
- 1983 : MD, UiT

Employment

- 2001 -: Director/senior consultant, National Norwegian Advisory Unit in Detection of Antimicrobial resistance. University Hospital of North-Norway (UNN).
- 2001 -: Professor of Medical Microbiology, UiT.
- 2014 -: Honorary Research fellow, School of Health Sciences, University of KwaZulu-Natal, Durban
- 2000-01: Visiting professor, Institute Pasteur, Unité des Agents Antibactériens; Courvalin).
- 1991-2000: PhD-fellow, Associate professor of Medical Microbiology, UiT
- 1983-91: Internship medicine and surgery, advanced training in clinical microbiology.

Main research topics

Pheno- and genotypic antimicrobial susceptibility testing, multilevel molecular epidemiology of AMR (resistance determinants, mobile genetic elements, clones) mostly related to *Enterococcus faecalis/faecium* and *Enterobacterales*, bacterial fitness and mechanisms for persistence of AMR.

Awards and Distinctions

- Excellence in teaching award, Faculty of Medicine, UiT 1995
- Young research investigator award, Nordic Society for clinical microbiology and Infectious Diseases (NSCMID) 1995
- Excellence in research award, Faculty of Medicine, UiT/Regional Health Authorities 2006
- Fellow, European Society for Clinical Microbiology and Infectious Diseases (ESCMID), 2017

Meeting and Conference organization

- Invited speaker in international meetings (NSCMID, ESCMID, Institute Pasteur)
- Organizer, co-organizer and member of international program committees (NSCMID 2009-15, NordicAST, 2nd ASM Enterococcal meeting 2005, ECCMID 2016-18).

Peer-reviewed Publications (n=137; Scopus 05-18); h-index: 49, Cit: 6400 (Google Scholar 05-18)

ORCID ID: <https://orcid.org/0000-0002-3728-2270>

5 most relevant publications within last five year

1. Pedersen T, Sekyere JO, Govinden U, Moodley K, Sivertsen A, Samuelsen Ø, Essack S, **Sundsfjord A**. Spread of Plasmid-Encoded NDM-1 and GES-5 Carbapenemases among Extensively Drug-Resistant and Pandrug-Resistant Clinical Enterobacteriaceae in Durban, South Africa. **Antimicrob Agents Chemother** 2018 Apr 26;62(5). pii: e02178-17. doi: 10.1128/AAC.02178-17
2. Holmes A, Holmes M, Gottlieb T, Price LB, **Sundsfjord A**. End non-essential use of antimicrobials in livestock. **BMJ** (Editorial). 2018 Jan 29;360:k259. doi: 10.1136/bmj.k259.
3. Samuelsen Ø, Overballe-Petersen S, Bjørnholt JV, Brisse S, Doumith M, Woodford N, Hopkins KL, Aasnæs B, Haldorsen B, **Sundsfjord A**; Norwegian Study Group on CPE. Molecular and epidemiological characterization of carbapenemase-producing Enterobacteriaceae in Norway, 2007 to 2014. **PLoS One**. (2017) Nov;12(11):e0187832
4. Holmes AH, Moore LS, **Sundsfjord A**, Steinbakk M, Regmi S, Karkey A, Guerin PJ, Piddock LJ. Understanding the mechanisms and drivers of antimicrobial resistance. **Lancet**. (2016);387: 176-87. (Review)
5. Zykov IN, **Sundsfjord A**, Småbrekke L, Samuelsen Ø. The antimicrobial activity of mecillinam, nitrofurantoin, temocillin and fosfomicin and comparative analysis of resistance patterns in a nationwide collection of ESBL-producing *Escherichia coli* in Norway 2010-2011. **Infect Dis** (Lond). (2016);48:99-107.

Overview of CANS-related research groups + CVs from group leaders and interim scientific leader team



CV SANS interim leader team member: Johanna Ericson SOLLID

Tel: +47 476 44 812

Email: Johanna.e.sollid@uit.no

Professor, vice dean research

Date of Birth 06/03/62

Norwegian citizenship

Married, 2 children



Education

- 1989: PhD degree in Microbiology – Umeå University, Sweden
- 1983: Bachelor degree in Microbiology – Umeå University, Sweden

Employment

- Since 2005: Professor in Microbiology, Faculty of Health Sciences, UiT The Arctic University of Norway
- 1992-2005: Associate professor, Faculty of Health Sciences, UiT The Arctic University of Norway
- 1989-1992: Post doc, Faculty of Health Sciences, UiT The Arctic University of Norway

Main research topics

Bacterial genomics, bacterial virulence, determinants for bacterial colonization of humans, host-microbe interaction, new antibacterial molecules and their mode of action.

Awards and Distinctions

- Appointed vice Dean for Research, Faculty of Health Science, UiT (2018-2021)
- Appointed Co-director of the national graduate school “Infection Biology and Antimicrobials” granted by RCN (2016-2023)

Meeting and Conference organization

- Invited speaker at international meetings (“3rd International Conference on the Pathophysiology of Staphylococci” in Tübingen, Germany (2016); “Top Gear in Science” at The Norwegian Academy of Science and Letters (DNVA) in Oslo, Norway (2015)
- Co-organizer of the FEMS 2009 3rd Congress of European Microbiologists in Gothenburg, Sweden and several national meetings for the Norwegian Society for Microbiology and the Norwegian Biochemical Society.

56 peer-reviewed publications; h-index: 28, total citation: 3586 (Google Scholar, 2018-05-11)

5 most relevant publications within last five years

1. **Sollid, JUE**; Furberg, AS; Hanssen, AM; Johannessen, M. Staphylococcus aureus: Determinants of human carriage. *Infection, Genetics and Evolution* 2014; 21:531 – 541. doi: 10.1016/j.meegid.2013.03.020.
2. Cavanagh, JP; Hjerde, E; Holden, MTG; Kahlke, T; Klingenberg, C; Flægstad, T; Parkhill, J; Bentley, SD; **Sollid, JUE**. Whole-genome sequencing reveals clonal expansion of multiresistant Staphylococcus haemolyticus in European hospitals. *Journal of Antimicrobial Chemotherapy* 2014; 69:2920 - 2927. doi: 10.1093/jac/dku271.
3. Askarian, F; Ajayi, C; Hanssen, AM; Van Sorge, NM.; Pettersen, I; Diep, DB; **Sollid, JUE**; J, Mona. The interaction between Staphylococcus aureus SdrD and desmoglein 1 is important for adhesion to host cells. *Scientific Reports* 2016; 6:22134. doi: 10.1038/srep22134.
4. Igumnova, EM; Mishchenko, E; Haug, T; Blencke, HM; **Sollid, JUE**; Aarag, E; Lauksund, RS; Stensvåg, K; Strøm, MB. Synthesis and antimicrobial activity of small cationic amphipathic aminobenzamide marine natural product mimics and evaluation of relevance against clinical isolates including ESBL–CARBA producing multi-resistant bacteria. *Bioorganic & Medicinal Chemistry* 2016; 24:5884 - 5894. doi: 10.1016/j.bmc.2016.09.046.
5. Hanssen, AM; Kindlund, B; Stenklev, NC; Furberg, AS; Fismen, S; Olsen, RS; Johannessen, M; **Sollid, JUE**. Localization of Staphylococcus aureus in tissue from the nasal vestibule in healthy carriers. *BMC Microbiology* 2017; 17. doi: 10.1186/s12866-017-0997-3.

Overview of CANS-related research groups + CVs from group leaders and interdisciplinary scientific leader team



CV SANS interim leader team member:

Tel: +47 77 64 45 12

Email: Klara.stensvag@uit.no

Professor, UiT

Education

1998: PhD degree in Biotechnology – UiT

1992: Master degree in Biology/Immunology – UiT

1977: Bioengineer, Østfold ingeniørhøgskole, Sarpsborg, Norway

Employment

- 2003 - : Assoc. professor/Prof. (2008) Marine Biotechnology, Faculty of Biosciences, Fisheries and Economics (BFE)/Norwegian College of Fishery Science (NFH), UiT. Team [website](#)
- Visiting researcher at Dept. of Biochemistry, Hollings Marine Laboratory, Medical University of South Carolina, Charleston SC, USA (2006-2007).
- Others – including: Post doctoral fellow, NFH, BFE, UiT (2001-2002), Reserarcher, NFH, BFE, UiT (1998-2000), Phd fellow NFH, BFE, UiT (1993-1998), Researcher, Centre for Marine Biotechnology, Norwegian Institute of Fisheries and Aquaculture Research, Tromsø.

Main research topics

Drug discovery and bioprospecting focusing on antimicrobial compounds of Arctic Marine origin/microbiota on antibiotic resistant human pathogens – Search for, identify and describe novel antimicrobial compounds – Antibacterial peptides - Understanding strategies in marine organisms and cells - Mechanisms of actions of novel antimicrobial and anti-biofilm compounds and synthetic Marine Natural Product Mimics thereof.

Awards and Distinctions

- President- Elect in Norwegian Biochemical Society (NBS) (Since 2018)
- Education prize NFH, BFE, UiT (2013)
- Award for commercialization/ research and patenting UiT in 2006.

Meeting and Conference organization

- Invited speaker in several international meetings,
- Co-organizer of the International Conference on BIOPROSP UiT (2003-17).

44 peer-reviewed Publications; 9 patents; h-index: 22, total citation: 1411 (Google Scholar – 18.05.2018) ORCID: 0000-0002-4717-6711

5 most relevant publications within last five years

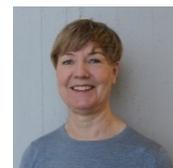
1. Moe MK, Haug T, Sydnes MO, Sperstad SV, Li C, Vaagsfjord LC, de la Vega E, **Stensvag K**. Paralithocins, Antimicrobial Peptides with Unusual Disulfide Connectivity from the Red King Crab, *Paralithodes camtschaticus*. *J Nat Prod*. 2018;81(1):140-50.
2. Igumnova EM, Mishchenko E, Haug T, Blencke H-M, Sollid JUE, Aarag E, Lauksund RS, **Stensvåg K**, Strøm MB. Synthesis and antimicrobial activity of small cationic amphipathic aminobenzamide marine natural product mimics and evaluation of relevance against clinical isolates including ESBL–CARBA producing multi-resistant bacteria. *Bioorgan Med Chem*. 2016;24(22):5884-94.
3. Solstad RG, Li C, Johansen J, Isakson J, **Stensvåg K**, Haug T. Novel Antimicrobial Peptides EeCentrocins 1, 2 and EeStrongylocin 2 from the Edible Sea Urchin *Echinus esculentus* have 6-Br-Trp Post-Translational Modifications. *Plos One*. 2016;11(3): e0151820.
4. Paulsen VS, Mardirossian M, Blencke HM, Benincasa M, Runti G, Nepa M, Haug T, **Stensvåg K**, Scocchi M. Inner membrane proteins YgdD and SbmA are required for the complete susceptibility of *E. coli* to the proline-rich antimicrobial peptide arasin 1(1-25). *Microbiology*.
5. Li C, Blencke HM, Haug T, **Stensvåg K**. Antimicrobial peptides in echinoderm host defense. *Developmental and Comparative Immunology*. 2015;49(1):190-7.

Klara STENSVÅG

Date of Birth 17/05/56

Norwegian citizenship

Married, two children



Overview of CANS-related research groups + CVs from group leaders and interim scientific leader team



CV SANS interim leader team member: John S. Mjøen SVENDSEN

Tel: + 47 90095972

Date of Birth 03/12/58

Email: john-sigurd.svendsen@uit.no

Norwegian citizens

Professor, Research Group Leader

Married, 3 children



Education

- 1985: Dr. Scient., University of Tromsø (UiT)
- 1982: Cand. mag. (*Laudabilis prae ceteris*), University of Tromsø (UiT)

Employment (Current)

- 2000 – : Professor, Research group leader: Antimicrobial peptides. UiT- The Arctic University of Norway. Team website: <http://site.uit.no/antibiotics/>
- 2015 – : Chief Scientific Officer, Amicoat AS
- 2014 – : Chief Scientific Officer, Pharmasum Therapeutics AS

Main research topics

Synthetic organic chemistry, asymmetric synthesis, absolute configuration, natural products, peptide synthesis, NMR, mass spectrometry, medicinal chemistry, antimicrobial compounds, anticancer compounds, protein kinase inhibitors drug discovery, drug design, quantitative structure-activity relationships.

Awards and Distinctions

- NATO Science Fellowship (1989)
- UiT Innovation Prize (2017)

More than 90 peer reviewed publications, 3912 citations (average 42 citations per paper), H-index of 34 (Google Scholar 05-2018). Inventor of 32 patent families. Researcher unique identifier (ORCID): orcid.org/0000-0001-5945-6123

5 most relevant publications within last five years

1. Balmukund S Thakkar, **John-Sigurd M Svendsen**, Richard A Engh, Cis/Trans Isomerization in Secondary Amides: Reaction Paths, Nitrogen Inversion, and Relevance to Peptidic Systems. *Journal of Physical Chemistry A* 2017, 121:36 6830-6837
2. J Johannes Eksteen, Dominik Ausbacher, Jaione Simon-Santamaria, Trine Stiberg, Cristiane Cavalcanti-Jacobsen, Imin Wushur, **John S Svendsen**, Øystein Rekdal, Iterative design and in vivo evaluation of an oncolytic antilymphoma peptide, *Journal of medicinal chemistry*, 2017 60:1 146-156
3. Ulli Rothweiler, Wenche Stensen, Bjørn Olav Brandsdal, Johan Isaksson, Frederick Alan Leeson, Richard Alan Engh, **John S Mjøen Svendsen**. Probing the ATP-binding pocket of protein kinase DYRK1A with benzothiazole fragment molecules. *Journal of medicinal chemistry*, 2016 59:21 *Journal of medicinal chemistry*, 2016 60:1 146-156
4. Wenche Stensen, Rob Turner, Marc Brown, Nahid Kondori, **John Sigurd Svendsen**, Johan Svenson. Short Cationic Antimicrobial Peptides Display Superior Antifungal Activities toward Candidiasis and Onychomycosis in Comparison with Terbinafine and Amorolfine. *Molecular pharmaceutics*, 2016 13:10 3595-3600
5. Rozenn Trepos, Gunnar Cervin, Claire Hellio, Henrik Pavia, Wenche Stensen, Klara Stensvåg, **John-Sigurd Svendsen**, Tor Haug, Johan Svenson. Antifouling compounds from the sub-arctic ascidian *Synoicum pulmonaria*: Synoxazolidinones A and C, pulmonarins A and B, and synthetic analogues. *Journal of Natural Products*, 2014. 77:9 2105-2113.