UNIVERSITETET I BERGEN
Det medisinsk-odontologiske fakultet

Styresak: 106/13

Sak nr.: 13/10473
13/10475
13/10476

Møte: 20.11.2013

OPPRYKK TIL PROFESSOR ETTER KOMPETANSE – TRE SØKNADER INNEN FAGOMRÅDET BIOKJEMI/ MOLEKYLÆR-BIOLOGI – OPPNEVNING AV BEDØMMELSESKOMITÉ

Det er kommet tre søknader om personlig opprykk til professor etter kompetanse fra faste tilsatte i førsteamanuensisstillinger ved Institutt for biomedisin, alle innen fagområdet biokjemi/molekylærbiologi; førsteamanuensis **Karl Johan Tronstad**, førsteamanuensis **Frode Selheim** og førsteamanuensis **Frode Berven**.

Institutt for biomedisin foreslår følgende sammensetning av bedømmelseskomiteen:

- **Bernd Thiede**, professor, Bioteknologisenteret i Oslo
- **Berit Johansen**, professor, Institutt for biologi, NTNU
- **Einar Jensen**, professor, Institutt for farmasi, Universitetet i Tromsø
- **Ian Pryme**, professor, Institutt for biomedisin, Universitetet i Bergen (komitéleder)

Komiteen er en felles komité for de tre søkerne, ettersom disse er søkere innen samme fagområde. Fire medlemmer er valgt for å sikre god nok dekning av de tre søkernes spesialfelt.

Forslag til vedtak:

1. Styret ved Det medisinsk-odontologiske fakultet oppnevner følgende bedømmelseskomité: professor Bernd Thiede, professor Berit Johansen, professor Einar Jensen og professor Ian Pryme (komitéleder).

2. Komiteen skal vurdere personlig opprykk til professor etter kompetanse for førsteamanuensis Karl Johan Tronstad, førsteamanuensis Frode Selheim og førsteamanuensis Frode Berven i fagområdet medisin (biokjemi/molekylærbiologi).

05.11.2013 LIV

Vedlegg:
1. Brev fra Institutt for biomedisin
2. Søknad om opprykk til professor etter kompetanse fra Frode Berven
3. Søknad om opprykk til professor etter kompetanse fra Frode Selheim
4. Søknad om opprykk til professor etter kompetanse fra Karl Johan Tronstad

UNIVERSITETET I BERGEN
Institutt for biomedisin

Det medisinsk-odontologiske fakultet

Referanse	Dato
2013/10475-LIV	24.10.2013

Forslag til sammensetning av bedømmelseskomité

Vi viser til deres anmodning om forslag til sammensetning av bedømmelseskomité av 01.10.2013.

Institutt for biomedisin foreslår følgende sammensetning av bedømmelseskomiteen:

- Bernd Thiede, professor, Bioteknologisenteret i Oslo
- Berit Johansen, professor, Institutt for biologi, NTNU
- Einar Jensen, professor, Institutt for farmasi, Universitetet i Tromsø
- Ian Pryme, professor, Institutt for biomedisin, Universitetet i Bergen (komitéleder)

Denne komiteen vil være felles for de tre søkerne Karl Johan Tronstad, Frode Selheim og Frode Berven, ettersom disse er søkere innen samme fagområde. 4 medlemmer er valgt for å sikre god nok dekning av de tre søkernes spesialfelt.

Vennlig hilsen

Aurora Martinez
fung. instituttleder

Linda Vagtskjold
saksbehandler

Dette er et UiB-internt notat som godkjennes elektronisk i ePhorte

Institutt for biomedisin
Telefon 55586355
Telefaks 55586360
post@biomed.uib.no

Postadresse
Postboks 7804
5020 Bergen

Besøksadresse
Haukelandsveien 28
Bergen

Saksbehandler
Linda Vagtskjold
55586420

OVERSENDELSE AV SØKNAD OM PERSONLIG OPPRYKK TIL PROFESSOR ETTER KOMPETANSE VED UiB

Jfr forskrift om ansettelse og opprykk i undervisnings- og forskerstillinger

Søknadsfrist: Søknad må være mottatt på fakultetet 15. september

Opplysninger om søker (fylles ut av søker selv):

Søkers etternavn:	Fornavn:	Fødselsdato:
Berven	Frode Steingrimsen	18.10.1976
Søkers stilling:		
Førsteamanuensis		
Søkers høyeste utdanning/grad/institusjon:		
PhD		
Søkers spesialitet m. h. t. fordypning:		
Biomedisin / molekylærbiologi med fordypning i proteomikk		

	Ja	Nei
Har søker p.t. til vurdering søknad på utlyst professorstilling?		✓

Hvis ja, oppgi hvilke(n) institusjon(er):

	Ja	Nei
Har søker sendt inn søknad om opprykk til professor eller vært vurdert for professorkompetanse i løpet av de siste to år før søknadsfristen?		✓

Hvis ja, oppgi institusjon(er) og fagområde(r):

Oppgi søknadsfrist(er):

15.09.2013

Fylles ut av instituttet:

Institutt: Institutt for biomedisin

Kontaktinformasjon ved instituttet: Kontaktperson, postadresse, tlf nr og e-postadresse:

Rolf K. Reed, Postboks 7804, 5020 Bergen, 55586389, Rolf.Reed@biomed.uib.no

Søkers fagområde iflg tilsetting:

Medisin, Proteomikk

Når ble det evt sist utlyst professorstilling ved UiB innen søkers fagområde/spesialitet?

Har ikke skjedd

ERKLÆRING FRA BEDØMMELSESKOMITEEN

	Sett kryss her
Komiteen avgir enstemmig kompetanse-erklæring Søker bedømt kompetent for opprykk	☐

Annet utfall av bedømmingen – Søker er ikke er erklært kompetent for opprykk	☐

_____
Sted og dato

_____
Underskrift

Vedlegg til søknadsskjemaet:
1. søknad
2. cv
3. publikasjonsliste og publikasjoner, jfr retningslinjene:
   http://www.lovdata.no/for/sf/kd/kd-20060209-0129.html

Application for professor promotion

I was employed in my current position as associate Professor in biomedicine/molecular biology in October 2012 with the field of proteomics as speciality, and herby apply for promotion to Professor with the same filed as speciality.

Scientific qualifications

I have a total of 36 scientific articles published in international per-reviewed journals (25 over the last five years), 6 as first author and 6 as last author. The majority of the publications are within the area of proteomics, and where proteomics has been applied to answer scientific/biological questions. During my PhD (2002-2005) I worked with membrane proteins in a Gram-Negative bacteria (Methylococcus capsulatus), focusing on identifying and characterizing the outer membrane proteome both experimentally and using/developing bioinformatics tools (Papers 31-36 in the attached publication list). After my PhD and to this date, I've continued working with proteomics with the main focus being biomarker discovery in multiple sclerosis. In this field I've published papers on biomarker discovery (4, 6, 16, 19, 23, 30), CSF proteome sample stability (28, plus one manuscript submitted to *Molecular and cellular biology*), proteomics/bioinformatics method development (7, 14, 17, 24, 27), CSF sample collection consensus protocols (9, 21, 22), and categorization of control groups for biomarker discovery in multiple sclerosis (1). Another project that I have become more and more involved in over the last two years is based on using proteomics to find biomarker candidates for Acute Myeloid Leukemia (AML). The first manuscript with my involvement will be submitted shortly to *Journal of proteome research* (I'll be second last author) with one of my PhD students that recently started in this project (January 2013) as first author. My group is currently also a part of the Human Proteome Project where we focus on mapping and creating quantitative assays for the human chromosome 19 proteome and to study diseases related to this chromosome (2, 5). I'm also strongly involved in a project characterizing the proteome of arachnoidal cyst fluid and comparing this to cerebrospinal fluid (3, 11, 18) (two as last author, where I was co-supervisor for a PhD student and first author Magnus Berle). In addition to these main areas of research I've been involved in a large number of projects where I have contributed with expertise in proteomics, molecular biology and bioinformatics as can be seen from the publication list (for example characerizing the exported proteins from *Mycobacterium tuberculosis* and *Mycobacterium bovis* (25, 26), Methanotroph outer membrane preparation and proteome function (12, 13), Compomics-utilities: an open source Java library for computational proteomics and Search GUI (14, 15)).

Pedagogical qualifications, teaching and counselling

I've been lecturing in several courses at UiB over the last ten years, both at the Master and PhD level (see my CV for details). I've been course co-responsible for the PhD-level course BMED905 Biomedical Research Course in Proteomics at the Institute of Biomedicine, UiB. In addition to the teaching in regular courses at the University, I've been responsible for courses in proteomics every year for the last four years. These courses typically last for one week, full eight hour days, and is aimed towards

Master and PhD students, as well as post doctors (mainly from Norway, but also from other parts of Europe). These courses have given the PhD-students credits in their degree. My part involves both planning and organizing the course, giving lectures and following up the students during the practical tasks. An evaluation report from one of these courses is attached, and one of the comments in this report was: "Great instructors! Especially I need to give some extra mention for Frode Berven and his teaching skills". I'm also part of a working group to elucidate the possibility for UiB to collaborate with the Bergen University College to establish a Master study in laboratory technology – proteomics and genomics. I'm currently participating in a Basic University Pedagogic course (UPED 620), and the course will be completed in December 2013. When it comes to supervising master students and PhD students, I have previously been co-supervisor for three Master students and main supervisor for four Master students. In addition, I've been co-supervisor for three PhD students and main supervisor for one PhD student that have completed their PhD degree. Currently I'm main supervisor for two PhD students, co-supervisor for two master students, and co-supervisor for two PhD students (documented supervising experience for Master students and PhD students can be found on the sheet Bekreftelse). All the master and PhD-students have finished their thesis within the prescribed timeframe. An evaluation summary PROBE quantitative proteomics course 2010 is also added.

Scientific management experience

After my post doc period (ended in 2009) I got a three year position as Head of PROBE. After the three years, I applied for and was rewarded an associate professor position, where the leadership of the platform was part of the content of the positions. The position is divided between being the daily manager of the core facility PROBE (20%) and managing my own research group (80%). In the manager role of PROBE, I have the responsibility for the incoming service and collaboration projects, both regarding recruiting these projects, the conduction and organisation of the conduction of the projects, follow-up towards the project managers and more. I also have the responsibility for the PROBE economy, organisation of the platform, including obtaining funding for instrumentation, and the responsibility for the PROBE employees. The PROBE staff currently counts three engineers and one associate professor (20%). During my period as leader of PROBE, there has been a clear increase both regarding the scientific output from the platform, the number of projects using the platform, and in the number and quality of relevant instrumentation (mass spectrometers, HPLCs etc.) that has arrived to the platform.

The research group that I'm leading at PROBE consist of two PhD-student, three post doctors, two scientists and two master students. The main project in my research group is the discovery and verification of biomarker candidates in multiple sclerosis patients. In addition, we are one of the groups participating in the Human Proteome Project (http://www.hupo.org/research/hpp/) as we are a part of the Chromosome 19 Proteomics Consortium (http://www.chromosome19hpp.org/). Another important project that the research group is heavily involved in is the acute myeloid leukemia (AML) biomarker project. The goal of the project is to find biomarker candidates that can predict treatment efficiency and guide the selection of individual treatment regimes. In addition to these projects, the research group is involved in several collaborative projects. In 2011 I was selected as one of eight young research leaders at the Medical faculty to join a leadership-program that stretches over one year with five

2-3 days gatherings where the subject is to learn more about different aspects of scientific leadership.

Networking and collaboration

I have established international collaboration with a large number of leading international groups. This includes the Broad Institute of MIT and Harvard (Attachment 8, Collaboration statements and recommendations (Steven Carr)), the Chromosome 19 Proteomics Consortium with proteomics groups from Sweden, Spain and the US in additional to various clinical partners (http://www.chromosome19hpp.org/?cont=sections), The BioMS-eu consortium lead by Charlotte Teunissen, Professor Lennart Martens group in bioinformatics, Department of Medical Protein Research, Ghent University, and Professor Albert Heck, Biomolecular Mass Spectrometry and Proteomics Group, Utrecht University. Currently I'm collaborating with approximately 15 research groups in Norway on a large variety of different quantitative proteomics projects. Several of these projects have engineers, PhD candidates or post doctors linked to the platform and I'm currently co-supervisor for two such PhD students. The increase in number of projects using the platform, and the increasing number of scientists that are being supervised/guided in their projects indicates my ability to collaborate, create a strong research environment and conduct good supervision. I'm also leading the NorProteomics consortium, which consists of 8 different proteomics laboratories in Norway (www.uib.no/rg/norproteomics). The consortium has successfully established a division of labour, enabling local specialization while together catering for the full range of proteomics needs of the research environment in Norway. The consortium collaborates closely by forwarding samples between the different nodes to where competence and instrumentation is best suited to cater for the researcher's specific proteomics needs.

External funding

During my post doc position and the last three years in my current position as PROBE leader and associate professor, I have established myself as an independent scientist within biomedicine with focus on proteomics. When I started as leader of PROBE in September 2009, the mass spectrometers were old and it was difficult to do research based on quantitative proteomics and high throughput proteomics at PROBE. During the last years I have been involved in rising funding and obtaining a substantial amount of proteomics equipment. I was in 2009 and 2010 involved in raising funding and obtaining a Q-trap 5500 mass spectrometer for SRM analysis that is connected to PROBE (Installed in 2010) (reference: Rune Ulvik). I was also involved in obtaining an Orbitrap Velos Pro mass spectrometer in 2010-2011, which was installed in September 2011, financed by Helse Bergen but operated by PROBE. In addition, I have raised funding for several smaller instrument units, including two HPLC instruments (1,2 million NOK), one autosampler (250k NOK), Progenesis software for label free quantification (250k), Nitrogen generator (100k NOK), and a vacuum centrifuge (100k NOK). All the equipment mentioned above (total value of ~13.5 million NOK) are organized under and operated by PROBE. The equipment has been crucial for the successful establishment of my research group and conduction of the

projects, also from other scientific groups that use PROBE, particularly in the context of quantitative proteomics.

When starting my position as Head of PROBE in September 2009, I had one PhD student in my research group. Since then, my research group has grown to presently including two PhD student, three post doctors, two scientist and two master students. I'm also co-supervising two PhD-students that are working with proteomics as part of their project.

I'm leading the multiple sclerosis biomarker discovery project which is based on using the techniques label-free and chemical labelling based shotgun quantification of proteins in cerebrospinal fluid and brain tissue in addition to Selected Reaction Monitoring for target quantification in verification studies (reference: Kjell-Morten Myhr). During the last 3 years, I have applied as PI and received funding from three sources for the multiple sclerosis biomarker project, in total 3,65 million NOK. Apart from these 3,65 million, a three year post doctor position in bioinformatics was also granted to my research group at PROBE from another RCN application (2011-2014). In addition, I was co-applicant on an application for a KG-Jebsen Centre in 2010/2011, aiming for "Identification of Biomarkers to define the cause of multiple sclerosis" which was granted 16 million from the Jebsen Foundation (http://www.stiftkgj.no/en/news/14-k-g-jebsen-senter-for-ms-forskning-apnet.html). Including the contribution from the University of Bergen and other funding sources the project has a financial frame of 40 mill NOK of which 12-16 mill NOK will be used towards the proteomics part of this project which is lead by me and runs from 2011-2015 (reference: Kjell-Morten Myhr, and Attachment, Collaboration statements and recommendations). In addition, I was rewarded with two PhD students and one post doctor through last years open applications rounds at the UiB, where I was PI/supervisor for all three.

Dissemination/outreach

For the last years I have typically had between 2-6 presentations per year at national and international conferences including both posters and oral presentations, in addition to several local seminars aimed at distributing information about the possibilities for research using proteomics and related techniques. I've also published two articles in popular scientific journals, one in NBS-nytt (the MS biomarker discovery project) and one in Public Services EU (The NorProteomics consortium 2011).

Curriculum vitae for Frode S. Berven

Department of Biomedicine, University of Bergen, 5009 Bergen, Norway
Date of birth: October 18th 1976
Phone number: (+47) 99 16 38 66
Email address: Frode.Berven@biomed.uib.no

Research positions/experience:

2012- **Associate Professor** Department of Biomedicine, UiB and Head of the Proteomics unit UiB.

2009-2012 **Head of the Proteomics Unit** at UiB.

2008- 2009 **Scientific stay** at the Proteomics Platform of the Broad Institute of MIT and Harvard, January 2008 - June 2009.

2005-2009 **Post Doctoral Fellow**, Institute of Medicine, UiB. July 2005- August 2009. Proteomics-based biomarker discovery in biofluids with emphasise on cerebrospinal fluid and multiple sclerosis. Project leaders: Dr. Prof. Rune J. Ulvik / Frode Berven.

2005 **Research scientist** at the Proteomic Unit (PROBE), UiB. Feb-July 2005.

2001 **Research Assistant.** Analysis of two IgM isotypes in Atlantic salmon and brown trout using 2-dimensional gel electrophoresis. Adviser: Prof. Curt Endresen. Department of Fisheries and Marine Biology, UiB, Norway.

Publications:

33 original research articles in international per-reviewed journals.
3 review articles in international per-reviewed journals.
My h-index is 15 (obtained during 12 years in science, current age 36 years, first publication in 2002). Obtained by the citation report on "web of science" searching with "Berven F" or "Berven FS".

Supervisor experience:

2008-2013 **Main supervisor for four master students** within the MS biomarker discovery project and CSF proteomics: Astrid Guldbrandsen (2011-2012), Heidrun Vethe (2011-2012), Yngvild Bjørlykke (2010-2011), Elise Aasebø (2010-2011).

Co-supervisor for two master students within the MS biomarker discovery project and CSF proteomics: Ragnhild Reehorst Lereim (2013-2014). Elaheh mahootchi (2013-2014).

Main supervisor for four post doctors: Marc Vaudel (2013-2016), Harald Barsnes (2011-2014) ThinThin Aye (2011-2012) and Jill Opsahl (2011-2014).

Main supervisor for three PhD-students: Ann Cathrine Kroksveen (2008-2012). PhD-degree granted April 2012. Astrid Guldbrandsen (2013-2016). Elise Aasebø (2013-2016).

Co-supervisor for six PhD-students: Lars Breivik (2010-12, PhD-degree granted February 2012), Magnus Berle (2011-13, PhD granted May 2013), Sigrun Hjelle (2010-2013, PhD granted January 2013). Kenneth Finne (2011-2014), Helge Erikstad (2011-2013), Erik Helgeland (2012-2014).

Staff-responsibility for three engineers.

	Supervising an Erasmus student from Holland, Arthur van der Burgh (2012-2013).
2006-2007	**Main supervisor for two master students** (Ann Cathrine Kroksveen and Sara Olausson) and **co-supervisor for one medical student** (Magnus Berle) in the field of clinical proteomics.
2005, 2006	**Laboratory supervisor for four bioengineer main project students** from the "Bergen University College", Proteomisk analyse etter MR-undersøking av barn (2006) Proteomiske analyser ved cellulært stress (2005). Tutor: Alvhild A. Bjørkum.
2003-2004	**Co-supervisor for one master student** in proteomics, Anne Hege Straume. Characterization of outer membrane protein complexes from *Methylococcus capsulatus* (Bath)

Commissions:

2013	Committee leader for PhD thesis defence of Hanne Hox, UiB.
2011	Second opponent for Maria Stensland's PhD defence at UiO
2009-	Leader of the FUGE-funded Norwegian Proteomics Consortium (NorProteomics).
2010-	Member of the board of the Norwegian Proteomics Forum.
2008-	Norwegian representative in BioMSeu, European biomarker consortium for multiple sclerosis.
2004	Ph.D. representative in the Education and Science committee, UiB.
2003	Leader of the program committee for a national conference in bioinformatics for young scientists.

Education:

2002-2005	**Ph.D.** "Analysing the outer membrane subproteome of *Methylococcus capsulatus* (Bath) using proteomics and bioinformatics". Advisers: Dr. Ingvar Eidhammer and Prof. Harald B. Jensen. Departments of Informatics and Molecular Biology, UiB, Norway.
2000-2001	**Cand. scient.** "The establishment and use of 2-dimensional gel electrophoresis in proteome studies of *Methylococcus capsulatus* (Bath)". Adviser: Harald B. Jensen. Department of Molecular Biology. UiB.
1998-1999	**Cand. mag.** degree in molecular biology, UiB.
1996-98	Biotechnology at the University College in Hedmark

Teaching experience:

2013	Responsible for two project students in BMED 320, 8 weeks.
2011-2013	Lecturing in BMED 320, yearly lecture in Proteomics.
2010-2013	Lecture in MEDMET1, Basic Course in Medical and Health Related Research, UiB. Level: PhD.
2009-2013	Lecturing in and responsible for proteomics courses at PROBE, theoretical and practical. Course length 1 week, yearly. Level: Masterstudents/PhD-students/post doctors.
2005	Lectures in the course Protein Chemistry, UiB.
2001-2004	Correcting compulsory exercises in Applied Bioinformatics, UiB.
2003	Lectures in the course Protein Chemistry, UiB.
2000/2001	Laboratory assistant in different Molecular Biology courses, UiB.
2000	Leader of the colloquium group in the course Biochemistry, UiB.

Publications

1. A Teunissen C, Menge T, Altintas A, Alvarez-Cermeño JC, Bertolotto A, Berven FS, Brundin L, Comabella M, Degn M, Deisenhammer F, Fazekas F, Franciotta D, Frederiksen JL, Galimberti D, Gnanapavan S, Hegen H, Hemmer B, Hintzen R, Hughes S, Iacobaeus E, Kroksveen AC, Kuhle J, Richert J, Tumani H, Villar LM, Drulovic J, Dujmovic I, Khalil M, Bartos: **Consensus definitions and application guidelines for control groups in cerebrospinal fluid biomarker studies in multiple sclerosis.** Mult Scler. 2013. *(in press)*
2. A Malm J, Fehniger TE, Danmyr P, Végvári A, Welinder C, Lindberg H, Appelqvist R, Sjödin K, Wieslander E, Laurell T, Hober S, Berven F, Fenyö D, Wang X, Andrén PE, Edula G, Carlsohn E, Fuentes M, Nilsson C, Dahlbäck M, Rezeli M, Erlinge D, Marko-Varga G: **Developments in biobanking workflow standardization providing sample integrity and stability.** J Proteomics. 2013. *(in press)*
3. A Berle M, Kroksveen AC, Garberg H, Aarhus M, Haaland OA, Wester K, Ulvik RJ, Helland C, Berven F: **Quantitative proteomics comparison of arachnoid cyst fluid and cerebrospinal fluid collected perioperatively from arachnoid cyst patients.** Fluids Barriers CNS. 2013 Apr 29;10(1):17.
4. A Kroksveen AC, Aasebø E, Vethe H, Van Pesch V, Franciotta D, Teunissen C, Ulvik RJ, Vedeler C, Myhr KM, Barsnes H, Berven FS: **Discovery and initial verification of differentially abundant proteins between multiple sclerosis patients and controls using iTRAQ and SID-SRM.** J. Proteomics. 2013 Jan 14;78:312-25.
5. A Carol L. Nilsson, Frode Berven, Frode Selheim, Huiling Liu, Joseph R. Moskal, Roger A. Kroes, Erik P. Sulman, Charles A. Conrad, Frederick F. Lang, Per E. Andrén, Anna Nilsson, Elisabet Carlsohn, Hans Lilja, Johan Malm, David Fenyö, Devipriya Subramaniyam, Xiangdong Wang, Maria Gonzales-Gonzales, Noelia Dasilva, Paula Diez, Manuel Fuentes, Ákos Végvári, Karin Sjödin, Charlotte Welinder, Thomas Laurell, Thomas E. Fehniger, Henrik Lindberg, Melinda Rezeli, Goutham Edula, Sophia Hober and György Marko-Varga: **Chromosome 19 Annotations with Disease Speciation: A First Report from the Global Research Consortium,** J. Proteome Res. 2013 Jan 4;12(1):135-50.
6. A Kroksveen AC, Guldbrandsen A, Opsahl J, **Berven FS**. "Cerebrospinal fluid proteome comparison between multiple sclerosis patients and controls." Acta Neurologica Scandinavia, 2012 Oct 8. pii: S1874-3919(12)00693-8.
7. A Aye TT, Low TY, Bjørlykke Y, Barsnes H, Heck AJ, **Berven FS**. "Use of stable isotope dimethyl labeling coupled to selected reaction monitoring to enhance throughput by multiplexing relative quantitation of targeted proteins." Anal Chem. 2012 Jun 5;84(11):4999-5006.
8. A Mjaavatten O, Nygaard G, **Berven FS** and Selheim F. "Minimization of side reactions during Lys Tag derivatization of C-terminal lysine peptides." Analytica Chimica Acta. 2012 Jan 27;712:101-7.

9. A Teunissen CE, Tumani H, Bennett JL, **Berven FS**, Brundin L, Comabella M, Franciotta D, Federiksen JL, Fleming JO, Furlan R, Hintzen RQ, Hughes SG, Jimenez CR, Johnson MH, Killestein J, Krasulova E, Kuhle J, Magnone MC, Petzold A, Rajda C, Rejdak K, Schmidt HK, van Pesch V, Waubant E, Wolf C, Deisenhammer F, Giovannoni G, Hemmer B. "Consensus guidelines for CSF and blood biobanking for CNS biomarker studies". Mult Scler Int. 2011;2011:246412.
10. A Kamil A, Falk K, Sharma A, Raae A, **Berven F**, Koppang EO, Hordvik I. "A monoclonal antibody distinguishes between two IgM heavy chain isotypes in Atlantic salmon and brown trout: protein characterization, 3D modeling and epitope mapping." Mol Immunol. 2011 Sep;48(15-16).
11. A Berle M, Kroksveen AC, Haaland OA, Aye TT, Opsahl JA, Oveland E, Wester K, Ulvik RJ, Helland CA, **Berven FS**. "Protein profiling reveals inter individual protein homogeneity of arachnoid cyst fluid and high qualitative similarity to cerebrospinal fluid." Fluids Barriers CNS. 2011 May 20;8(1).
12. A Karlsen OA, **Berven FS**, Jensen HB, Fjellbirkeland A. "Methanotroph outer membrane preparation". Methods Enzymol. 2011;495:167-76.
13. **A** Karlsen OA, **Berven FS**, Bagstevold JI, Larsen O, Jensen HB. "Methylococcus capsulatus (Bath) from genome to protein function, and vice versa."Methods Enzymol. 2011;495:63-79.
14. A Barsnes H, Vaudel M, Colaert N, Helsens K, Sickmann A, **Berven FS**, Martens L "Compomics-utilities: an open source Java library for computational proteomics", BMC Bioinformatics March 2011, 8;12:70.
15. A Vaudel M, Barsnes H, **Berven FS**, Sickmann A, Martens L. "SearchGUI: An open-source graphical user interface for simultaneous OMSSA and X!Tandem searches", *Proteomics,* 2011 Mar;11(5):996-9.
16. C Kroksveen AC. Opsahl JA. Aye TT. Ulvik RJ. **Berven FS**. "Proteomics of human cerebrospinal fluid. Discovery and verification of disease biomarker candidates in neurodegenerative diseases using quantitative proteomics." *Journal of Proteomics,* 2011 Apr 1;74(4):371-88.
17. A Arntzen MØ, Koehler CJ, Barsnes H, **Berven FS**, Treumann A, Thiede B. "IsobariQ: A software for isobaric quantitative proteomics using IPTL, iTRAQ and TMT." *Journal of Proteome Research*, 2011, 10(2), 913-20.
18. A Berle M, Wester KG, Ulvik RJ, Kroksveen AC, Haaland OA, Amiry-Moghaddam M, **Berven FS**, Helland CA. "Arachnoid cysts do not contain cerebrospinal fluid: A comparative chemical analysis of arachnoid cyst fluid and cerebrospinal fluid in adults." *Cerebrospinal fluid research,* 2010, 7(8).
19. A Rajalahti T, Kroksveen AC, Arneberg R, **Berven FS**, Vedeler CA, Myhr KM, Kvalheim OM. "A multivariate approach to reveal biomarker signatures for disease classification: application to mass spectral profiles of cerebrospinal fluid from patients with multiple sclerosis." *Journal of Proteome Research,* 2010, 9(7):3608-20.
20. A **Berven FS**. Ahmad R. Clauser K. Carr SA. "Optimizing performance of glycopeptides capture for plasma proteomics". *Journal of Proteome Research,* 2010, 9(4):1706-15.
21. A Teunissen CE, Tumani HT, Bennett JL, **Berven FS**, Deisenhammer F, Giovannoni G. "Short commentary on 'a consensus protocol for the

standardization of cerebrospinal fluid collection and biobanking." *Multiple Sclerosis, 2010, 16(2) 129-32.*

22. A Teunissen CE, Tumani HT, Bennett JL, **Berven FS**, Comabella M, Wolf C, Tumani H, Hemmer B, Deisenhammer F. "A consensus protocol for standardisation of CSF sampling and biobanking." *Neurology*, 2009, 73, 1914-1922.
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25. A Målen H, **Berven FS**, Søfteland T, Arntzen ØM, D'Santos C, Wiker H. "Membrane- and membrane associated proteins in Triton X-114 extracts of Mycobacterium bovis BCG identified using a combination of gel-based and gel-free fractionation strategies". *Proteomics*. 2008, 8(9) 1859-70.
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28. A **Berven FS,** Kroksveen AC, Berle M, Flikka K, Myhr KM, Vedeler C, Arneberg R, Rajalahti T, Kvalheim OM, Ulvik RJ. "Pre-analytical influence on the low molecular weight cerebrospinal fluid proteome". *Prot. Clin. App.,* 2007, 1(7) 699-711.
29. A Aukrust I, Evensen L, Hollas H, **Berven FS**, Atkinson RA, Trave G, Flatmark T, Vedeler A. "Engineering, biophysical characterization and binding properties of a soluble mutant form of annexin A2 domain IV that adopts a partially folded conformation". *Journal of molecular biology*. 2006 Oct 20;363(2):469-81.
30. C **Berven FS**, Flikka K, Berle M, Vedeler C, Ulvik RJ. "Proteomic-based biomarker discovery with emphasis on cerebrospinal fluid and multiple sclerosis". *Curr Pharm Biotechnol.* 2006 Jun;7(3):147-58. Review.
31. A **Berven FS**, Karlsen OA, Straume AH, Flikka K, Murrell JC, Lillehaug JR, Fjellbirkeland A, Eidhammer I, Jensen HB. "Analysing the outer membrane subproteome of *Methylococcus capsulatus* (Bath) using proteomics and novel biocomputing tools". *Arch Microbiol*. 2006 Feb;184(6):362-77. Epub 2005 Nov 26.
32. A Karlsen OA, Ramsevik L, Bruseth LJ, Larsen O, Brenner A, **Berven FS,** Jensen HB, Lillehaug JR. "Characterization of a prokaryotic haemerythrin from the methanotrophic bacterium Methylococcus capsulatus (Bath)". *FEBS journal* 2005, Volume 272, Issue10, Pages 2428-2440.
33. B **Berven FS**. "Analysing the outer membrane subproteome of *Methylococcus capsulatus* (Bath) using proteomics and bioinformatics". Ph.D. Thesis. University of Bergen, Bergen, 2005.

34. A **Berven FS,** Flikka K, Jensen HB, Eidhammer I. "BOMP: a program to predict integral β-barrel outer membrane proteins encoded within genomes of Gram-negative bacteria". *Nucleic Acids Research* 2004, Volume 32, Web Server Issue, Pages W394-399.
35. A Karlsen OA, **Berven FS,** Stafford GP, Larsen O, Murrell JC, Jensen HB, Fjellbirkeland A. "The surface-associated and secreted MopE protein of Methylococcus capsulatus (Bath) responds to changes in the concentration of copper in the growth medium". *Applied Environmental Microbiology*, April 2003, Volume 69, Issue 4, Pages 2386-2388.
36. A **Berven FS**, Karlsen OA, Murrell JC, Jensen HB. "Multiple polypeptide forms observed in two-dimensional gels of *Methylococcus capsulatus* (Bath) polypeptides are generated during the separation procedure". *Electrophoresis*, February 2003, Volume 24, Issue 4, Pages 757-761.
37. A Hordvik I, **Berven FS,** Solem ST, Hatten F, Endresen C. "Analysis of two IgM isotypes in Atlantic salmon and brown trout". *Molecular Immunology* October 2002, Volume 39, Issue 5-6, Pages 313-321.

OVERSENDELSE AV SØKNAD OM PERSONLIG OPPRYKK TIL PROFESSOR ETTER KOMPETANSE VED UiB

Jfr forskrift om ansettelse og opprykk i undervisnings- og forskerstillinger

Søknadsfrist: Søknad må være mottatt på fakultetet 15. september

Opplysninger om søker (fylles ut av søker selv):

Søkers etternavn:	Fornavn:	Fødselsdato:
Selheim	Frode	11.10.1964
Søkers stilling:		
Førsteamanuensis		
Søkers høyeste utdanning/grad/institusjon:		
Ph.D. (Dr. scient), Biochemistry and Molecular Biology, University of Bergen, Norway.		
Søkers spesialitet m. h. t. fordypning:		
Proteomics and cell signalling		

	Ja	Nei
Har søker p.t. til vurdering søknad på utlyst professorstilling?		✓

Hvis ja, oppgi hvilke(n) institusjon(er):

	Ja	Nei
Har søker sendt inn søknad om opprykk til professor eller vært vurdert for professorkompetanse i løpet av de siste to år før søknadsfristen?		✓

Hvis ja, oppgi institusjon(er) og fagområde(r):

Oppgi søknadsfrist(er):

15 september

Fylles ut av instituttet:

Institutt: Institutt for biomedisin

Kontaktinformasjon ved instituttet: Kontaktperson, postadresse, tlf nr og e-postadresse:

Rolf K. Reed, Postboks 7804, 5020 Bergen, 55586389, rolf.reed@biomed.uib.no

Søkers fagområde iflg tilsetting:

Medisin, analytisk proteomikk

Når ble det evt sist utlyst professorstilling ved UiB innen søkers fagområde/spesialitet?

Mer enn 5 år siden

ERKLÆRING FRA BEDØMMELSESKOMITEEN

	Sett kryss her
Komiteen avgir enstemmig kompetanse-erklæring Søker bedømt kompetent for opprykk	☐
Annet utfall av bedømmingen – Søker er ikke er erklært kompetent for opprykk	☐

Bergen 13.09.2013
Sted og dato

Frode Selheim
Underskrift

Vedlegg til søknadsskjemaet:
1. søknad
2. cv
3. publikasjonsliste og publikasjoner, jfr retningslinjene:
   http://www.lovdata.no/for/sf/kd/kd-20060209-0129.html

SØKNAD OM PERSONLIG OPPRYKK TIL PROFESSOR ETTER KOMPETANSE VED UIB

Research activities (current and past)
Associate professor Frode Selheim

Cand. scient. (M.Sc.) degree in Biochemistry and Molecular Biology, University of Bergen, Norway, was completed from 1992 to 1995 with Professor Johan R. Lillehaug as supervisor. Thesis: *"c-fos mRNA processing in normal and tumorigenic cells C3/10T1/2"*. The task was, using molecular biological techniques (DNA and RNA isolation, reverse transcriptase cDNA synthesis, PCR, DNA sequencing), to examine the 3'-terminus of the c-fos proto-oncogene in a chemical carcinogen transformed mouse cell line. The result of the work was clear and of importance for the understanding of c-fos mRNA processing in these cell lines.

Defended dr. Scient. thesis *"Autocrine signaling and PDGF-induced inhibition of platelets activation"* at UiB December 11, 1999 with professor Holm Holmsen and Flemming S. Vassbotn as supervisors. The thesis has been important for the understanding of phosphoinositide 3-kinase (PI 3-K) and growth factor PDGF-induced signal transduction in platelets and other cell types. Thin layer chromatography (TLC) in combination with high pressure liquid chromatography (HPLC) were implemented and used for quantification of the PI 3-K products PI(3-4)P_2 and PI(3,4,5)P_3 in the thesis. Two articles from the dr. thesis, numbered 2, 3 and 4 in the publication list below, are attached to this application.

Researcher / Post Doctor (2000-2005): Research activities in this period have focused on signal transduction (cAMP signalling), in neuroendocrine cell lines and human platelets (attachment: article 7, 9 and 10 from publication list below). I have been involved in the establishment of marine bioprospecting in the Translational Signalling Group (TSG, https://www.uib.no/rg/tsg) at the Department of Biomedicine, particularly for screening of bioactive substances from marine microorganisms with anti-leukemic and anti-aggregating properties (attachment: article 13). Proteomic tools were also used in these studies (attachment: article 21), and several projects with isolated anti-leukemic novel compounds that interfere with the apoptotic machinery are under investigation (attachment: article 27, cooperation with SO Døskeland an L.Herfindal).

2006-2013: Employed as associate professor and deputy platform leader at the Proteomics Unit at the University of Bergen (PROBE, http://www.uib.no/rg/probe) and the Translational Signalling Group (TSG, https://www.uib.no/rg/tsg) at the Department of Biomedicine. Workload is distributed approximately equally between the two groups.

PROBE, was established as a national core facility in 2002-03 by the Norwegian Research Council under the Functional Genomics Initiative (FUGE). Before this FUGE initiative the proteomics efforts in Norway had been done at a limited scale. The mission of PROBE is to provide the Norwegian scientific community access to the best proteomic technologies and competence. Extensive investment in development of proteomics technologies, in training of technical staff to run and maintain the advanced mass spectrometers and HPLC, as well as to provide service and supervision of users/projects at PROBE has been performed. PROBE is currently equipped with the state-of-the-art Orbitrap Velos Pro and Q-Trap 5500 mass spectrometers that were required for the quantification approaches which I have established and implemented at PROBE. This includes the quantitative proteomics approaches; the stable isotope labelling by amino acids in cell culture (SILAC, article 19 and 29 attached), 2-methoxy-4,5-dihydro-1H-imidazole (Lys Tag)

derivatization (attachment: article 25) and label-free quantification (attachment: article 30). Using label-free quantification and the mass spectrometer Orbitrap Velos Pro, we found significantly changed expression of several proteins in Epac1-deficient mice (bleeding phenotype), including down-regulated coagulation factors in plasma, up-regulated Integrin αIIbβ receptors and down-regulated platelet GP1bβ of the GPIb-IX-V complex, which is crucial for platelet adhesion under arterial shear conditions (attachment: article 30).

The TSG collaborate closely with the PROBE platform and was influential in the establishment of this national platform for proteomics. My research activity in the TSG has been focused on cell signalling/proteomics with relevance for thrombosis and cancer. I have established a new sensitive quantitative proteomic method (Super-SILAC) to analyse primary patient Acute Myeloid Leukemia (AML) cells (Norwegian Cancer Society (NCS), the Research Council of Norway (NRC)/FUGE-sponsored project). SILAC requires selective marking of the proteomes to be compared with either heavy or light amino acids. Due to the mass difference between the heavy and light amino acids (e.g. ^{12}C-arginine and ^{13}C-arginine, +6Da) the marking-differences can be quantified by mass spectrometry. Preparations of an AML-super SILAC mix from five cancer-derived AML cell lines (THP-1, NB4, MV4-11, Molm-13 and OCI AML), a reference standard for quantification of disease related AML proteins, has been established (attachment: article 29). The super-SILAC mixture of heavy isotope labelled AML cell line proteins has now been used for evaluation of protein expression in primary patient AML cells. The pilot experiment compared AML blasts from 8 patients, both before start of chemotherapy and during chemoresistant relapse (after therapy). 50,000 different peptides were detected for each patient sample, and several proteins were overexpressed in all relapses. Many of the overexpressed AML disease linked proteins are potential drug targets. An on-going experiment on AML cells from patients with stable complete remission will tell whether the observed overexpressions are linked to treatment resistance. ~100 biomarker candidates that can be used to identify patients with an increased risk of relapse are now being validated in a large number of patients ~200 by targeted quantitative proteomics techniques such as Stable Isotope Dilution. - Selected Reaction Monitoring (SID-SRM) and accurate inclusion mass screening (AIMS) technology. Targeted quantification of candidate proteins that can be used as biomarkers for predicting treatment efficiency and to guide the selection of patients who will benefit from allogeneic stem cell transplantation are funded by NCS (2013-).

Grants

Grants (≥ 100 000 NOK)
Project leader: (2006-2008) *Kvantitativ proteomikk identifisering av cellulære signalproteiner.* Meltzer funding, total **650 000 NOK.**

Project leader: (2008-2011) Småforsk (research funding from UiB/NRC), total **400 000 NOK**. Title 2011; *A Gene-centric Human Proteome Map of Chromosome 19*

Project leader: *Identification of biomarkers for improved prognostics and therapy in AML*
FUGE grant "NorProteomics/Biohealth" 201311/S10, "received **500 000 NOK** for using AML-biobank samples to perform proteomics analysis at PROBE".
Partners: Prof. Øystein Bruserud, M.D., Ph.D., Dep. of Internal Medicine, Prof. Stein Ove Døskeland, M.D., Ph.D., Dep. of Biomedicine, UoB. Prof. Bjørn Tore Gjertsen, M.D., Ph.D., Dep. of Internal Medicine.

Project leader:*(2013-2015)* ***300 000 NOK*** *granted from* **NCS/ØNP FOND** *to the project: THE DECISION OF WHETHER TO DO AN ALLOTRANSPLANTATION IN ACUTE MYELOID LEUKEMIA (AML) - PROTEOMIC PROFILING OF PRIMARY HUMAN AML CELLS TO IDENTIFY NEW BIOMARKERS FOR CHEMORESISTANCE AND PROGNOSTICATION OF PATIENTS.*

Partner with Professor Øystein Bruserud (project leader): (2014-2017) **12.000.000 NOK** from NCS to investigate: *PERSONALIZED TREATMENT IN ACUTE MYELOID LEUKEMIA GUIDED BY TARGETED PROTEOMICS: Leukemia cell biology and individual clinical evaluation.*

Administrative work/Commissions:

2006-2013- Administrative work as Deputy Platform Leader PROBE (20%) includes courses and co-ordination, follow up projects collaborating with or purchasing services at PROBE and to implement proteomic methods and technology into research projects. I was guest Editor for Curr Pharm Biotechnol in 2006. Ad Hoc reviewer for Blood and other journals. Leader of committee for 3 PhD-evaluations and member of Nature Reader Advisory Panel, 2008-2010. See CV for more information.

Research collaboration (clinical, national, international)

For clinical (translational) AML research my partners are Prof. Øystein Bruserud, M.D., Ph.D., Prof. Bjørn Tore Gjertsen, M.D., Ph.D., Dep. of Internal Medicine, UiB, and Prof. Stein Ove Døskeland, M.D., Ph.D., Department of Biomedicine, UiB.

PROBE is the leading node in the NorProteomic consortium, a National Network for the coordination, integration and development of Norwegian Proteomics Facilities, providing services and supporting Norwegian researches in the field of proteomics (http://www.uib.no/rg/norproteomics). We collaborate with a large number of national (http://www.uib.no/rg/probe/research-projects/collaborators#nationalcollaborators) and international leading groups, including the Chromosome 19 consortium (http://www.chromosome19hpp.org/) that consist of proteomics groups from Sweden, USA, Spain, India and China (attachment: article 26).

Currently, during my sabbatical stay (July-December 2013) at the Parc Scientific of Barcelona, I work with Dr. Aragay, Professor at Institute for Molecular Biology of CSIC at Barcelona Spain._Aragay's research group has recently obtained results that demonstrate the presence of G alpha subunits Gq and G12 at the outer membrane, inter-space and inner membrane of the mitochondria of fibroblasts, cardiomyocytes and mice hearts and livers. In this project quantitative proteomics approaches, combining SILAC with growing of embryonic mouse fibrioblasts (MEF) from knock-out Galpha 12/13 or Galpha q/G11 mice and wild type MEFs, as well as protein-protein interaction technologies, are used to identify and quantify proteins bound to Galpha subunits in mitochondria.

University Teaching Experience:

I have extensive experience in teaching at the university, equivalent to ~3 years in 100% teaching position. Teaching experience includes lectures and laboratory courses for 150-200 students in: Anatomy/Histology (MED1ANA), biochemistry and chemistry (BIOBAS) and proteomics (see also CV). I have achieved good feedback and student evaluations. I completed practical pedagogy at the University of Bergen in 1993 ("delfag 10 vektall" 30 ECTS credits).

Research Supervision Experience

Supervisor for 13 completed master theses (see research results for Frode Selheim in Cristin database for title and abstract of master theses), 1 Post Doc, 3 PhD students (2 present). Gyrid Nygård completed her PhD theses 13 September 2013 (main supervisor).

Publications (1999-2012)

(1999-2012): 29 scientific publications with referee (+1 under review); First author **7**, senior author (last author) **9**, second author **5**. (25 (+2) in PubMed database).
15 peer-refereed scientific articles as the corresponding author.

1. **Selheim F**; Holmsen, H., and Vassbotn, F.S. Platelet-derived growth factor inhibits platelet activation in heparinized whole blood. Thromb.Res 1999;95:185-196.
2. **Selheim F**, Idsøe R, Fukami MH, Holmsen H., Vassbotn FS. Formation of PI 3-kinase products in platelets by thrombin, but not collagen, is dependent on synergistic autocrine stimulation, through secreted ADP. Biochem. Biophys. Res. Commun. 1999;263:780-785.
3. **Selheim F**, Holmsen H, Vassbotn FS H. PI 3-kinase signalling in platelets; the significance of synergistic, autocrine stimulation. Platelets 2000;11:6-19.
4. **Selheim F**, Fukami MH, Holmsen H, Vassbotn FS. Platelet-derived growth factor-induced signalling in human platelets; PI 3-kinase dependent inhibition of platelet activation. Biochem. J 2000; 350:469-475.
5. Tharmapathy P, **Selheim F**, Ødegaard K, Lund A, Holmsen H. Venlafaxine treatment stimulates blood platelet activity. J Clin. Psychopharm. 2000;20:589-590.
6. **Selheim F**, Frøyset AK, Vassbotn FS, Holmsen H. Adrenaline potentiates PI 3-kinase in platelets stimulated with thrombin and SFRLLN: Role of secreted ADP. FEBS Lett. 2000;485:62-66.
7. **Selheim F**, Holmsen H, Vassbotn FS. Identification of functional VEGF receptors on human platelets. FEBS Lett. 2002;512:107-110.
8. Kopperud R, Krakstad C, **Selheim F**, Doskeland SO. Novel twists for an 'old' signaling system. FEBS Lett. 2003 Jul 3;546(1):121-6.
9. Christensen AE, **Selheim F**, de Rooij J, Schwede F, Dao K, Martinez A, Bos JL, Genieser HG, Doskeland SO. cAMP analog mapping of EPAC-1 and cAMP-kinase. Discriminating analogs demonstrate that EPAC and cAMP-kinase act synergistically to promote PC12 cell neurite extension. J Biol Chem. 2003 Sep 12;278(37):35394-402.
10. Jensen, B.O., **Selheim, F.**,Døskeland, S.O., Gear, A.R. and H. Holmsen (2004). Protein Kinase A Mediates Inhibition of the Thrombin-induced Platelet Shape Change by Nitric Oxide. Blood. 2004 Nov 1;104(9):2775-82.
11. H. Hagland, **F. Selheim**, T.J. Keen, Kaja Skjærven, C. Krakstad, A-E. Christensen,L. Herfindal, F. Schwede, H-G. Genieser and S.O. Døskeland. The cAMP Receptors Epac and PKA synergize to induce PC12 cell neuritogenesis and to protect against apoptosis. Second Messengers and Phosphoproteins 2005, 123-128. Research Book chapter: *ISBN:*978-88-7587-113 0
12. Herfindal L, Oftedal L, **Selheim F**, Wahlsten M, Sivonen K, Doskeland SO.. A high proportion of Baltic Sea benthic cyanobacterial Isolates contain apoptogens able to induce rapid death of isolated rat hepatocytes . Toxicon 2005 Sep 1;46(3):252-60.
13. **Selheim F**, Herfindal L, Martins R, Vasconcelos V, Døskeland SO. Neuro-apoptogenic and blood platelet targeting toxins in benthic marine cyanobacteria from the Portuguese coast. Aquat Toxicol. 2005 Sep 30;74(4):294-306.

14. Herfindal L and **Selheim F**. Microcystin produces disparate effects on liver cells in a dose dependent manner. Mini Rev Med Chem. 2006 Mar;6(3):279-85.
15. Kleppe R, Kjarland E and **Selheim F**. Proteomic and computational methods in systems modeling of cellular signaling. Curr Pharm Biotechnol. 2006 Jun;7(3):135-45.
16. **Selheim F**. Proteomic Technologies in Translational medicine. Curr Pharm Biotechnol. 2006 Jun;7(3): (Editorial) 133.
17. Chekenya M, Krakstad C, Svendsen A, Netland IA, Staalesen V, Tysnes BB, **Selheim F**, Wang J et al. The progenitor cell marker NG2/MPG promotes chemoresistance by activation of integrin-dependent PI3K/Akt signaling. Oncogene. 2008 Sep 4;27(39):5182-94..
18. Oveland E, Gjertsen B.T, Wergeland L, **Selheim F**, Fladmark K.E, Hovland R. Ligand induced Flt3-downregulation modulates cell death associated proteins and enhances chemosensitivity to idarubicin in THP-1 acute myeloid leukemia cells._Leuk Res. 2009 Feb;33(2):276-87.
19. Birkeland E, Nygaard G, Oveland E, Mjaavatten O, Ljones M, Doskeland SO, Krakstad C and **Selheim F**. Epac-induced Alterations in the Proteome of Human SH-SY5Y Neuroblastoma Cells. J Proteomics Bioinform 2009: 244-254.
20. Oftedal L, **Selheim F**, Wahlsten M, Sivonen K, Døskeland S.O and Herfindal L. Marine Benthic Cyanobacteria Contain Apoptosis-Inducing Activity Synergizing with Daunorubicin to Kill Leukemia Cells, but not Cardiomyocytes. Mar. Drugs 2010, Oct 14;8(10):2659-72.
21. Jokela J, Herfindal L, Wahlsten M, Permi P, **Selheim F**, Vasconçelos V, Døskeland SO, Sivonen K. Chembiochem. A novel cyanobacterial nostocyclopeptide is a potent antitoxin against microcystins. Chembiochem. 2010 Jul 26;11(11):1594-9.
22. Kleppe R, Krakstad C, **Selheim F**, Kopperud R, and Døskeland S.O. The cAMP-Dependent Protein Kinase Pathway as Therapeutic Target – Possibilities and Pitfalls. Current Topics in Medicinal Chemistry 2011 Mar 29: 1393-1405..
23. Jensen, B.O, Kleppe R, Kopperud R, Nygard G, Døskeland S.O, Holmsen H and **Selheim F**. Dipyramidole synergizes with nitric oxide to prolong inhibition of thrombin-induced platelet shape change in a PKG-independent manner. Platelets 2011;22(1):7-18.
24. Herfindal L, Myhren L, Kleppe R, Krakstad C, **Selheim F**, Jokela J, Sivonen K, and Døskeland S.O. Nostocyclopeptide-M1: a potent, nontoxic inhibitor of the hepatocyte drug transporters OATP1B3 and OATP1B1. Mol Pharm. 2011 Apr 4;8(2):360-7.
25. Mjaavatten O, Nygaard G, Berven F and **Selheim F**. Minimization of side reactions during Lys Tag derivatization of C-terminal lysine peptides. Anal Chim Acta. 2012 Jan 27;712:101-7.
26. Nilsson C, Berven F, **Selheim F**, Andren PE, Carlsohn E, Depriva S, Wang X, Fuentes M, Végvári Á, Welinder C, Laurell T, Fehninger TE, Lindberg H, Rezeli M, Edula G and György Marko-Varga. Chromosome 19 Annotations with Disease Speciation – A First Report from the Global Research Consortium. J Proteome Res. 2013 Jan 4;12(1):135-50.
27. Myhren LE, Nygaard G, Gausdal G, Teigen K, Sletta H, Bruserud Ø, Døskeland SO, **Selheim F,** Herfindal L. Iodinin (1,6-dihydroxyphenazine 5,10 dioxide) is a potent antileukemic compound with high selectivity towards cell lines and patient cells from the myeloid lineage. Mar. Drugs. 2013 Jan 30; 11(2):332-49.
28. Herfindal L, Nygaard G, Kopperud R, Krakstad C, Døskeland SO, Selheim F. Off-target effect of the Epac agonist 8-pCPT-2'-O-Me-cAMP on P2Y12 receptors in blood platelets. Biochem Biophys Res Commun. 2013 Aug 9;437(4):603-8. doi:10.1016/j.bbrc.2013.07.007.
29. Elise Aasebø, Marc Vaudel, Olav Mjaavatten, Gro Gausdal, Arthur Van der Burgh, BjørnTore Gjertsen, Stein Ove Døskeland, Øystein Bruserud, Frode Berven, **Frode**

Selheim. Super-SILAC based quantitative proteomics for comparison of different acute myeloid leukemia cell lines (invited article). PROTEOMICS 2014 Feb.

30. Gyrid Nygaard, Reidun Kopperud, Eystein Oveland, Frode S. Berven, Lene Myhren, Marit Bakke, Erling A. Hoivik, Stein Ove Døskeland, Lars Herfindal, and **Frode Selheim**. Epac1-deficient mice exhibit impaired platelet GPIbβ expression and hemostasis. Blood 2013 (under review).

Other publication:

31. Fladmark K.E. and **Selheim F**. PROBE – nasjonal platform for proteomikk. NBS – nytt 3/2006: 32-35.

Selected Papers in Conference Proceedings (CP), Presentation (P) and Abstracts (A)

(CP) Selheim F, Herfindal L, Knutsen G, Holmsen H, Doskeland SO. Alterations in platelet phospholipid metabolism by substances from a marine microalgae. Chemistry and physics of Lipids 2001;110:139-140.

(CP) Selheim F; Vassbotn F; Holmsen H. Effect of platelet derived growth factor on platelets, an example of autocrine inhibition . PLATELETS Volume: 7 Issue: 5-6 1996: 360-361

(CP) Herfindal L, Jokela, J, Oftedal L, **Selheim F**, Wahlsten M, Kleppe R, Sivonen K, and Doskeland SO. Novel bioactive compounds in benthic cyanobacteria from the Baltic Sea. EUROPEAN JOURNAL OF PHARMACEUTICAL SCIENCES 2006 (28): 26-

(P) Selheim Frode. Proteomikk nettverket. Hvordan er det organisert og hva kan vi tilby. FUGE BOARD/FUGE Meeting SOLA STRAND HOTEL 2. JUNI 2009.

(P) Selheim Frode. Proteomic-plattformen - PROBE. FELLES FAGDAG BIO – BIOMEDISIN, 18. FEBRUAR 2009.

(P) Selheim Frode. Stand: FUGE/Innovasjon Norge sin næringslivskonferanse 24. – 25. september 2007.

(P) Selheim Frode. Faculty Lunch, Plans, visions, organization, service, use and further competence build-up and developement of the PROBE, 2007.

(A) C. L. Nilsson, F. Berven, **F. Selheim**, H. Liu, J. R. Moskal, R. A. Kroes, E. Sulman, C. A. Conrad, F. F. Lang, P. E. Andrén, M. Shariatgorji, E. Carlsohn, D. Subramaniyam, X. Wang, M. Gonzales-Gonzales, N. Dasilva, P. Diez, M. Fuentes, Á. Végvári, K. Sjödin, C. Welinder, T. Laurell, T. E. Fehniger, H. Lindberg, M. Rezeli, G. Edula, S. Hober, G. Marko-Varga. The Chromosome 19 Consortium Pipelines, Assays and Database Build Up. HUPO Congress, Bosten 2012.

(A) G. Nygaard and **F. Selheim.** Epac1 activation induces cell cycle arrest in the human neuroblastoma cell line SH-SY5Y. HUPO Congress, Geneva 2011.

(A) Mjaavatten, Olav; Nygård, Gyrid; **Selheim, Frode.**
Peptide Side-Products of Lys Tag Derivatization reaction. HUPO Congress, Sydney 2010.

Attachment

1. SØKNAD

   A-C. Akademiske grader: Dr scient, cand scient og pedagogikk.

   D. Assignment description (annex to employment).

2. CV

3. Publikasjonsliste og publikasjoner

A

QUOD FELIX FAUSTUMQUE SIT

COLLEGIUM ACADEMICUM

UNIVERSITATIS BERGENSIS

EX AUCTORITATE SIBI LEGIBUS DELATA
ET EX DECRETO

ORDINIS MATHEMATICO-PHYSICI

VIRUM DOCTISSIMUM

FRODE SELHEIM

DOCTOREM SCIENTIARUM
RITE CREATUM PRONUNCIAT

QUOD HIS LITTERIS
SIGILLO UNIVERSITATIS MUNITIS TESTAMUR

BERGIS DIE XXX MENSIS DECEMBRIS ANNO MCMXCIX

Kristi Koch Christiansen
RECTOR UNIVERSITATIS

Vera Rommetvedt
DIRECTOR UNIVERSITATIS

UNIVERSITATIS BERGENSIS SIGILLUM

UNIVERSITETET I BERGEN

DET MATEMATISK-NATURVITENSKAPELIGE FAKULTET

FRODE SELHEIM

født 11. oktober 1964

ER AV DET AKADEMISKE KOLLEGIUM TILDELT GRADEN

DOCTOR SCIENTIARUM

Kreeringsdato : 30.desember 1999
Dato for disputas : 10. desember 1999

AVHANDLINGENS TITTEL:

Autocrine signalling and PDGF-induced inhibition of human platelet activation

Dr.scient.-graden omfatter foruten avhandlingen et individuelt studium, jfr. vedlagte attesterte eksamensutskrift.

Bergen, 28. januar 2000

UNIVERSITETET I BERGEN
Det matematisk-naturvitenskapelige fakultet

fakultetsdirektør

B

UNIVERSITETET I BERGEN

DET MATEMATISK-NATURVITENSKAPELIGE FAKULTET

FRODE SELHEIM ..... født 11. oktober 1964

immatrikulert ved Universitetet i Bergen ..... høst semesteret 1988

har oppnådd graden candidatus scientiarum vår semesteret 1995

Avsluttende muntlig eksamen ble avlagt 23. januar 1995

Hovedfag: Biokjemi ..... Studieretning –

Hovedoppgavens tittel:

c-fos mRNA prosessering i normale og tumorigene C3H/10T1/2 celler

Karakter for hovedoppgaven: 1.3 (en-tre)

Karakter for avsluttende muntlig eksamen (7 vekttall): 1.5 (en-fem)

KBM303, K 352 + spesialpensum i Genterapi

Hovedfagsgruppen omfatter forøvrig K 353.

Hovedfaget bygger på følgende:

Emnegruppe: K 101, K 102, K 103 + K 251.

Studieretningsgruppe: K 255 + K 256.

Jfr. vedlagte attesterte karakterutskrift som må følge vitnemålet.

Bergen 15. februar 1995

Trine Waage
konsulent

Merknad: .....

C

UNIVERSITETET I BERGEN

KARAKTERUTSKRIFT

NAVN: FRODE SELHEIM

FØDSELSNUMMER: 11.10.64 30170

IMMATRIKULERT: Universitetet i Bergen, HØSTEN 1988

HAR TATT FØLGENDE EKSAMENER VED UNIVERSITETET I BERGEN

EMNE		KARAKTER SKR.	KARAKTER MTL.	VEKT TALL	ÅR	SEMESTER
FORBEREDENDE PRØVER:						
EXPHIL	EXAMEN PHILOSOPHICUM	2.8		5	1988	HØST
BIOLOGISKE FAG:						
B104	SEKSUALKUNNSKAP	GODKJENT		1	1989	VÅR
B105	CELLEBIOLOGI, GENETIKK OG ØKOLOGI	2.4		5	1989	HØST
B157	EVOLUSJON, PROSESSER OG MØNSTER	BESTÅTT		2	1990	VÅR
B210	GENERELL MIKROBIOLOGI	2.0		5	1990	VÅR
PRAKTISK PEDAGOGIKK						
PFRED	FAGDIDAKTISK DELFAG I REALFAG	2.7		10	1993	HØST
INFORMATIKK:						
I110	GRUNNKURS I DATABEHANDLING	3.2		5	1991	VÅR
KJEMISKE FAG:						
K103	ORGANISK KJEMI I	2.2		5	1989	VÅR
K102	UORGANISK KJEMI I	2.2		5	1989	HØST
K101	GENERELL KJEMI	2.2		5	1990	VÅR
K251	GENERELL BIOKJEMI	2.2		5	1990	HØST
K217	ANALYTISK RADIOKJEMI	BESTÅTT		2	1991	VÅR
K200	MILJØKJEMI	2.5		3	1991	VÅR
K241	ANALYTISK KJEMI	2.0		5	1991	VÅR
K253	GENTEKNOLOGI	1.6		4	1991	HØST
K255	EKSPERIMENTELL BIOKJEMI	2.1		5	1991	HØST
K353	NUKLEINSYRENES STRUKTUR OG FUNKSJON		1.3	3	1992	HØST
K256	FYSIKALSK BIOKJEMI MED ENZYMOLOGI	2.6		5	1994	VÅR
KJEIH	BIOKJEMI HOVEDFAG	1.3	1.5		1995	VÅR
MATEMATIKK:						
M011	GRUNNKURS I MATEMATIKK 1	3.0		5	1988	HØST

BERGEN, DEN 08.02.95 Anne Grethe Meidell

D

Assignment description
Frode Selheim

(annex to contract of employment)

Job Title:
Associate Professor

Assignment Description:

- At PROBE you have the over all responsibility for:
  - Follow up of projects collaborating with or purchasing services at PROBE
  - Public awareness and of the PROBE platform towards
    - Department and other local research environments (particular focus)
    - Other units and departments at the UiB
    - In the Bergen region
    - Nationally
    - Other nodes within the consortium
  - Courses structure and co-ordination

Within your total position you should direct approximately 20% of your effort towards the above tasks. For the practical execution of appropriate measures you can rely also upon the Post Doctor, Research Coordinator and the PROBE technical staff. The responsibility however remains with you. When mutually beneficial you should aim to coordinate your efforts with MIC.

Please note that the above list of responsibilities is not exhaustive and does not prevent other responsibilities from falling within your realm.

During 2009 this assignment description will be evaluated with the Head of Department every three months and thereafter within the regular framework of employees conversations once every year.

Bergen 04.03.2009

Frode Selheim
Deputy Platform Leader PROBE

Frode Selheim

Rolf K Reed
Head of Department

2

Curriculum Vitae-Frode Selheim

Born: 11.10.64 in Bergen, Norway.
Present Position: Associate professor, Department of Biomedicine, University of Bergen and Deputy Platform Leader of the Proteomics Unit at University of Bergen.
Address: Department of Biomedicine, UiB, Jonas Liesvei 91, N-5009 Bergen, Norway
Tel.: (+47)55586091, Email: frode.selheim@biomed.uib.no

Academic degrees:

1992 B.Sc. (Cand. mag.), Chemistry, University of Bergen, Norway.
1995 M.Sc. (Cand. scient.), Biochemistry and Molecular Biology, University of Bergen, Norway.
1999 Ph.D. (Dr. scient), Biochemistry and Molecular Biology, University of Bergen, Norway.

Research Positions/Professional experience:

1996-1999 Research fellow at Department of Biochemistry and Molecular Biology, University of Bergen.
1999-2000 Assistant Professor (8 month engagement) at Department of Biochemistry and Molecular Biology, University of Bergen.
2000 Researcher at Department of Otolaryngology/Head and Neck Surgery (50%), Haukeland University Hospital.
2000 Researcher at Department of Anatomy and cell Biology (50%), University of Bergen.
2001-2003 Post doctor at Department of Anatomy and cell Biology, University of Bergen.
2003-2005 Post doctor, Proteomics Unit at University of Bergen (PROBE).
2006-2013- Associate professor at Department for Biomedicine, University of Bergen.
2006-2013- Deputy Platform Leader PROBE.

Administrative work/Commissions:

- Member of the department council, Department of Biochemistry and Molecular Biology, University of Bergen 1993 and 1997. Treasurer and member of programme Committee in ETRO working party on Platelet Signalling Transduction. International Conference, Brakanes Hotel, Ulvik June 26-28 1996. Secretary, second COST 844 workgroup meeting on " Natural compounds and apoptosis", Solstrand Hotel June 5-7, 2002.
- Ad Hoc reviewer: Blood, Expert opinion on Investigational Drugs, FEBS Letters, Protein Science, Experimental Cell Research, Molecular and Cellular Biochemistry.
- GuestEditor: *Proteomic Technologies in Translational medicine.* Curr Pharm Biotechnol. 2006.
- Leader of PhD committee: PhD Jian Wang UiB 2008, PhD Hege K.Jacobsen UiB 2011, PhD Nils Anders Leversen 2012. PhD committee trial lecture PhD Karin Berg UiB 2010.

Midterm Evaluation Committee for PhD-student Magnus Berle UiB (2012). Sensor: "særoppgave" for stud.med Caroline B.N. Engen UiB (2012).

- Member PROBE Local Scientific Advisory Board (LSAB) 2008-2009.
- Nature Reader Advisory Panel, 2008-2010.
- Prosjektgruppe UiB: Program for sikkerhetsstyring av kjemiske- og biologiske risikofaktorer, 2010-2011.
- Administrative work as Deputy Platform Leader PROBE (20%) includes courses and co-ordination, follow up projects collaborating with or purchasing services at PROBE and to implement proteomic methods and technology into research projects, 2006-2013-. Academic responsibility/teaching; histology (MED1ANA) at medical school at UiB, 2006-2013-

International collaborators:

- Prof. György Marko-Varga, Chromosome 19 Consortium coordinator, Lund University, Sweden. I have been member and contributor to Chromosome 19 Proteomics Consortium from 2011- http://www.chromosome19hpp.org/?cont=participants.
- Prof. Anna M. Aragay, Molecular Biology Institute of Barcelona (IBMB), Spain. SILAC-based quantitative proteomic approach on knock-out $G\alpha_{12/13}$ and $G\alpha_{q/G11}$ mice.

University Teaching Experience:

1999-2000	Head of laboratory courses in experimental biochemistry and chemistry (BIOBAS) at Medical school, University of Bergen. Master Examination:,PI3K-signalling.
1999-2000	Lectures in organic chemistry and biochemistry at medical school (100% teaching position), University of Bergen.
2010	Master Examination: Intracellular membrane trafficking.
2005-2013-	Lectures and laboratory courses in mass spectrometry analysis (LC-MSMS) and Quantitative Proteomics. Proteomics Unit at University of Bergen.
2006-2013-	Lectures and laboratory courses in Organ Anatomy/Histology (MED1ANA) at medical school at University of Bergen ("Academic responsibility" histology). Lectures in histology for students in Oral Sciences.
2012	Master Examination: Platelet Function and Pharmacological intervention.
2012	BMED320/BMED321 Methods in Medical Cell Biology for Master students.
2012	Lipid courses for pharm/med students (FARM150/BIOBAS.
2012-2013-	BMED905 /Biomedical Research Course: Proteomics (Academic responsibility).

Research Supervision Experience

Supervisor for 13 completed master theses (see research results for Frode Selheim in Cristin database for title and abstract of master theses), 1 Post Doc, 3 PhD students (2 present).

1998-2000	Main supervisor for cand. scient. candidate Randi Idsøe in biochemistry.

2000	Co-supervisor for cand. scient. candidate Ann K. Frøyset in biochemistry.
2004-2005	Co-supervisor for master candidate Hasjmemuzammal in biochemistry.
2004-2005	Co-supervisor for master candidate Hanne Hagland in cell biology.
2007-2008	Main supervisor for master candidate Maria Larsen in pharm/cell biology.
2007-2008	Main supervisor for master candidate Marie Aase in proteomics/cell biology.
2007-2008	Main supervisor for master candidate Even Birkeland in proteomics/cell biology.
2010-2011	Co-supervisor for master candidate Ingvild Bjørlykke in proteomics/cell biology.
2010-2011	Co-supervisor for master candidate Elise Åsebø in proteomics/cell biology.
2008	Main supervisor for Post Doctor Olav Mjaavatten in proteomics.
2011-2012	Co-supervisor for master candidate Astrid Gulbrandsen in proteomics/cell biology.
2011-2012	Co-supervisor for master candidate Heidrun Vethe in proteomics/cell biology.
2011-2012	Main supervisor for master candidate Anne C. Kleppe in pharm/cell biology.
2009-2013	Main supervisor for PhD candidate Gyrid Nygård in proteomics/cell biology. Dissertation completed 13 September 2013.
2012-	Co-supervisor for PhD candidate Jala Rohini.
2012-2013	Supervisor for Erasmus bachelor Student Arthur van der Burgh (Groningen, Nd).
2013-	Supervisor for PhD candidate Elise Aasebø in proteomics/AML

Miscellaneous

1993	**Pedagogy**, University of Bergen (30 ECTS credits).
1996	Category C Researcher in laboratory animal science.
1997	Guest Researcher for 1 month at the laboratory of prof. Carl-Henrik Heldin, Ludwig Institute for Cancer research, Uppsala.
2003	Course in applied proteomics, mass spectrometry, Geneva University Hospital.
2004	Q-Tof Ultima mass spectrometer Global operator Training course, Waters, Manchester, UK.
2013	Sabbatical stay (July-December 2013) at the Parc Scientific of Barcelona.

Publications

(1999-2012): 29 scientific publications with referee (+1 under review); First author **7**, senior author (last author) **9**, second author **5**. (25 (+2) in PubMed database).
15 peer-refereed scientific articles as the corresponding author.

Publications last 5 years (2008-2013)

1. Chekenya M, Krakstad C, Svendsen A, Netland IA, Staalesen V, Tysnes BB, **Selheim F**, Wang J et al. The progenitor cell marker NG2/MPG promotes chemoresistance by activation of integrin-dependent PI3K/Akt signaling. Oncogene. 2008 Sep 4;27(39):5182-94..
2. Oveland E, Gjertsen B.T, Wergeland L, **Selheim F**, Fladmark K.E, Hovland R. Ligand induced Flt3-downregulation modulates cell death associated proteins and enhances chemosensitivity to idarubicin in THP-1 acute myeloid leukemia cells. Leuk Res. 2009 Feb;33(2):276-87.

3. Birkeland E, Nygaard G, Oveland E, Mjaavatten O, Ljones M, Doskeland SO, Krakstad C and **Selheim F**. Epac-induced Alterations in the Proteome of Human SH-SY5Y Neuroblastoma Cells. J Proteomics Bioinform 2009: 244-254.
4. Oftedal L, **Selheim F**, Wahlsten M, Sivonen K, Døskeland S.O and Herfindal L. Marine Benthic Cyanobacteria Contain Apoptosis-Inducing Activity Synergizing with Daunorubicin to Kill Leukemia Cells, but not Cardiomyocytes. Mar. Drugs 2010, Oct 14;8(10):2659-72.
5. Jokela J, Herfindal L, Wahlsten M, Permi P, **Selheim F**, Vasconçelos V, Døskeland SO, Sivonen K. Chembiochem. A novel cyanobacterial nostocyclopeptide is a potent antitoxin against microcystins. Chembiochem. 2010 Jul 26;11(11):1594-9.
6. Kleppe R, Krakstad C, **Selheim F**, Kopperud R, and Døskeland S.O. The cAMP-Dependent Protein Kinase Pathway as Therapeutic Target – Possibilities and Pitfalls. Current Topics in Medicinal Chemistry 2011 Mar 29: 1393-1405..
7. Jensen, B.O, Kleppe R, Kopperud R, Nygard G, Døskeland S.O, Holmsen H and **Selheim F**. Dipyramidole synergizes with nitric oxide to prolong inhibition of thrombin-induced platelet shape change in a PKG-independent manner. Platelets 2011;22(1):7-18.
8. Herfindal L, Myhren L, Kleppe R, Krakstad C, **Selheim F**, Jokela J, Sivonen K, and Døskeland S.O. Nostocyclopeptide-M1: a potent, nontoxic inhibitor of the hepatocyte drug transporters OATP1B3 and OATP1B1. Mol Pharm. 2011 Apr 4;8(2):360-7.
9. Mjaavatten O, Nygaard G, Berven F and **Selheim F**. Minimization of side reactions during Lys Tag derivatization of C-terminal lysine peptides. Anal Chim Acta. 2012 Jan 27;712:101-7.
10. Nilsson C, Berven F, **Selheim F**, Andren PE, Carlsohn E, Depriva S, Wang X, Fuentes M, Végvári Á, Welinder C, Laurell T, Fehninger TE, Lindberg H, Rezeli M, Edula G and György Marko-Varga. Chromosome 19 Annotations with Disease Speciation – A First Report from the Global Research Consortium. J Proteome Res. 2013 Jan 4;12(1):135-50.
11. Myhren LE, Nygaard G, Gausdal G, Teigen K, Sletta H, Bruserud Ø, Døskeland SO, **Selheim F,** Herfindal L. Iodinin (1,6-dihydroxyphenazine 5,10 dioxide) is a potent antileukemic compound with high selectivity towards cell lines and patient cells from the myeloid lineage. Mar. Drugs. 2013 Jan 30; 11(2):332-49.
12. Herfindal L, Nygaard G, Kopperud R, Krakstad C, Døskeland SO, **Selheim F.** Off-target effect of the Epac agonist 8-pCPT-2'-O-Me-cAMP on P2Y12 receptors in blood platelets. Biochem Biophys Res Commun. 2013 Aug 9;437(4):603-8. doi: 10.1016/j.bbrc.2013.07.007.
13. Elise Aasebø, Marc Vaudel, Olav Mjaavatten, Gro Gausdal, Arthur Van der Burgh, BjørnTore Gjertsen, Stein Ove Døskeland, Øystein Bruserud, Frode Berven, **Frode Selheim.** Super-SILAC based quantitative proteomics for comparison of different acute myeloid leukemia cell lines (invited article). PROTEOMICS 2014 Feb.
14. Gyrid Nygaard, Reidun Kopperud, Eystein Oveland, Frode S. Berven, Lene Myhren, Marit Bakke, Erling A. Hoivik, Stein Ove Døskeland, Lars Herfindal, and **Frode Selheim**. Epac1-deficient mice exhibit impaired platelet GPIbβ expression and hemostasis. Blood 2013 (under review).

Publikasjonsliste og publikasjoner

The articles numbered 2, 3, 4, 7, 9, 10, 13, 19, 21, 25, 26, 27, 28, 29 and 30 (supplemental: peptides/protein list and statistic not included for attached printed version for 29 and 30) in the publication list below are attached to this application.

Publications (1999-2012)
(1999-2012): 29 scientific publications with referee (+1 under review); First author **7**, senior author (last author) **9**, second author **5**. (25 (+2) in PubMed database).
15 peer-refereed scientific articles as the corresponding author.

1. **Selheim F**; Holmsen, H., and Vassbotn, F.S. Platelet-derived growth factor inhibits platelet activation in heparinized whole blood. Thromb.Res 1999;95:185-196.
2. **Selheim F**, Idsøe R, Fukami MH, Holmsen H., Vassbotn FS. Formation of PI 3-kinase products in platelets by thrombin, but not collagen, is dependent on synergistic autocrine stimulation, through secreted ADP. Biochem. Biophys. Res. Commun. 1999;263:780-785.
3. **Selheim F**, Holmsen H, Vassbotn FS H. PI 3-kinase signalling in platelets; the significance of synergistic, autocrine stimulation. Platelets 2000;11:6-19.
4. **Selheim F**, Fukami MH, Holmsen H, Vassbotn FS. Platelet-derived growth factor-induced signalling in human platelets; PI 3-kinase dependent inhibition of platelet activation. Biochem. J 2000; 350:469-475.
5. Tharmapathy P, **Selheim F**, Ødegaard K, Lund A, Holmsen H. Venlafaxine treatment stimulates blood platelet activity. J Clin. Psychopharm. 2000;20:589-590.
6. **Selheim F**, Frøyset AK, Vassbotn FS, Holmsen H. Adrenaline potentiates PI 3-kinase in platelets stimulated with thrombin and SFRLLN: Role of secreted ADP. FEBS Lett. 2000;485:62-66.
7. **Selheim F**, Holmsen H, Vassbotn FS. Identification of functional VEGF receptors on human platelets. FEBS Lett. 2002;512:107-110.
8. Kopperud R, Krakstad C, **Selheim F**, Doskeland SO. Novel twists for an 'old' signaling system. FEBS Lett. 2003 Jul 3;546(1):121-6.
9. Christensen AE, **Selheim F**, de Rooij J, Schwede F, Dao K, Martinez A, Bos JL, Genieser HG, Doskeland SO. cAMP analog mapping of EPAC-1 and cAMP-kinase. Discriminating analogs demonstrate that EPAC and cAMP-kinase act synergistically to promote PC12 cell neurite extension. J Biol Chem. 2003 Sep 12;278(37):35394-402.
10. Jensen, B.O., **Selheim, F.**,Døskeland, S.O., Gear, A.R. and H. Holmsen (2004). Protein Kinase A Mediates Inhibition of the Thrombin-induced Platelet Shape Change by Nitric Oxide. Blood. 2004 Nov 1;104(9):2775-82.
11. H. Hagland, **F. Selheim**, T.J. Keen, Kaja Skjærven, C. Krakstad, A-E. Christensen,L. Herfindal, F. Schwede, H-G. Genieser and S.O. Døskeland. The cAMP Receptors Epac and PKA synergize to induce PC12 cell neuritogenesis and to protect against apoptosis. Second Messengers and Phosphoproteins 2005, 123-128. Research Book chapter: *ISBN:*978-88-7587-113 0
12. Herfindal L, Oftedal L, **Selheim F**, Wahlsten M, Sivonen K, Doskeland SO.. A high proportion of Baltic Sea benthic cyanobacterial Isolates contain apoptogens able to induce rapid death of isolated rat hepatocytes . Toxicon 2005 Sep 1;46(3):252-60.
13. **Selheim F**, Herfindal L, Martins R, Vasconcelos V, Døskeland SO. Neuro-apoptogenic and blood platelet targeting toxins in benthic marine cyanobacteria from the Portuguese coast. Aquat Toxicol. 2005 Sep 30;74(4):294-306.

14. Herfindal L and **Selheim F**. Microcystin produces disparate effects on liver cells in a dose dependent manner. Mini Rev Med Chem. 2006 Mar;6(3):279-85.
15. Kleppe R, Kjarland E and **Selheim F**. Proteomic and computational methods in systems modeling of cellular signaling. Curr Pharm Biotechnol. 2006 Jun;7(3):135-45.
16. **Selheim F**. Proteomic Technologies in Translational medicine. Curr Pharm Biotechnol. 2006 Jun;7(3): (Editorial) 133.
17. Chekenya M, Krakstad C, Svendsen A, Netland IA, Staalesen V, Tysnes BB, **Selheim F**, Wang J et al. The progenitor cell marker NG2/MPG promotes chemoresistance by activation of integrin-dependent PI3K/Akt signaling. Oncogene. 2008 Sep 4;27(39):5182-94..
18. Oveland E, Gjertsen B.T, Wergeland L, **Selheim F**, Fladmark K.E, Hovland R. Ligand induced Flt3-downregulation modulates cell death associated proteins and enhances chemosensitivity to idarubicin in THP-1 acute myeloid leukemia cells._Leuk Res. 2009 Feb;33(2):276-87.
19. Birkeland E, Nygaard G, Oveland E, Mjaavatten O, Ljones M, Doskeland SO, Krakstad C and **Selheim F**. Epac-induced Alterations in the Proteome of Human SH-SY5Y Neuroblastoma Cells. J Proteomics Bioinform 2009: 244-254.
20. Oftedal L, **Selheim F**, Wahlsten M, Sivonen K, Døskeland S.O and Herfindal L. Marine Benthic Cyanobacteria Contain Apoptosis-Inducing Activity Synergizing with Daunorubicin to Kill Leukemia Cells, but not Cardiomyocytes. Mar. Drugs 2010, Oct 14;8(10):2659-72.
21. Jokela J, Herfindal L, Wahlsten M, Permi P, **Selheim F**, Vasconçelos V, Døskeland SO, Sivonen K. Chembiochem. A novel cyanobacterial nostocyclopeptide is a potent antitoxin against microcystins. Chembiochem. 2010 Jul 26;11(11):1594-9.
22. Kleppe R, Krakstad C, **Selheim F**, Kopperud R, and Døskeland S.O. The cAMP-Dependent Protein Kinase Pathway as Therapeutic Target – Possibilities and Pitfalls. Current Topics in Medicinal Chemistry 2011 Mar 29: 1393-1405..
23. Jensen, B.O, Kleppe R, Kopperud R, Nygard G, Døskeland S.O, Holmsen H and **Selheim F**. Dipyramidole synergizes with nitric oxide to prolong inhibition of thrombin-induced platelet shape change in a PKG-independent manner. Platelets 2011;22(1):7-18.
24. Herfindal L, Myhren L, Kleppe R, Krakstad C, **Selheim F**, Jokela J, Sivonen K, and Døskeland S.O. Nostocyclopeptide-M1: a potent, nontoxic inhibitor of the hepatocyte drug transporters OATP1B3 and OATP1B1. Mol Pharm. 2011 Apr 4;8(2):360-7.
25. Mjaavatten O, Nygaard G, Berven F and **Selheim F**. Minimization of side reactions during Lys Tag derivatization of C-terminal lysine peptides. Anal Chim Acta. 2012 Jan 27;712:101-7.
26. Nilsson C, Berven F, **Selheim F**, Andren PE, Carlsohn E, Depriva S, Wang X, Fuentes M, Végvári Á, Welinder C, Laurell T, Fehninger TE, Lindberg H, Rezeli M, Edula G and György Marko-Varga. Chromosome 19 Annotations with Disease Speciation – A First Report from the Global Research Consortium. J Proteome Res. 2013 Jan 4;12(1):135-50.
27. Myhren LE, Nygaard G, Gausdal G, Teigen K, Sletta H, Bruserud Ø, Døskeland SO, **Selheim F,** Herfindal L. Iodinin (1,6-dihydroxyphenazine 5,10 dioxide) is a potent antileukemic compound with high selectivity towards cell lines and patient cells from the myeloid lineage. Mar. Drugs. 2013 Jan 30; 11(2):332-49.
28. Herfindal L, Nygaard G, Kopperud R, Krakstad C, Døskeland SO, Selheim F. Off-target effect of the Epac agonist 8-pCPT-2'-O-Me-cAMP on P2Y12 receptors in blood platelets. Biochem Biophys Res Commun. 2013 Aug 9;437(4):603-8. doi:10.1016/j.bbrc.2013.07.007.
29. Elise Aasebø, Marc Vaudel, Olav Mjaavatten, Gro Gausdal, Arthur Van der Burgh, BjørnTore Gjertsen, Stein Ove Døskeland, Øystein Bruserud, Frode Berven, **Frode**

Selheim. Super-SILAC based quantitative proteomics for comparison of different acute myeloid leukemia cell lines (invited article). PROTEOMICS 2014 Feb.

30. Gyrid Nygaard, Reidun Kopperud, Eystein Oveland, Frode S. Berven, Lene Myhren, Marit Bakke, Erling A. Hoivik, Stein Ove Døskeland, Lars Herfindal, and **Frode Selheim**. Epac1-deficient mice exhibit impaired platelet GPIbβ expression and hemostasis. Blood 2013 (under review).

Other publication:

31. Fladmark K.E. and **Selheim F**. PROBE – nasjonal platform for proteomikk. NBS – nytt 3/2006: 32-35.

Selected Papers in Conference Proceedings (CP), Presentation (P) and Abstracts (A)

(CP) Selheim F, Herfindal L, Knutsen G, Holmsen H, Doskeland SO. Alterations in platelet phospholipid metabolism by substances from a marine microalgae. Chemistry and physics of Lipids 2001;110:139-140.

(CP) Selheim F; Vassbotn F; Holmsen H. Effect of platelet derived growth factor on platelets, an example of autocrine inhibition . PLATELETS Volume: 7 Issue: 5-6 1996: 360-361

(CP) Herfindal L, Jokela, J, Oftedal L, **Selheim F**, Wahlsten M, Kleppe R, Sivonen K, and Doskeland SO. Novel bioactive compounds in benthic cyanobacteria from the Baltic Sea. EUROPEAN JOURNAL OF PHARMACEUTICAL SCIENCES 2006 (28): 26-

(P) Selheim Frode. Proteomikk nettverket. Hvordan er det organisert og hva kan vi tilby. FUGE BOARD/FUGE Meeting SOLA STRAND HOTEL 2. JUNI 2009.

(P) Selheim Frode. Proteomic-plattformen - PROBE. FELLES FAGDAG BIO – BIOMEDISIN, 18. FEBRUAR 2009.

(P) Selheim Frode. Stand: FUGE/Innovasjon Norge sin næringslivskonferanse 24. – 25. september 2007.

(P) Selheim Frode. Faculty Lunch, Plans, visions, organization, service, use and further competence build-up and developement of the PROBE, 2007.

(A) C. L. Nilsson, F. Berven, **F. Selheim**, H. Liu, J. R. Moskal, R. A. Kroes, E. Sulman, C. A. Conrad, F. F. Lang, P. E. Andrén, M. Shariatgorji, E. Carlsohn, D. Subramaniyam, X. Wang, M. Gonzales-Gonzales, N. Dasilva, P. Diez, M. Fuentes, Á. Végvári, K. Sjödin, C. Welinder, T. Laurell, T. E. Fehniger, H. Lindberg, M. Rezeli, G. Edula, S. Hober, G. Marko-Varga. The Chromosome 19 Consortium Pipelines, Assays and Database Build Up. HUPO Congress, Bosten 2012.

(A) G. Nygaard and **F. Selheim.** Epac1 activation induces cell cycle arrest in the human neuroblastoma cell line SH-SY5Y. HUPO Congress, Geneva 2011.

(A) Mjaavatten, Olav; Nygård, Gyrid; **Selheim, Frode.**
Peptide Side-Products of Lys Tag Derivatization reaction. HUPO Congress, Sydney 2010.

OVERSENDELSE AV SØKNAD OM PERSONLIG OPPRYKK TIL PROFESSOR ETTER KOMPETANSE VED UiB

Jfr forskrift om ansettelse og opprykk i undervisnings- og forskerstillinger

Søknadsfrist: Søknad må være mottatt på fakultetet 15. september

Opplysninger om søker (fylles ut av søker selv):

Søkers etternavn:	Fornavn:	Fødselsdato:
Tronstad	Karl Johan	17.11.1973
Søkers stilling:		
Førsteamanuensis 100%		
Søkers høyeste utdanning/grad/institusjon:		
Dr.philos/Universitetet i Bergen		
Søkers spesialitet m. h. t. fordypning:		
Biokjemi og molekylærbiologi		

	Ja	Nei
Har søker p.t. til vurdering søknad på utlyst professorstilling?		✓

Hvis ja, oppgi hvilke(n) institusjon(er):

	Ja	Nei
Har søker sendt inn søknad om opprykk til professor eller vært vurdert for professorkompetanse i løpet av de siste to år før søknadsfristen?		✓

Hvis ja, oppgi institusjon(er) og fagområde(r):

Oppgi søknadsfrist(er):

15.09.2013 (For denne søknad)

Fylles ut av instituttet:

Institutt: Institutt for biomedisin
Kontaktinformasjon ved instituttet: Kontaktperson, postadresse, tlf nr og e-postadresse: Rolf K. Reed, Postboks 7804, 5020 Bergen, 55586389 rolf.reed@biomed.uib.no
Søkers fagområde iflg tilsetting: Medisin, Biokjemi og molekylærbiologi
Når ble det evt sist utlyst professorstilling ved UiB innen søkers fagområde/spesialitet? Mer enn 5 år siden

ERKLÆRING FRA BEDØMMELSESKOMITEEN

	Sett kryss her
Komiteen avgir enstemmig kompetanse-erklæring Søker bedømt kompetent for opprykk	☐

Annet utfall av bedømmingen – Søker er ikke er erklært kompetent for opprykk	☐

_____
Sted og dato

_____
Underskrift

Vedlegg til søknadsskjemaet:
1. søknad
2. cv
3. publikasjonsliste og publikasjoner, jfr retningslinjene:
   http://www.lovdata.no/for/sf/kd/kd-20060209-0129.html

Karl Johan Tronstad
Institutt for Biomedisin,
Universitetet i Bergen

Privatadresse: Åslia 77, 5115 Ulset

Til:
Det Medisinsk-Odontologiske Fakultet (MOFA)
Universitetet i Bergen (UiB)

Bergen, 13.09.2013

Søknad om opprykk etter kompetanse

Jeg er førsteamanuensis ved Institutt for Biomedisin og tillater meg med dette å be om en vurdering av min kompetanse mhp opprykk til professor.

Nedenfor har jeg forsøkt å gi en kortfattet oversikt over mine aktiviteter og kvalifikasjoner.

1. Vitenskapelig kompetanse

Jeg har så langt veiledet 9 masterstudenter og 5 doktorgradsstudenter til fullført grad (se vedlagt CV). Mitt forfatterskap omfatter 22 forskningsartikler og 7 oversiktsartikler, alle i internasjonale tidsskrift med fagfellevurdering (se publikasjonsliste). Dette inkluderer 7 første- og 3 sisteforfatterskap. Den siste artikkelen vi fikk akseptert (nr 22) var et resultat av et tett samarbeid med gruppen i Nijmegen, hvor både jeg og Koopman hadde seniorroller, og hvor vi plasserte oss som hhv første og sisteforfatter. Det kan også nevnes at jeg er sisteforfatter på 4 manuskripter som har vært vitenskapelig evaluert og godkjent som deler av doktorgradsavhandlinger. Status for disse manuskriptene er beskrevet i publikasjonslisten, og de ettersendes mer enn gjerne dersom komiteen ønsker det.

Vi har deltatt med ca 23 postere og 25 muntlige presentasjoner på ulike nasjonale og internasjonale konferanser. Jeg har vært med i organiseringen av 5 internasjonale møter. Jeg har også vært invitert til å gi forelesninger ved ulike anledninger nasjonalt og internasjonalt.

Jeg har initiert og ledet forskningsprosjekter siden 2005, og jeg er prosjektleder på et flerårig prosjekt vi nylig fikk bevilget fra Norsk Forskningsråd og UiB ("Fellesløftet", 214187/F20). Dette prosjektet inkluderer en postdoc som er under ansettelse.

Jeg har etablert kontakt og samarbeid med forskere nasjonalt og internasjonalt. Dette fremgår av det samarbeid som inngår i de realiserte forskningsprosjekter (se beskrivelse i vedlagt CV). Utover dette har et større nettverk av partnere vært involvert i en rekke prosjektsøknader hvor jeg har hatt både ansvarlige og deltakende roller, men som dessverre ikke har fått støtte. Dette omfatter både søknader til nasjonale programmer og EU-søknader.

Jeg har invitert, og vært vertskap for, flere internasjonalt anerkjente forskere som har besøkt vårt institutt for å diskutere samarbeid og delta med gjesteforelesninger. Jeg har også selv besøkt noen av disse.

2. Pedagogiske kvalifikasjoner

Som doktorgradsstudent og postdoc ved Institutt for indremedisin UiB gav jeg forelesninger innenfor tema som lipidforstyrrelser, oksidativt stress og mitokondriell fysiologi i kurs for medisinstudenter og masterstudenter. Jeg deltok også i planlegging og organisering av kurs, samt veiledning av master- og PhD-studenter.

Etter at jeg startet som førsteamanuensis ved Institutt for biomedisin gjennomførte jeg "Utviklingsprogram i Universitetspedagogikk" ved UiB, og har også deltatt i seminar om forskningsveileding. Min hovedundervisning har vært i "Biomedisinsk Basalblokk" (BIOBAS) som gis til førsteårsstudenter i medisin, odontologi og ernæring (200-250 studenter). Det inneholder 30 stp innen tema som kjemi, biokjemi, molekylærbiologi, cellebiologi, fysiologi. Jeg overtok undervisningen i generell kjemi, og gjennomførte en rekke tilpasninger gjennom flere år får å gjøre struktur og innhold mer tjenlig. Gjennom et samarbeid med Pearson forlag hadde jeg ansvar for å sette sammen en spesiallaget pensumbok, med utdrag fra 3 ulike originale lærebøker i kjemi. I tillegg til kjemien gir jeg forelesninger i tema som oksidativ fosforylering og biokjemisk termodynamikk.

Jeg ble tidlig med i en gruppe ledet av daværende BIOBAS ansvarlig Prof. Anni Vedeler som iverksatte tiltak for å optimalisere innholdet og organiseringen av kurset. BIOBAS er et stort og komplisert emne mhp studentmasse, innhold, organisering, og bemanning, og det har vært et behov for dynamiske tilpasninger. Undervisningen består av forelesninger, kollokviegrupper, laboratoriekurs og histologikurs. I 2009 gikk jeg inn som leder for BIOBAS. Sammen med instituttet kartla vi arbeidsfordelingen for gjennomføring av kurset, og vi laget en ny undervisningsplan som har en mer kronologisk oppbygget emnerekkefølge. Videre har jeg vært medlem i eksamenskomiteen for emnet siden 2005.

Jeg har gitt forelesninger innen biokjemi, molekylærbiologi og cellebiologi i ulike kurs på instituttet vårt (HUCEL361, HUCEL368, FARM260, BMED381, BMED381. Se CV for emnetitler). De siste årene har jeg deltatt i planlegging og gjennomføring av et emne om kritisk lesning av faglitteratur (MED1BIOMED) med forelesninger, plenumsdiskusjon og nettbaserte innleveringer. I 2011 var jeg en av initiativtakerne til BMED381 som organiseres sammen med NIFES. Jeg fortsatt internansvarlig for dette kurset.

I tillegg til å ha deltatt i eksamensarbeid og vurdering av eksamensbesvarelser i de kursene jeg har vært involvert i, har jeg utført sensoroppgaver i emnet BMED325. Jeg var også bisitter (internsensor) på mastereksamener en periode (2005-2009).

I 2007 organiserte jeg et internasjonalt kurs med tittelen "Mitochondria, novel biomedical aspects" rettet mot master- og doktorgradsstudenter, samt andre interesserte. Der deltok anerkjente internasjonale og nasjonale forskere som forelesere (http://www.mitophysiology.org/fileadmin/user_upload/OROBOROS_News/MitoCourseBergen_Nov-).

3. Formidlingsvirksomhet

Jeg har hatt gleden av å være vertskap for mange skoleklasser som har vært på besøk på instituttet vårt. Jeg har da gitt populærvitenskapelig forelesninger av typen "Cellenes indre liv" hvor jeg forteller om spennende forskningsområder innen cellebiologi. De siste årene har jeg i samarbeid med min kollega førsteamanuensis Knut Teigen gitt populærvitenskapelige forelesninger med tema "Nano-mikro-makroskopiske blikk på cellen i kroppen" ved en rekke anledninger, deriblant for klassegrupper, lærergrupper og Fagpedagogisk dag ved UiB.

Jeg var også med å organisere «Bli-med-på-jobben-dag» på instituttet vårt (http://nyheter.uib.no/?modus=vis_nyhet&id=51625), hvor barna fikk prøve seg som forskere. Ved to anledninger har jeg gitt intervjuer i media (se vedlagt CV).

4. Administrative kvalifikasjoner

Jeg har deltatt i utvalg og styrer på ulike nivå ved UiB, fra institutt- til fakultet- og universitetsnivå (se vedlagt CV). Dette har omfattet administrasjon av både forskning og undervisning, forskningsressurser, samt ansettelser og kartlegging/forvaltning av utstyr.

Jeg har administrert en forskningsgruppe som består av 6-8 personer, og som utgjør en gren av CellNET gruppen. Vi har etter hvert etablert metabolisme som en viktig del av CellNETs aktivitet og kompetanse. For min del har dette arbeidet blant annet omfattet budsjett/finansiering, ansettelser, personalansvar, infrastruktur, forskningsstrategi, veiledning og studie-relaterte aktiviteter.

I 2011 var jeg blant de utvalgte til å delta på MOFA sitt "Program for Yngre Forskningsledere" som ble gjennomført 2011/2012 (kursbevis/beskrivelse vedlagt i CV)

Jeg har vært leder i 10 doktorgradskomiteer, og vært opponent for en kandidat. Jeg har opptrådt som custos i 4 disputaser.

Siden 2011 har jeg vært med i prosessen med å planlegge studiesamarbeid med Makerere Faculty of Biomedical Sciences i Kampala, Uganda. Dette innebar en reise til Kampala og samarbeidet inngår i en NORHED søknad som ligger inne til behandling.

Jeg gikk nylig inn i Programutvalget for Medisinsk Biologi ved MOFA. Der har jeg ansvar for arbeidet med å etablere et bachelor-program innen biomedisin. Dette arbeidet er nå i startfasen. Jeg er også involvert i prosessen med å etablere en felles nordisk mastergrad sammen med Universitetene i Turku og København, og Karolinska Institutet. Videre er tanken at jeg skal overta som leder av programutvalget i neste periode.

Med dette håper jeg at denne søknaden, og den vedlagte dokumentasjonen, gir et tilfredsstillende bedømmingsgrunnlag for komiteen. Dere er velkomne til å ta kontakt dersom ytterligere opplysninger eller dokumentasjon er ønsket. Jeg ser frem til å høre Deres beslutning.

På forhånd hjertelig takk for Deres bedømmelse av denne søknaden.

Med vennlig hilsen

Karl J. Tronstad

Karl Johan Tronstad

Department of Biomedicine,
University of Bergen,
Jonas Lies vei 91, N-5009 Bergen
Norway

Phone +47 55586433
E-mail karl.tronstad@biomed.uib.no

CURRICULUM VITAE

Karl Johan Tronstad

Born 17.11.1973 in Stavanger, Norway
Married to Elin B. Tronstad
Three children: Julie (4/11-02), June (4/7-00), and Karl Jonas (20/4-98).

EDUCATION:

2002	*Dr.philos.*, Dept. of Clinical Biochemistry, University of Bergen (UiB), 04.10.2002. Thesis: "Effects of the modified fatty acid tetradecylthioacetic acid (TTA) on cancer cell proliferation and induction of cell death". Supervisor: Prof. Rolf K. Berge
1997	*Cand.scient.,* Dept. of Molecular Biology and Dept. of Clinical Biochemistry, UiB. Thesis: "Proliferation of malignant rat glioma cells is reduced by the sulphur substituted fatty acid analogue tetradecylthioacetic acid; a study on oxidative status." Supervisor: Prof. Rolf K. Berge.
1995	*Cand.mag.* UiB.
1992	*Examen artium*, Strand Videregående Skole, 4021 Tau.

PROFESSIONAL EMPLOYMENT:

01.09.2005 – Associate Professor in biochemistry and molecular biology, Dept. of Biomedicine, UiB.
01.01.2005 – 31.08.2005 Postdoctoral position, Institute of Medicine, UiB. Haukeland Univ. Hosp. (HUS),
01.11.2002 – 31.12.2004 Postdoctoral position, Institute of Medicine, UiB, HUS.
01.09.1997 – 31.10.2002 Research fellow, Dept. of Clinical Biochemistry, UiB, HUS, Bergen.

SUPPLEMENTARY COURSES/SEMINARS:

2012	"Young research leader" program, Faculty of Dentistry and Medicine, UiB.
2011	"Seminar in research supervision for ph.d.-supervisors", UiB, 28.09.2011
2011	"Seminar in research ethics", Solstrand Hotel, Os (Bergen), UiB, 7-9.09.2011
2006	"University pedagogic", UiB.
2001	"Building up writing skills in english, level 1" (14 hrs), Bjørknes Kompetanse/UiB.
1999	"Kurs i strålevern" (20 hours, with exam), UiB.
1998	"Research in animals" (B-1344, 24 hours), UiB.
1998	"Cellulær signaloverføring" (Cellular signal transduction, B-1369, 27 hours), UiB.

TEACHING:

2011 -	Lecturer BMED330 (Cell communication and intracellular signaling)
2011 -	Teaching/co-organizing BMED381 (Biomedical nutritional physiology), co-initiator
2011 -	Sensor BMED325 (Cellular biochemistry and nano biochemistry)
2011 - 2012	Lecturer FARM260 (Molecular cell biology)
2010 -	Teaching/co-organizing MED1BIOMED (Biomedical Topics)
2010 -	Supervisor, student project internships BMED320 (Methods in medical cell biology)
2009 - 2013	Course leader BIOBAS (Biomedical Basalblock), incl course reorganization
2008	Lecturer, HUCEL368 (Organ biochemistry), Topics: Oxidative stress, mitochondria
2006 - 2010	Exam committee (leader): BIOBAS (Biomedical Basalblock)
2005 -	Teaching (lectures & practical exercises) BIOBAS (Biomedical Basalblock)
2004 - 2005	Lecturer/ Co-organizer, HUCEL361 master course ("Biokjemisk forandring ved sykdom").
2003 - 2005	Lecturer in medical biochemistry for medical students, UiB. Topics: Oxidative stress, lipid metabolism/disorders, mitochondria, etc.
1996 - 2005	Participation in education, training and supervision of students/fellows at the Institute of Medicine (former Institute of Clinical Biochemistry), UiB

SUPERVISION:

MD student project, "Særoppgave"

2006-	5 students completed

MD - PhD program, "Forskerlinjen"

2013 -	Fredrik Hoel. Main supervisor. (2013-2020)
2003 - 2012	Bjarte S. Erikstein. Co-supervisor (main: Bjørn Tore Gjertsen). PhD 27.04.2012

Master students (MSc programme):

2013-	Beate Hole Fosse (Pharmacy). Co-supervisor with Anni Vedeler
2013-	Carine Lindquist (Human Cell Biology). Co-supervisor with Bodil Bjørndal
2012-	Adeleh Parnakardabili (Human Cell Biology). Co-supervisor with Anni Vedeler.
2012-2013	Sissel Elisabeth Dyrstad (Human Cell Biology). Main supervisor.
2011-2012	Dina Manandhar (Human Cell Biology). Main supervisor.
2011-2012	Ina Katrine Nitschke Pettersen (Human Cell Biology). Main supervisor.
2010-2011	Bina Ahmed (Pharmacy). Main supervisor.
2009-2010	Anne Mari Tveit (Biological chemistry, University of Stavanger). Co-supervisor
2008-2009	Gisle Størseth Solhaug (Pharmacy). Main supervisor.
2008-2009	Ingunn Bergslien (Pharmacy). Main supervisor.
2006-2008	Åshild Marie Lien (Human Cell Biology). Co-supervisor (main: Anne K. Jonassen)
2005-2007	Julie Nikolaisen (Human Cell Biology). Main supervisor.
1996-2005	Participated in education, training and supervision of students/fellows in the "Lipid research group" (Prof Rolf K. Berge), Institute of Medicine, UiB

PhD fellows:

2013 -	Ina Nitschke Pettersen (UiB). Main supervisor
2009 - 2013	Monica Hellesøy (UiB). Co-supervisor (main supervisor: James B Lorens). PhD 28.05.2013
2008 - 2013	Linn Iren Hodneland Nilsson (UiB). Main supervisor. PhD 08.02.2013
2008 - 2012	Julie Nikolaisen (UiB). Main supervisor. PhD 20.12 2012
2006 - 2012	Hanne Røland Hagland (UiB). Main supervisor. PhD 31.08.2012
2003 - 2012	Bjarte S. Erikstein (UiB). Co-supervisor (main: Bjørn Tore Gjertsen). MD - PhD program (forskerlinjen). PhD 27.04.2012

BOARDS

2013 -	The Department Board ("Instituttrådet"), Dept. Biomedicine (elected member 2013-2017)
2013 -	Study Programme Board, Medical Biology, Faculty of Medicine and Dentistry, UiB
2009 - 2012	Exam- and education board, Dept. Biomedicine, UiB (Eksamens- og Underv.utvalget)
2009 - 2013	Study Programme Board in Nutrition, Faculty of Medicine and Dentistry, UiB
2009 - 2013	The Department Board ("Instituttrådet"), Dept. Biomedicine (deputy board member)
2007-2008	The Tjomsland legacy, UiB, deputy board member
2006 -	The Department Scientific Board, Dept. Biomedicine (deputy board member)
2006 - 2007	The University Board of First Semester Studies (Rådet for førstesemesterstudier), UiB
2005	The election board (election of dean), Faculty of Medicine, UiB
2004 - 2005	The Faculty Scientific Board (forskningsutvalget), Faculty of Medicine, UiB
2004 - 2005	The Faculty Board, Faculty of Medicine, UiB
2003 - 2004	The Section Board, Section of Medical Biochemistry, Institute of Medicine, UiB.
2002 - 2003	The Department Board, Department of Clinical Biochemistry, UiB.

COMMITTEES

2011-2012	Molecular and Computational Biology Research School contact person
2010-	Several Committees of employment, Dept. Biomedicine, UiB
2006	The instrumentation evaluation committee, Dept. Biomedicine.
2006-2008	The AV-steering group, UiB, faculty representative
2005-2009	Master exam assessor (internal sensor), Dept. Biomedicine.
2003-2005	The committee of chemical safety at the Institute of Medicine, UiB.
2003-2004	The committee of social arrangements, Laboratory for Clinical Biochemistry, Haukeland University Hospital.

DOCTORAL THESIS AND DEFENCE EVALUATION COMMITTEE

2012	Åge Skjevik, Dept. Biomedicine, UiB	- Leader of committee
2011	Tor-Christian Aase Johannessen, Dept. Biomedicine, UiB	- Leader of committee
2011	Pia Osenbroch, University of Oslo	- 2nd opponent
2010	Geir Helgeland, Dept. Clinical Medicine	- Leader of committee
2009	Linda Aumo, Dept. Biomedicine, UiB	- Leader of committee
2009	Lasse Evensen, Dept. Biomedicine, UiB	- Leader of committee
2009	Tormod Bjørkkjær, Dept. Biomedicine, UiB	- Leader of committee
2008	Eystein Oveland, Dept. Biomedicine, UiB	- Leader of committee
2007	Line Wergeland, Dept. Biomedicine, UiB	- Leader of committee
2006	Lars Herfindal, Dept. Biomedicine, UiB	- Leader of committee
2006	Peter Huszthy, Dept. Biomedicine, UiB	- Leader of committee
2005	Reidun Kopperud, Dept. Biomedicine, UiB	- Trial lecture evaluation

CUSTOS (DEPUTY DEAN) AT PUBLIC DOCTORAL DEFENCE

2012 Anita Røyneberg Alvheim, Dept. Biomedicine, UiB
2011 Lars Skjærven, Dept. Biomedicine, UiB
2010 Grete Dagestad, Dept. Biomedicine, UiB
2009 Dorotha Goplen, Dept. Biomedicine, UiB

ORGANIZING & SCIENTIFIC COMMITTEES AT SYMPOSIA/CONFERENCES

2012 Bioblast International Scientific Committee, Bioblast Conference 10-12.12.2012, Innsbruck, Austria.
2010 Co-organizer of SCANDOMIT 2010 (Meeting for a Scandinavian network of researchers in mitochondrial physiology), Solstrand, Bergen. (20-22.01.2010)
2008 Co-organizer of MitoHealth Workshop "Mitochondrial function and metabolic diseases" Dept. Biomedicine, UiB (03-05.12.2008)
2007 Leader/organizer of "Mitochondria, novel biomedical aspects". International PhD course, Research School in Molecular and Computational Biology, UiB (04-09.11.2007)
2001 Co-organizer (organizing and scientific committee), "42nd International Conference on the Bioscience of Lipids (ICBL)" Bergen (05-09.06.2001).

JOURNAL REFEREE/EDITORIAL BOARDS

Mitochondrion, Journal of Pharmacy and Pharmacology, AJP Cell Physiology, Expert Opinion on Drug Safety (EODS), The International Journal of Biochemistry & Cell Biology, Journal of Molecular Medicine, The Open Cancer Journal, Biochim. Biophys. Acta, Trends in Molecular Medicine

OTHER PROFESSIONAL ACTIVITIES:

2005 Co-referee for research project applications to "Nordisk cancer union".

SCIENTIFIC PRIZES/AWARDS:

2012 Selected to attend the "Young research leader" program, Faculty of Medicine and Dentistry, UiB
2007 Finalist of the Bergen Research Foundation Recruitment Program
2005 The Meltzer young investigator award, 2004, UiB

INVITED LECTURES AND CONFERENCE CONTRIBUTIONS (see enclosed list for details):

2012 Invited speaker at the Mitochondrial Bioblast Conference, Innsbruck, 10-13.12.2012
2011 Lecture at School of Health Sciences, Kampala, Uganda, 9-17.10.2011.
2011 Lecture at Gades Institute, Bergen, 26.08.2010.
2010 Lecture at Dept. Clinical Medicine, Bergen, 13.05.2011.
2010 Lecture at Nijmegen Centre of Molecular Life Sciences, Dr. Werner Koopman, 07.07.2010.
2008 Invited speaker (2 lectures) at "Mitohealth Workshop", Bergen, 08-09.11.2008.
2006 Invited speaker at BBB-seminars, Department of Biomedicine, UiB, 02.02.2006.
2005 Invited speaker at "Nugo" symposium (EU network), Oslo, 17-20, 2005.
2005 Invited speaker at "Mitochondrial Function: Basic Mechanisms and Clinical Aspects." Research seminar (forskerkurs), CMBN, Rikshospitalet, Oslo, 14-15.04.2005.
2004 Lecture/seminar at University College London, Prof. Michael Duchen 12.11.2004.
2003 Invited speaker at "Fett og kreft - hva vet vi?", Trondheim 04.06.2003.
1996- Participation at national and international conferences. Over 40 contributions (oral presentation or poster) at international conferences and meetings.

PUBLIC:

2012 Organizing committee "Bli med på jobben dag". Staff's children's day, scient. content, 10.09.2012.
2009 - "Fagpedagogisk dag" (School teacher's conference, 2009, 2010). Popular scientific lectures
2008 - Popular scientific lectures for school classes, school teacher groups, and for new students at Dept. Biomedicine. Bioengineer seminar in Bergen (Teknisk Forum, 10.05.2012)
2004 Interview on radio. NRK P2 "Verdt å vite" broadcasted 20.04.2004. Subject: fatty acids and cancer
2002 Interview article: "Modifiserte fettsyrer – ny kreftbehandling?", in *Legemidler og Samfunn* 2/2002

Research activities and funding: K.J. Tronstad, Sept 2013

Brief summary of research activities

I have been member or the CellNET research group headed by Prof. Jim Lorens (Dept. Biomedicine, UiB) since 2005, where I established research on cell metabolism and mitochondrial function. Since then 9 Masters's students and 5 PhD fellows have graduated under my supervision.

Our major research aim is to understand physiological mechanisms of metabolic stress in disease, and how they can be targeted to treat patients. This topic involves a plethora of pathways integrating cell signaling and metabolism with physiological functions. In our research, we are particularly concerned about the importance of mitochondria as crucial sensors and effectors of cellular stress reactions, since this involves both life-giving and life-taking processes in the cell.

Cancer metabolism has been our major field of interest for many years, and our enthusiasm in this field is still escalating. We have received several small and medium sized grants to study the mechanisms involved. So far, two PhD students have completed their projects on this topic. In 2012, we received a 4-year grant from the Norwegian Research Council and UiB, to study metabolic flexibility in breast cancer.

Our studies on mitochondria involve advanced microscopy, and we have developed techniques to quantify new morphological parameters. These methods will now be employed to study mitochondrial physiology in the other ongoing projects.

One branch of our research concerns mitochondrial dynamics and regulation during in vitro angiogenesis, and endothelial stress mechanisms associated with these organelles. These interesting studies have included one completed PhD project.

In order to investigate specific mechanisms of metabolic stress, we have recently started studies in cells with compromised mitochondrial function, including cells from patients.

Project funding (PI: Tronstad)

Cancer metabolism: Metabolic flexibility and mitochondrial function in cancer cells

Project period:	2006 – running
Research funding:	NOK 1.5 mill for running costs an equipment 2 PhD positions, (2006-2011, 2008-2012, UiB)
Sources of funding:	UiB/Biomed/Meltzer/DNK/NFR/Agnes Sars Legat/Oddrunn Mjålands Legat.
Participants:	Lorens, Døskeland, Berge, Gjertsen, Bruserud (UiB); W. Koopman (the Netherlands); K Singh (NY, USA)

Cancer metabolism: A study on metabolic inflexibility as a possible weakness in mammary tumours (214187/F20)

Project period:	2012 – 2016
Research funding:	NOK 6.4 mill in total 1 posdoc position included
Sources of funding:	Norwegian Research Council/UiB
Participants:	Lorens, Mellgren, Bindoff (UiB); Metabolon (USA)

Multi-parameter analysis of mitochondria (method development)

Project period:	2008 – 2013
Research funding:	NOK 0.5 mill in total
Sources of funding:	UiB/Biomed/Tjomslands Legat/NFR/Bergen Med Res Foundation
Participants:	MIC-facility/UiB, W. Koopman (the Netherlands), Lorens (Biomed)

Mitochondrial dynamics during angiogenesis, and endothelial cell stress

Project period:	2008 – 2013
Research funding:	NOK 0.4 mill for running costs 1 PhD position (2008-2012, UiB)
Sources of funding:	UiB/Biomed/Nasjonalforeningen
Participants:	W. Koopman (the Netherlands), Lorens (Biomed)

Metabolic stress in cells with mitochondrial dysfunction

Project period:	2012 – running
Research funding:	1 PhD position (2012-2016, UiB)
Sources of funding:	UiB
Participants:	Bindoff (UiB)

Collaborators through the years

- Prof James B. Lorens, Department of Biomedicine, UiB
- Prof Rolf Bjerkvig, Department of Biomedicine, UiB
- Prof Hrvoje Miletic, Department of Biomedicine, UiB
- Prof Frits Thorsen, Department of Biomedicine, UiB
- Prof Stein O. Døskeland, Department of Biomedicine, UiB
- Assoc Prof Anne Jonassen, Department of Biomedicine, UiB
- Prof Linda B Stuhr, Department of Biomedicine, UiB

- Prof Bjørn Tore Gjertsen, Department of Clinical Science (K2), UiB, and Section of Hematology, Haukeland University Hospital.
- Prof Øystein Bruserud Department of Clinical Science (K2), UiB, and Section of Hematology, Haukeland University Hospital.
- Prof Rolf K. Berge, Department of Clinical Science (K2), UiB
- Prof Laurence Bindoff, Department of Clinical Medicine (K1), UiB, and Department of Neurology, Haukeland University Hospital.
- Prof Mathias Ziegler, Department of Molecular Biology, UiB

- Dr. Werner J. Koopman, Nijmegen Centre for Molecular Life Sciences, Radboud University, Nijmegen
- Prof Keshav Singh, Department of Cancer Genetics, Roswell Park Cancer Institute, Buffalo, USA.
- Prof Richard C. Scarpulla, Northwestern University Medical School, Chicago, USA
- Prof Karsten Kristiansen, København Universitet, Danmark
- Prof Eric Gnaiger, Innsbruck Universitet, Østerike
- Prof Michael Duchen, University College, London
- John Ryals, President & CEO, Metabolon Inc, Durham, NC, USA
- Prof Christian A. Drevon, Ernæringsinstituttet, University of Oslo
- Prof Per Ole Iversen, Oslo University Hospital
- Assoc Prof Brynjar Foss, Department of Health Studies, University of Stavanger

I have participated in the EU-projects LIPGEN (2004-2009, EU FP6-FOOD) and NUGO (2004- , EU FP6-FOOD). I have also applied EURYI (European Young Investigator Awards, 2004), and contributed in planing and writing of the proposed (but not granted) projects INNFLAMMATUM (EU FP7, 2007, Prof. Guy Haegeman, Gent, Belgia), MITOFLEX (as work package leader; EU FP7, 2007, Prof. Dr. Ellen Blaak, Maastricht University) and MITOSCORE (COST network, 2011, Prof. Eric Gnaiger, Innsbruck, Østerike).

Invited lectures

- Karl Johan Tronstad, Sept 2013

1. *"Modifiserte fettsyrer - ny kreftbehandling?"*, Workshop: *Fett og kreft - hva vet vi?* Dr. S.Schonberg, Trondheim, Norway, 04.06.2003.
2. *"Apoptosis induced by a mitochondrial-targeted modified fatty acid "* Visit: Prof. M. Duchen, University College London, 12.11.2004.
3. *"Mitochondria and cell proliferation"*. Workshop: *Mitochondrial Function: Basic Mechanisms and Clinical Aspects. Research seminar (forskerkurs)*. Dr. L.Eide, Rikshospitalet, Oslo, Norway, 14-15.04.2005.
4. *"Respirometry, monitoring mitochondrial function"*. Workshop: *Nugo symposium (EU network)*. Prof. C.A. Drevon, Oslo, Norway, 17-20.04.2005
5. *"Mitochondria and cell proliferation"*, in *BBB seminar series*. Department of Biomedicine, University of Bergen, 02.02.2006.
6. *"The dynamic control of mitochondrial function"*. in *Mitohealth Workshop*. Prof R.K. Berge, Bergen, Norway, 08-09.11.2008.
7. *"Respirometry, monitoring mitochondrial function"*. in *Mitohealth Workshop*. Prof R.K. Berge, Bergen, Norway, 08-09.11.2008.
8. *"Metabolic flexibility and mitochondrial function in cancer cell models"*. Visit: Dr W.J. Koopman, Nijmegen Centre of Molecular Life Sciences, The Netherlands, 07.07.2010.
9. *"Metabolisme og mitokondriefunksjon i kreftcellemodeller"*. Visit: Prof Molven, Gades Institute, Bergen, 26.08.2010.
10. *"Mitochondrial function and energy failure in leukemia cells"*. Visit: Prof Bindoff, Dept Clinical Medicine, Bergen, 13.05.2011.
11. *"Novel biomedical aspects of metabolic stress and mitochondrial function"*. Visit: Prof Charles Ibingira, Makerere Faculty of Biomedical Sciences, School of Health Sciences, Kampala, Uganda, 9-17.10.2011.
12. *"Mitochondrial morphology and biogenesis in cellular stress"*. Prof E. Gnaiger, Medical University of Innsbruck, Austria, 10-13.12.2012.

Conferences - Karl Johan Tronstad, Sept 2013

Participation without presentation

Oxidative Stress and Redox Regulation: Cellular Signaling, Aids, Cancer and Other Diseases. Institut Pasteur, Paris. Mars 21-24,1996.

3rd Winter Research Conferences. Protein and free radicals, from radical enzymes to damages. Les Arcs, Frankrike. Mars 9-14,1997.

Apoptosis 2003. European Conference Center, Kirchberg, Luxembourg. January 29-February 1, 2003.

1ère Confèrence de l'Institut Paul Hamel. "New developments in the Metabolic Syndrome". Principality of Monaco. June 7-8, 2004.

The First Bergen Symposium on Innovation and Commercialisation in BioSciences. Bergen. June 3-4, 2004.

55th Meeting of Nobel Prize Winners. Lindau, Germany. June 26 - July 1, 2005.

Keystone Symposia; Metabolomics: From bioenergtetics to apoptosis. Snowbird, Utah, USA. April 2-7, 2006.

Ebec2008, 15th European bioenergetics conference Trinitiy College Dublin. July 19-24, 2008.

Targeting Mitochondria; Strategies, Innovations & Clinical Applications. Berlin, Germany. November 8-9, 2012.

Posters and Oral Presentations

1 K. Berge, K.J. Tronstad, F. Abdi-Dezfuli, R. R., R. Mahesparan, R. Bjerkvig and R. K. Berge. Poster: "Proliferation of cancer cells is inhibited by poorly oxidizable fatty acids". 51st Annual Symposium on Fundamental Cancer Research. Molecular Targets for Cancer Therapy and Prevention. Houston, Texas. October 27-30, 1998.

2 K. Berge, K.J. Tronstad, F. Abdi-Dezfuli, T. Ranheim, R. Mahesparan, R. Bjerkvig and R. K. Berge. Poster and oral presentation (presented by Berge, K): "Poorly oxidizable fatty acid analogues inhibit the proliferation of cancer cells in culture". 4th Fatty Acid Oxidation & Ketogenesis Conference. Institute of Child Health, London, GB. April 3-6, 1998.

3 K. Berge, K.J. Tronstad, F. Abdi-Dezfuli, T. Ranheim, R. Mahesparan, R. Bjerkvig and R. K. Berge. Poster (presented by Berge, K): "Effect of poorly oxidizable fatty acids on proliferation of cancer cells". 3rd Congress of The International Society For The Study of Fatty Acids and Lipids, ISSFAL1998. Lyon, France. June 1-5, 1998.

4 K.J. Tronstad, K. Berge, F. Abdi-Dezfuli, T. Ranheim, R. Bjerkvig and R. K. Berge. Poster (presented by Berge, K): "Metabolic effects of 3-thia acid in cancer cells". 3rd Congress of The International Society For The Study of Fatty Acids and Lipids, ISSFAL1998. Lyon, France. June 1-5, 1998.

5 K.J. Tronstad, K. Berge, R. Bjerkvig, T. Flatmark and R. K. Berge. Poster and oral presentation: "Metabolic effects of 3-thia fatty acids in cancer cells". 4th Fatty Acid Oxidation & Ketogenesis Conference. Institute of Child Health, London, GB. April 3-6, 1998.

6 K.J. Tronstad, K. Berge, R. Bjerkvig, T. Flatmark and R. K. Berge. Poster: "Metabolic effects of 3-thia fatty acid in cancer cells". 51st Annual Symposium on Fundamental Cancer Research. Molecular Targets for Cancer Therapy and Prevention. Houston, Texas. October 27-30, 1998.

7 K. Berge, K.J. Tronstad, R. Ranheim, R. Mahesparan, R. Bjerkvig and R. K. Berge. Poster and oral presentation (by Berge, K): "A poorly oxidizable fatty acid analogue, TTA, inhibit the proliferation of cancer cells". Fatty Acids and Cancer. Öland, Sweden. May 27-28, 1999.

8 K.J. Tronstad, K. Berge and R. K. Berge. Poster and oral presentation: "3-Thia fatty acids influence the growth potential and metabolism in cancer cells". Fatty Acids and Cancer. Öland, Sweden. May 27-28, 1999.

9 K. Berge, K.J. Tronstad, E. N. Flint, J. T. Rasmussen, R. Bjerkvig, L. Madsen, K. Kristiansen and R. K. Berge. Poster (presented by Berge, K): "Tetradecylthioacetic acid (TTA) activates peroxisome proliferator activated receptors (PPAR) and reduces rat glioma cell proliferation". 4th Congress of The International Society For The Study of Fatty Acids and Lipids, ISSFAL2000. Tsukuba, Japan. June 4-9, 2000.

10 K.J. Tronstad, K. Berge, E. Dyroy, L. Madsen and R. K. Berge. Poster: "Tetradecylthioacetic acid inhibits growth and modulates fatty acid oxidation and oxidative status in glioma cells". 4th Congress of The International Society For The Study of Fatty Acids and Lipids, ISSFAL2000. Tsukuba, Japan. June 4-9, 2000.

11 K. Berge, P. Bohov, K.J. Tronstad, L. Madsen and R. K. Berge. Poster (presented by Berge, K): "Tetradecylthioacetic acid (TTA) modifies phospholipid metabolism and triggers apoptosis in glioma cells". 42nd international conference on the bioscience of lipids (ICBL). Bergen, Norway. June 5-9, 2001.

12 K. Berge, K.J. Tronstad, E. N. Flindt, T. H. Rasmussen, L. Madsen, K. Kristiansen and R. K. Berge. Oral presentation (by Berge, K): "Tetradecylthioacetic acid inhibits growth of rat glioma cells ex vivo and in vitro via PPAR-dependent and PPAR-independent pathways". PPARs: From basic science to clinical applications. Florence, Italy. April 4-7, 2001.

13 L. Madsen, E. Dyrøy, H. Wergedahl, K. Berge, K.J. Tronstad and R. K. Berge. Oral presentation (by Madsen, L): "Activation of PPAR-alpha is not sufficient to reduce plasma triacyglycerols". PPARs: From basic science to clinical applications. Florence, Italy. April 4-7, 2001.

14 K.J. Tronstad, K. Berge, E. Dyroy, L. Madsen and R. K. Berge. Oral presentation: "PPAR-activating 3-thia fatty acid influences the growth potential and metabolism in glioma cells". PPARs: From basic science to clinical applications. Florence, Italy. April 4-7, 2001.

15 K.J. Tronstad, B. T. Gjertsen, K. Berge, O. T. Brustugun, S. O. Doskeland and R. K. Berge. Organizer. Oral presentation: "3-Thia fatty acid induces mitochondrial alterations and triggers apoptosis in cancer cells". 42nd international conference on the bioscience of lipids (ICBL). Bergen, Norway. June 5-9, 2001.

16 K.J. Tronstad, B. T. Gjertsen, C. Krakstad, K. Berge, O. T. Brustugun, S. O. Doskeland and R. K. Berge. Oral presentation: "Anticancer properties of a modified fatty acid". BCCR, 4th Bergen Conference on Cancer Research. Solstrand Hotel, Osøyro, Norway. May 9-10, 2003.

17 K.J. Tronstad, H. J. Grav, O. A. Gudbrandsen, K. Berge, K. E. Fladmark, T. C. Martinsen, H. Wergedahl and R. K. Berge. Poster: "Mitochondrial alterations in liver associated with hypolipidemic effects of a modified fatty acid (tetradecylthioacetic acid, TTA). Evidence for PPARalfa independent induction of UCP-2 expression.". FEBS Advanced Study Institute: "From

Transcription to Physiology: Regulation of Gene Expression and Protein Function in an Integrated Context.". Spetses, Greece. September 8-14, 2003.

18 T. H. Røst, O. A. Gudbrandsen, K.J. Tronstad, G. Mellgren and R. K. Berge. Poster: "PPARd activation in relation to reduction of adipose tissue" Received poster award. 45th International Conference on the Bioscience of Lipids (ICBL). Ioannina, Greece. May 25-29, 2004.

19 K.J. Tronstad. Oral presentation: "Mitochondrial-targeted modified fatty acid induces apoptosis with selective loss of mitochondrial glutathione in leukaemia cells". Scandomit 2004. Solstrand Hotel, Osøyro, Norway. February 20-22, 2004.

20 K.J. Tronstad. Oral presentation: "Mitochondrial-targeted modified fatty acid induces apoptosis with selective loss of mitochondrial glutathione in leukaemia cells". International Course and Workshop on High-Resolution Respirometry. Schroecken, Austria. April 14-18, 2004.

21 K.J. Tronstad, B. T. Gjertsen, C. Krakstad, K. Berge, S. O. Doskeland, O. Bruserud and R. K. Berge. Poster: Apoptosis induced by a mitochondrial-targeted modified fatty acid. Mitochondria and Cancer. Beatson Institute for Cancer Research, Glasgow, Scotland. Oktober 1-3, 2004.

22 K.J. Tronstad, O. A. Gudbrandsen, K. Berge, H. Wergedahl and R. K. Berge. Oral Presentation: The importance of mitochondria and PPARalfa target genes for improved insulin sensitivity (presented by K. Berge). PPARs 2005: 3rd International symposium on PPARs, efficacy and safety. From basic science to clinical applications. Monte Carlo, Monaco; Auditorium Rainier III and Monte Carlo Grand Hotel. March 19-23, 2005.

23 K.J. Tronstad, O. A. Gudbrandsen, K. Berge, H. Wergedahl and R. K. Berge. Poster presentation: Mitochondrial alterations during apoptosis induced by a thia fatty acid in leukemia cells. 4th Conference on Mitochondrial Physiology - MiP2005. The Many Faces and Functions of an Organelle. Schröcken, Vorarlberg, Austria. September 16-20, 2005.

24 K.J. Tronstad, O. A. Gudbrandsen, K. Berge, H. Wergedahl and R. K. Berge. Oral Presentation: Dissipating excess energy in the liver is a potential treatment strategy for the metabolic syndrome. 46th international conference on the bioscience of lipids (ICBL). Ajaccio, Corsica. September 20-24, 2005.

25 J. Nikolaisen, H. Hagland and K.J. Tronstad. Poster: Mitochondrial function and tumor growth control. SIXTH ESH - UT MD ANDERSON CANCER CENTER INTERNATIONAL EUROCONFERENCE ON "Mechanisms of cell death and disease: Advances in therapeutic intervention and drug development". Cascais, Portugal. October 13-16, 2006.

26 H. Hagland, J. Nikolaisen and K.J. Tronstad. Oral presentation: "Mitochondrial function and tumour growth Control". MiP2007, "Mitochondrial Physiology". Ambleside, England. September 14-18, 2007.

27 H. R. Hagland, J. Nikolaisen, L. H. Nilsson, S. O. Døskeland, R. K. Berge and K.J. Tronstad. Oral presentation: "Effects of mitochondrial manipulation in tumor cells". Normit 08 (National meeting on mtiochondria). Glesvær, Bergen, Norway. November 5-7, 2008.

28 J. Nikolaisen, L. H. Nilsson, H. R. Hagland, J. B. Lorens and K.J. Tronstad. Oral presentation: "Mitochondrial structure-function relation during angiogenesis". Normit 08 (National meeting on mtiochondria). Glesvær, Bergen, Norway. November 5-7, 2008.

29 L. H. Nilsson, J. Nikolaisen, H. R. Hagland, J. B. Lorens and K.J. Tronstad. Oral presentation: "Regulation of mitochondrial biogenesis". Normit 08 (National meeting on mtiochondria). Glesvær, Bergen, Norway. November 5-7, 2008.

30 I. Moen, A. M. Øyan, K. H. Kalland, K.J. Tronstad, L. A. Akslen, M. Chekenya, P. Ø. Sakariassen, R. K. Reed and L. E. B. Stuhr. Poster: "Hyperoxic Treatment induces Mesenchymal-to-Epithelial Transition in a Rat Adenocarcinoma Model". Fifth International Conference on Tumor Microenvironment: Progression, Therapy & Prevention. Versailles, France. October 20-24, 2009

31 H. Hagland, J. Nikolaisen, L. H. Nilsson and K.J. Tronstad. Oral Presentation (KJT): "Metabolism and Mitochondrial function in cancer cell models". Bergen Conference on Cancer Research. Loen, Stryn, Norway. May 10-12, 2010.

32 H. R. Hagland, J. Nikolaisen, L. H. Nilsson and K.J. Tronstad. Oral presentation: "Metabolic adaptations in tumour cells". Scandomit 2010. Solstrand, Bergen. January 20-22, 2010.

33 H. R. Hagland, J. Nikolaisen, L. I. H. Nilsson and K.J. Tronstad. Poster: "Metabolic adaptation in tumor cell lines". 2010 Keystone Symposium: "Metabolism and cancer progression". Vancouver, Canada. March 12-17, 2010.

34 J. Nikolaisen, L. H. Nilsson, H. R. Hagland, J. B. Lorens and K.J. Tronstad. Oral presentation: "Mitochondrial organisation in endothelial cells during angiogenesis". Scandomit 2010. Solstrand, Bergen. January 20-22, 2010.

35 J. Nikolaisen, L. I. H. Nilsson, H. R. Hagland, J. B. Lorens, W. J. Koopman and K.J. Tronstad. Poster: "Mitochondria and angiogenesis". 2010 Keystone Symposium: "Metabolism and cancer progression". Vancouver, Canada. March 12-17, 2010.

36 L. H. Nilsson, H. R. Hagland, J. Nikolaisen and K.J. Tronstad. Poster: "Mitochondrial biogenesis as a regulator in cell bioenergetics". Scandomit 2010. Solstrand, Bergen. January 20-22, 2010.

37 L. I. H. Nilsson, J. Nikolaisen, H. R. Hagland and K.J. Tronstad. Poster: "Mitochondrial biogenesis as a regulator in cell bioenergetics". 2010 Keystone Symposium: "Metabolism and cancer progression". Vancouver, Canada. March 12-17, 2010.

38 J. Nikolaisen, L. H. Nilsson, H. Hagland, W. J. Koopman and K.J. Tronstad. Invited lecture (KJT): Mitochondrial morphology and biogenesis in cellular stress. Bioblast Conference. Innsbruck; Austria. December 10-13, 2012.

39 K.J. Tronstad. Oral Presentation (KJT): Modulation of mitochondrial energy metabolism leads to respiratory dysfunction and metabolic stress via cell specific pathways in leukemia cells. O2k-Fluorometry and High-resolution Resppirometry Workshop, IOC66. Mitochondrial Physiology Network. . Innsbruvk, Austria. March 15-16, 2012.

40 J. Nikolaisen, L. H. Nilsson, H. Hagland, W. J. Koopman and K.J. Tronstad. Oral Presentation (KJT): Mitochondrial function, biogenesis and morphology in cellular stress. Biology of Aging (Zing Conferences). Lanzarote. February 13-16, 2013.

41 J. Nikolaisen, L. H. Nilsson, H. Hagland, W. J. Koopman and K.J. Tronstad. Oral Presentation (KJT): Mitochondrial function, biogenesis and morphology in cellular stress. NBS Contact Meeting. Lillehammer, Norway. January 31 - February 3, 2013.

UNIVERSITETET I BERGEN

Det psykologiske fakultet

VITNEMÅL

Det bekreftes at

KARL JOHAN TRONSTAD

har gjennomgått

Utviklingsprogram i Universitetspedagogikk

i tidsrommet

2005 - 2006

Programmet dekker kravet om pedagogisk basiskompetanse
for tilsatte i faste vitenskapelige stillinger
ved Universitetet i Bergen

Bergen 7/12 - 2006

Programansvarlig

Fakultetsdirektør

UNIVERSITETET I BERGEN

Det psykologiske fakultet/Institutt for utdanning og helse

KURSBEVIS

FOR GODKJENT KURS I

UNIVERSITETSPEDAGOGIKK

er tildelt

Karl Johan Tronstad

for deltakelse på kurset i

Basismodul i universitetspedagogikk

Kurset ble avholdt i høstsemesteret 2005 og vårsemesteret 2006,
og godkjennes med 10 ECTS.

Godkjenning (kursleders underskrift)

14.06.2006

UNIVERSITETET I BERGEN

Det psykologiske fakultet/Institutt for utdanning og helse

KURSBEVIS

FOR GODKJENT KURS I
UNIVERSITETSPEDAGOGIKK

er tildelt

Karl Johan Tronstad

for deltakelse på kurset i

Forskningsveiledning på Ma og Ph.d-nivå

Kurset ble avholdt i vårsemesteret 2006, og godkjennes med 5 ECTS.

Godkjenning 28.08.2006 Aly Lina Sæmundsen

UNIVERSITETET I BERGEN
Institutt for utdanning og helse

KURSBEVIS

FOR GODKJENT KURS I
UNIVERSITETSPEDAGOGIKK

er tildelt

Karl Johan Tronstad

for deltakelse på kurset i

Muntlig formidling

Kurset ble avholdt i vårsemesteret 2006, og godkjennes med 5 ECTS.

07.12.2006

Ivar Nordmo, kursleder

Deltakerbevis

Karl Johan Tronstad

Har deltatt på

"Seminar i forsknings-veiledning for ph.d.-veiledere"

Kurset besto av forelesninger og gruppearbeid

Bergen, onsdag 28.september i 2011

Kristian Sommerfelt
sign
kurskomiteens leder

Robert Bjerknes
sign
prodekan

Det medisinsk-odontologiske fakultet

Kursbevis

Karl Johan Tronstad, IBM

Program for Yngre Forskingsleiarar, YFL

Fem samlingar

Mentorstøtte og erfaringsutveksling

Leiarutvikling

Rekruttering og intervjuteknikk

Ekstern finansiering

Etikk i forskinga

Personalleiing

Leiing og kommunikasjon

Reise til Brussel, inkludert besøk til Forskingsrådet sitt Brusselkontor, Europakommisjonen, Det Norske Hus, EFTA-sekretariatet og Europaparlamentet

Bergen, 22.06.12

Nina Langeland

Dekan

Stig Morten Frøiland

Underdirektør

Publications - Karl Johan Tronstad, Sept 2013

* **Selected papers**. Printed copies are enclosed (numbered according to this list).

Original research articles in peer reviewed journals

1. Berge, R.K., L. Madsen, H. Vaagenes, K.J. Tronstad, M. Gottlicher, and A.C. Rustan. In contrast with docosahexaenoic acid, eicosapentaenoic acid and hypolipidaemic derivatives decrease hepatic synthesis and secretion of triacylglycerol by decreased diacylglycerol acyltransferase activity and stimulation of fatty acid oxidation. Biochem J, 1999. 343 Pt 1: p. 191-7.

***2.** Berge, K#., K.J. Tronstad#, E.N. Flindt#, T.H. Rasmussen, L. Madsen, K. Kristiansen, and R.K. Berge, (*equal contribution). Tetradecylthioacetic acid inhibits growth of rat glioma cells ex vivo and in vivo via PPAR-dependent and PPAR-independent pathways. Carcinogenesis, 2001. 22(11): p. 1747-55.

***3.** Tronstad, K.J., K. Berge, E. Dyroy, L. Madsen, and R.K. Berge. Growth reduction in glioma cells after treatment with tetradecylthioacetic acid: changes in fatty acid metabolism and oxidative status. Biochem Pharmacol, 2001. 61(6): p. 639-49.

***4.** Tronstad, K.J., K. Berge, E.N. Flindt, K. Kristiansen, and R.K. Berge. Optimization of methods and treatment conditions for studying effects of fatty acids on cell growth. Lipids, 2001. 36(3): p. 305-13.

***5.** Glosli, H., K.J. Tronstad, H. Wergedal, F. Muller, A. Svardal, P. Aukrust, R.K. Berge, and H. Prydz. Human TNF-alpha in transgenic mice induces differential changes in redox status and glutathione-regulating enzymes. FASEB J, 2002. 16(11): p. 1450-2.

6. Madsen, L., M. Guerre-Millo, E.N. Flindt, K. Berge, K.J. Tronstad, E. Bergene, E. Sebokova, A.C. Rustan, J. Jensen, S. Mandrup, K. Kristiansen, I. Klimes, B. Staels, and R.K. Berge. Tetradecylthioacetic acid prevents high fat diet induced adiposity and insulin resistance. J Lipid Res, 2002. 43(5): p. 742-50.

***7.** Tronstad, K.J., O. Bruserud, K. Berge, and R.K. Berge. Antiproliferative effects of a non-beta-oxidizable fatty acid, tetradecylthioacetic acid, in native human acute myelogenous leukemia blast cultures. Leukemia, 2002. 16(11): p. 2292-301.

8. Berge, K., K.J. Tronstad, P. Bohov, L. Madsen, and R.K. Berge. Impact of mitochondrial beta-oxidation in fatty acid-mediated inhibition of glioma cell proliferation. J Lipid Res, 2003. 44(1): p. 118-27.

***9.** Grav, H.J., K.J. Tronstad, O.A. Gudbrandsen, K. Berge, K.E. Fladmark, T.C. Martinsen, H. Waldum, H. Wergedahl, and R.K. Berge. Changed energy state and increased mitochondrial beta-oxidation rate in liver of rats associated with lowered proton electrochemical potential and stimulated uncoupling protein 2 (UCP-2) expression: evidence for peroxisome proliferator-activated receptor-alpha independent induction of UCP-2 expression. J Biol Chem, 2003. 278(33): p. 30525-33.

***10.** Tronstad, K.J., B.T. Gjertsen, C. Krakstad, K. Berge, O.T. Brustugun, S.O. Doskeland, and R.K. Berge. Mitochondrial-targeted fatty acid analog induces apoptosis with selective loss of mitochondrial glutathione in promyelocytic leukemia cells. Chem Biol, 2003. 10(7): p. 609-18.

11. Bruserud, O., K.J. Tronstad, and R. Berge. In vitro culture of human osteosarcoma cell lines: a comparison of functional characteristics for cell lines cultured in medium without and with fetal calf serum. J Cancer Res Clin Oncol, 2005. 131(6): p. 377-84.

12. Ferno, J., M.B. Raeder, A.O. Vik-Mo, S. Skrede, M. Glambek, K.J. Tronstad, H. Breilid, R. Lovlie, R.K. Berge, C. Stansberg, and V.M. Steen. Antipsychotic drugs activate SREBP-regulated expression of lipid biosynthetic genes in cultured human glioma cells: a novel mechanism of action? Pharmacogenomics J, 2005. 5(5): p. 298-304.

***13.** Iversen, P.O., D.R. Sorensen, K.J. Tronstad, O.A. Gudbrandsen, A.C. Rustan, R.K. Berge, and C.A. Drevon. A bioactively modified fatty acid improves survival and impairs metastasis in preclinical models of acute leukemia. Clin Cancer Res, 2006. 12(11 Pt 1): p. 3525-31.

14. Wergedahl, H., K. Berge, P. Bohov, K.J. Tronstad, L. Madsen, and R.K. Berge. Long term treatment with tetradecylthioacetic acid improves the antioxidant status in obese Zucker (fa/fa) rats. Drug Metab Lett, 2008. 2(2): p. 138-45.

15. Bredholt, T., E.A. Dimba, H.R. Hagland, L. Wergeland, J. Skavland, K.O. Fossan, K.J. Tronstad, A.C. Johannessen, O.K. Vintermyr, and B.T. Gjertsen. Camptothecin and khat (Catha edulis Forsk.) induced distinct cell death phenotypes involving modulation of c-FLIPL, Mcl-1, procaspase-8 and mitochondrial function in acute myeloid leukemia cell lines. Mol Cancer, 2009. 8: p. 101.

***16.** Moen, I., A.M. Oyan, K.H. Kalland, K.J. Tronstad, L.A. Akslen, M. Chekenya, P.O. Sakariassen, R.K. Reed, and L.E. Stuhr. Hyperoxic treatment induces mesenchymal-to-epithelial transition in a rat adenocarcinoma model. PLoS One, 2009. 4(7): p. e6381.

17. Moen, I., K.J. Tronstad, O. Kolmannskog, G.S. Salvesen, R.K. Reed, and L.E. Stuhr. Hyperoxia increases the uptake of 5-fluorouracil in mammary tumors independently of changes in interstitial fluid pressure and tumor stroma. BMC Cancer, 2009. 9: p. 446.

***18.** Erikstein, B.S., H.R. Hagland, J. Nikolaisen, M. Kulawiec, K.K. Singh, B.T. Gjertsen, and K.J. Tronstad. Cellular stress induced by resazurin leads to autophagy and cell death via production of reactive oxygen species and mitochondrial impairment. J Cell Biochem, 2010. 111(3): p. 574-84.

19. Erikstein, B.S., E. McCormack, K.J. Tronstad, F. Schwede, R. Berge, and B.T. Gjertsen. Protein kinase A activators and the pan-PPAR agonist tetradecylthioacetic acid elicit synergistic anti-leukaemic effects in AML through CREB. Leuk Res, 2010. 34(1): p. 77-84.

***20.** Svendsen, A., J.J. Verhoeff, H. Immervoll, J.C. Brogger, J. Kmiecik, A. Poli, I.A. Netland, L. Prestegarden, J. Planaguma, A. Torsvik, A.B. Kjersem, P.O. Sakariassen, J.I. Heggdal, W.R. Van Furth, R. Bjerkvig, M. Lund-Johansen, P.O. Enger, J. Felsberg, N.H. Brons, K.J. Tronstad, A. Waha, and M. Chekenya. Expression of the progenitor marker NG2/CSPG4 predicts poor survival and resistance to ionising radiation in glioblastoma. Acta Neuropathol, 2011. 122(4): p. 495-510.

***21.** Hagland, H.R., L.I. Nilsson, L. Burri, J. Nikolaisen, R.K. Berge, and K.J. Tronstad. Induction of mitochondrial biogenesis and respiration is associated with mTOR regulation in hepatocytes of rats treated with the pan-PPAR activator tetradecylthioacetic acid (TTA). Biochem Biophys Res Commun, 2013. 430(2): p. 573-8.

***22.** Tronstad, K.J., M. Nooteboom, L.I.H. Nilsson, J. Nikolaisen, M. Sokolewicz, S. Grefte, I.K.N. Pettersen, S. Dyrstad, F. Hoel, P.H.G.M. Willems, and W.J.H. Koopman. Regulation and quantification of cellular mitochondrial morphology and content (Combined review/original research article). Current Pharmaceutical Design, In Press.

COMMENT: This article was written jointly between the two groups (Nijmegen and Bergen), and contains both a review section and original data. The groups contributed equally, with Koopman and Tronstad as senior authors.

Original research manuscripts refereed as part of PhD dissertations

COMMENT: These manuscripts describe important parts of our recent work. Printed copies will gladly be provided on request.

The results of these studies have also been communicated and discussed (posters and oral presentations) at several international conferences and workshops (as provided in the "Conferences" and "Invited lecture" lists).

23. Hagland, H.R., J. Nikolaisen, L.I.H. Nilsson, I.K.N. Pettersen, M. Omsland, I. Strand, R. Myklebust, B.T. Gjertsen, Ø. Bruserud, J.B. Lorens, S.O. Døskeland, and K.J. Tronstad. Modulation of mitochondrial energy metabolism leads to respiratory dysfunction and metabolic stress via cell specific pathways in leukemia cells. Manuscript, PhD.

    STATUS: This comprehensive study is finished. The manuscript will be revised to emphasize the main message before submission. Planned submission is November 2013.

24. Nikolaisen, J., L.I. Nilsson, L. Evensen, J.B. Lorens, and K.J. Tronstad. Mitochondrial modulation during endothelial tube formation in an in vitro model of angiogenesis. Manuscript, PhD.

    STATUS: The study is finished. The manuscript is to be optimized for submission. Planned submission is January 2014.

25. Nilsson, L.I., J. Nikolaisen, I.K.N. Pettersen, D. Micklem, J.B. Lorens, and K.J. Tronstad. A study on the reversible induction of mitochondrial biogenesis via AMPK/NRF-1 in living cells. Manuscript, PhD.

    STATUS: The study has been extended to explain more aspects of the mechanisms involved. The final measurements are currently performed. The manuscript is planned to be submitted January 2014.

26. Nikolaisen, J., L.I. Nilsson, W.J.H. Koopman, and K.J. Tronstad. Image analysis of mitochondrial shape and network properties in 2 and 3 dimensions. Manuscript, PhD 2012.

    STATUS: This study has been extended to include a thorough comparative analysis of HUVEC cells with normal (filamentous) versus stressed (spherical) mitochondria. The analyses are finished, demonstrating several interesting new features concerning mitochondrial shape and network properties. The new manuscript is nearly completed, and is planned to be submitted October 2013.

Review articles

27. Berge, R.K., J. Skorve, K.J. Tronstad, K. Berge, O.A. Gudbrandsen, and H. Grav. Metabolic effects of thia fatty acids. Curr Opin Lipidol, 2002. 13(3): p. 295-304.

***28.** Tronstad, K.J., K. Berge, R.K. Berge, and O. Bruserud. Modified fatty acids and their possible therapeutic targets in malignant diseases. Expert Opin Ther Targets, 2003. 7(5): p. 663-77.

29. Berge, R.K., K.J. Tronstad, K. Berge, T.H. Rost, H. Wergedahl, O.A. Gudbrandsen, and J. Skorve. The metabolic syndrome and the hepatic fatty acid drainage hypothesis. Biochimie, 2005. 87(1): p. 15-20.

30. Bruserud, O., C. Stapnes, K.J. Tronstad, A. Ryningen, N. Anensen, and B.T. Gjertsen. Protein lysine acetylation in normal and leukaemic haematopoiesis: HDACs as possible therapeutic targets in adult AML. Expert Opin Ther Targets, 2006. 10(1): p. 51-68.

31. Bruserud, O., K.J. Tronstad, E. McCormack, and B.T. Gjertsen. Is targeted chemotherapy an alternative to immunotherapy in chronic lymphocytic leukemia? Cancer Immunol Immunother, 2006. 55(2): p. 221-8.

***32.** Hagland, H., J. Nikolaisen, L.I. Hodneland, B.T. Gjertsen, O. Bruserud, and K.J. Tronstad. Targeting mitochondria in the treatment of human cancer: a coordinated attack against cancer cell energy metabolism and signalling. Expert Opin Ther Targets, 2007. 11(8): p. 1055-69.

33. Foss, B., K.J. Tronstad, and O. Bruserud. Connexin-based signaling in acute myelogenous leukemia (AML). Biochim Biophys Acta, 2010. 1798(1): p. 1-8.

Other publications

34. Berge, K., K.J. Tronstad, F. Abdi-Dezfuli, T. Ranheim, R. Mahesparan, R. Bjerkvig, and R.K. Berge. Poorly oxidizable fatty acid analogues inhibit the proliferation of cancer cells in culture. Adv Exp Med Biol, 1999. 466: p. 205-10.

35. Tronstad, K.J., K. Berge, R. Bjerkvig, T. Flatmark, and R.K. Berge. Metabolic effects of 3-thia fatty acid in cancer cells. Adv Exp Med Biol, 1999. 466: p. 201-4.

36. Tronstad, K.J. Effects of the modified fatty acid tetradecylthioacetic acid (TTA) on cancer cell proliferation and induction of cell death, in Department of Clinical Biochemistry. 2002, University of Bergen: Bergen.

37. Tronstad, K.J. and R.K. Berge. Book review: Lipid Biochemistry - An Introduction, 5th edn., edited by Michael I. Gurr, John L Harwood and Keith N. Frayn. Blackwell Science Ltd., Oxford (UK) 2002. Eur. J. Lipid Sci. Technol., 2004. 106(7): p. 452.