



Centre for  
Cancer Biomarkers



The Research Council of Norway



# CCBIO Newsletter

[www.ccbio.no](http://www.ccbio.no)

ISSUE NO 1, VOL 10, JAN 31, 2023

## DIRECTOR'S COMMENTS

Dear all

We have had a fresh start of 2023. The paper of Tislevoll et al. (published in *Nature Communications*) on early prediction of treatment response in AML patients made national headlines. The concept of functional biomarkers based on single-cell analytics and adaptive treatment is very promising. Congratulations to the Gjertsen team!

Also, other high-impact papers have been published from CCBIO researchers. Read about PRSS2 regulation of immune response, CAF subtypes in lung cancer, and spatial genomics of breast cancer.

Many events are upcoming, like our courses CCBIO907, with visiting faculty from Harvard, and CCBIO908, on how to excel in writing and communication. We also have information on the next CCBIO-JUSS and the CCBIO Annual Symposium in May – and many other events and funding possibilities. Do not miss the information or the deadlines.

Congratulations to those who successfully defended their PhD thesis – Kang, Tislevoll, Tveiterås and Fasmer! And welcome to new faces in the CCBIO family – Geithus and Del Rio Fuenzalida.

Finally, be ready for a special event (which can be attended online): CCBIO PI Roger Strand is presenting the opening lecture at the international workshop *Converging on the Person, Emerging Technologies for the Common Good* in the Vatican City on February 20-21, 2023, on the topic *Ethical issues of converging technologies*.

Best regards, Lars A. Akslen, Director

***Capturing cancer complexity  
and clinical challenges***



# Blood sample 24 hours after start of chemotherapy predicts survival



Acute myeloid leukemia is an aggressive blood cancer with poor survival. Younger and otherwise healthy patients undergo severe chemotherapy, often accompanied by stem cell transplant, even though it is difficult to predict who will benefit from the treatment. Now, a simple blood test can measure whether the patient's cancer will respond to chemotherapy. If the chemo has no effect, critical weeks are gained to find the right treatment.

Although high rates of initial chemotherapy response, patients often relapse due to the selection and development of chemotherapy-resistant leukemic cells.

"When treating patients with leukemia, it is challenging to quickly follow whether the patient is responding to therapy or not. The response to therapy is currently measured after weeks to months of treatment, thereby losing important time. This could result in weeks of non-functional and harsh treatment for the patient, and losing valuable time that could have been used for targeted and functional therapy," **Benedicte Sjo Tislevoll** explains, PhD candidate at CCBIO and the Department of Clinical Science, UiB, and first author of this study.

However, an immediate response to chemotherapy can be measured by investigating the functional properties of the leukemic cells. Tislevoll has in her doctoral work been investigating whether measurements during the first 24 hours of chemotherapy can predict the patient's long term response to the treatment. She has been investigating cell signaling proteins in blood samples taken before and 4 and 24 hours after startup of chemotherapy.

[Read more here.](#)

## Other articles in high impact journals



We would also like to highlight other recent publications in high impact journals.

Lars A. Akslen's group in collaboration with Randy Watnick and Rolf Brekken has recently published the work [PRSS2 remodels the tumor microenvironment via repression of Tsp1 to stimulate tumor growth and progression](#) in *Nature Communications*. Here, they identify a novel tumor-mediated mechanism that represses the expression of Tsp-1 in the TME via secretion of the serine protease PRSS2. They demonstrate that PRSS2 represses Tsp-1, not via its enzymatic activity, but by binding to low-density lipoprotein receptor-related protein 1 (LRP1). These findings describe a hitherto unreported activity for PRSS2 through binding to LRP1 and represent a potential therapeutic strategy to treat cancer by blocking the PRSS2-mediated repression of Tsp-1.

Arne Östman and Carina Strell are co-authors in the publication [Fibroblast subsets in non-small cell lung cancer: Associations with survival, mutations, and immune features](#) in the *Journal of the National Cancer Institute*. Here, they identify multimarker-defined CAF subsets through high-content spatial profiling. The robust associations of CAFs with driver mutations, immune features, and outcome suggest CAFs as essential factors in NSCLC progression and warrant further studies to explore their potential as biomarkers or therapeutic targets. This study also highlights multiplex fluorescence immunohistochemistry-based CAF profiling as a powerful tool for the discovery of clinically relevant CAF subsets.

Although not a CCBIO article, we recommend you to take a look at the article [Spatial genomics maps the structure, nature and evolution of cancer clones](#) in *Nature* where **Carina Strell** is co-author, where they developed a workflow that generates detailed quantitative maps of genetic subclone composition across whole-tumour sections. These provide the basis for studying clonal growth patterns, and the histological characteristics, microanatomy and microenvironmental composition of each clone.



# Remember deadline February 1st

The coming spring term, CC BIO will run the courses CC BIO907 March 20–31, and CC BIO908 May 22–23. Register now, deadline for study points is February 1st! Both these courses are part of the INTPART collaboration *Bergen-Harvard Cancer Studies Phase 2: Continued Partnership for Responsible Education, Research and Innovation*. Participants attending will benefit from the knowledge of researchers who have been in the frontline of their fields for decades and are experienced lecturers at Harvard Medical School.



## CC BIO907, course in cancer-related vascular biology

6 ECTS course with lectures on a wide variety of topics, including: Introduction to cancer and angiogenesis, history of angiogenesis research, tumor biology with a focus on tumor initiation and tumor metastasis, basic physiology of blood and lymphatic vessels, lymphatic vessel development and remodeling, tumor microenvironment including angiocrine signaling, molecular signaling in vascular biology: tyrosine kinases and GPCRs, tumor perfusion, measuring angiogenesis and vessel function, bridging the gap between science and medicine by disease-focused research, inflammation, axon guidance factors and nerve invasion, immune-angiogenic interaction, anti-angiogenic treatment in clinical practice. **Essential extra-curricular skills** will also be taught. Confirmed lecturers are [Bruce Zetter](#), [Diane R. Bielenberg](#), [Michael S. Rogers](#), [Steven Swendeman](#), [Randolph Watnick](#), [Ed Smith](#), and [Dipak Panigrahy](#).

**When:** March 20–31, 2023.

**Program:** Preliminary program is available [here](#). You might also be interested in reading an [earlier news article](#) about the course.

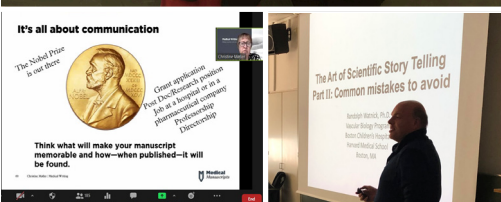
**Where:** Auditorium at campus Haukeland University Hospital, Bergen. In person.

**Academic responsible:** Agnete Engelsen and Lars A. Akslen.

**Option of 3 registration links:**

1. With ECTS, already UiB student: register at [Studentweb](#). Deadline is February 1, 2023. Must attend all sessions + exam.
2. With ECTS, not a UiB student: register at [Søknadsweb](#). Same deadline as above. Must attend all sessions + exam.
3. No ECTS: Use [this separate link](#) if you are only interested in the lectures and want to hop in and out as you please. No need for group assignments or exam.

**More information:** at [this website](#).



## CC BIO908, Scientific Writing & Communication

A new season with this popular course! The 2 ECTS course aims to provide theoretical knowledge about various elements of scientific writing, give practical experience on text editing, and the tools to improve your scientific texts. Lecturers are [Christine Møller](#) and [Randy Watnick](#).

Learn how to:

- Organize ideas, results and messages in a scientific paper
- Improve titles and abstracts
- Present a clear problem statement
- Use punctuation, grammar and numbering in a scientific text
- Write an informative and convincing cover letter

The course will also present and discuss what is good research communication.

**When:** May 22–23, 2023.

**Program:** Not yet available. See last time's program [here](#).

**Where:** Auditorium at campus Haukeland University Hospital, Bergen. In person.

**Academic responsible:** Elisabeth Wik.

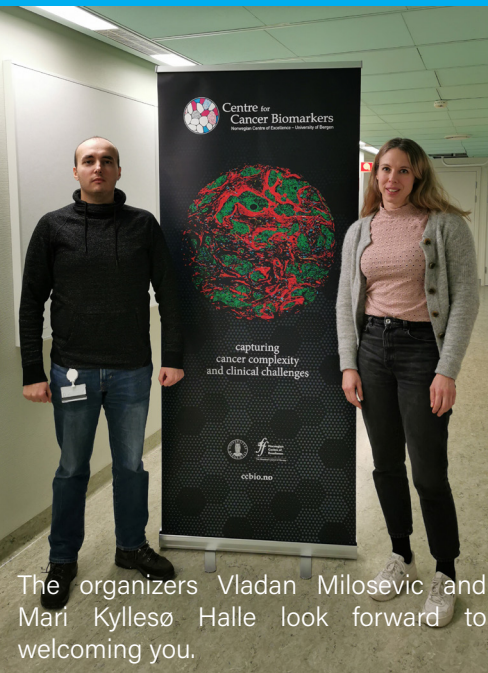
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**More information:** at [this website](#).



# Junior Scientist Symposium



The organizers are happy to welcome you all to the CCBIO Junior Scientist Symposium, February 2nd, 2023. Although mostly intended for students, PhD candidates and postdocs, all are welcome.

This seminar series is a perfect place to meet and interact with other young scientists. We anticipate lively and interesting discussion also this time. We are looking forward to the keynote lecture by CCBIO researcher Harsh Dongre, who will talk about how to make the jump of academic independence and establish your own research group. The program spans several exiting topics including small molecule drug discovery in prostate cancer, PDX models as preclinical tools for investigating myelodysplastic syndromes (MDS), mitochondrial trafficking in the tumour microenvironment and the role of CEL in pancreatic disease.

Please register within January 30th at 11.00 if you want to join the free lunch, otherwise you can register till it starts.

**When:** February 2, 2023 at 09.00-13.00

**Where:** Room B301, Sentralblokk 3rd floor, Haukeland University Hospital

**Registration:** at [this link](#)

**Program:** at [this page](#)

## CCBIO at the Vatican



Not a CCBIO event, nevertheless we wish to highlight this special event which features CCBIO PI Roger Strand who is invited to the Vatican City for the international workshop *Converging on the Person, Emerging Technologies for the Common Good*, February 20-21, 2023.

Professor Strand will hold the opening lecture *Ethical issues of converging technologies*. The event is available as a [free online workshop](#).

New technologies described as "emergent" and "convergent" include information and communication technologies, biotechnologies, nanotechnologies and robotics. The results obtained from these technologies may imply profound interventions on living organisms. The workshop will discuss a pressing need to understand these epochal changes and new frontiers in order to determine how to place them at the service of the human person, while respecting and promoting the intrinsic dignity of all.

## Save the date for the Annual Symposium



Come celebrate the 10 year anniversary of CCBIO with us, at the large format 11th CCBIO Annual Symposium! Registration is not yet open, but be sure to save the date, May 8-10, 2023!

This year, we aim for an enlarged format over three days with two overnight stays, aiming to kickstart the continuation of CCBIO's research efforts in its next phase. The venue is the same as always, the historic hotel Solstrand Hotell & Bad in the beautiful surroundings of the Bjørnefjord and distant mountains.

With so many participants in a very international mix, this is a great opportunity for international networking within the field of cancer research. The symposium will be a combination of talks by invited international speakers and other senior and junior researchers, extended poster- and speed talk sessions where younger researchers can present their work, and ample time for interaction between the participants. The selection of which participants that can present their research through posters and speed talks is done on the basis of the submitted abstracts.

**When:** May 8-10, 2023

**Who:** Open for all

**Program and registration:** Will be available [at this website](#)

# Recent doctoral defenses



Jiyeon Kang defended December 13, 2022 her doctoral dissertation "Improving economic evaluation and decision-making for oncology drugs using real-world data" at the LSHTM and UiB. Supervisors were John Cairns and Alec Miners.

Health Technology Assessment (HTA) is a multidisciplinary process that summarises the health impacts of technology, considering specific health contexts and available alternatives. Jiyeon's doctoral research focuses on the economic aspects of HTA. In her PhD thesis, she explored the use of RWD in appraisals of oncology medicines by the National Institute for Health and Care Excellence (NICE). Her research differs from previously published studies by reviewing single technology appraisals published in the last 11 years following a systematically applied extraction tool and exploring the use of RWD in diverse ways. Her thesis provided confirmatory written evidence about using RWD in NICE appraisals. It contributed to establishing comprehensive evidence about the use of RWD in NICE appraisals of oncology medicine, which can bring insight to the broad academic community and international HTA agencies.

From Kang's PhD work, three papers are published in open access peer review journal. She has also contributed with one chapter in the CCBIO book *Precision Oncology and Cancer Biomarkers* during her PhD. She will now be doing a short-term postdoctoral research job at the LSHTM, with CCBIO support.



Benedicte Sjo Tislevoll defended January 19, 2023 her doctoral dissertation "Single-cell protein profiling in early therapy response evaluation of acute myeloid leukemia by mass cytometry" at the UiB. Supervisors were Bjørn Tore Gjertsen and Monica Hellesøy.

Acute myeloid leukemia is an aggressive blood cancer with poor survival. Younger and otherwise healthy patients undergo severe chemotherapy, often accompanied by stem cell transplant, even though it is difficult to predict who will benefit from the treatment. Now, a simple blood test can measure whether the patient's cancer will respond to chemotherapy. If the chemo has no effect, critical weeks are gained to find the right treatment.

Tislevoll has in her doctoral work been investigating whether measurements during the first 24 hours of chemotherapy can predict the patient's long term response to the treatment. She has been investigating cell signaling proteins in blood samples taken before and 4 and 24 hours after startup of chemotherapy.

See the [press release](#) (Norwegian). See also [this article](#).



Maria Kathrine Tveitarås defended January 20, 2023 her doctoral dissertation "Investigating different aspects of human breast cancer as determinants for metastasis" at the UiB. Supervisors were Linda Stuhr and Rolf K. Reed.

Because metastasis is the dominant cause of death in breast cancer patients, it is necessary to understand how we can prevent metastases from occurring. Several different factors influence the tumor's ability to spread. A growing cancerous tumor will eventually outgrow its blood supply and require extra oxygen. This means that the microenvironment in the cancer tumor can have areas of hypoxia (too little oxygen). Hypoxia in cancer tumors results in a poorer prognosis and a poorer response to therapy. The aim of Tveitarås' work was to investigate the ability of various factors to influence the development of metastases in breast cancer. She also investigated whether hyperbaric oxygen treatment (HBO), to reverse hypoxia, inhibited the development of the primary tumor and metastasis in a mouse model. Hypoxia and two other factors involved in the metastasis process had very different effects on breast cancer cells with different hormone and HER-2 profiles. HBO reduced the growth of the tumor and reduced the metastases in the lungs. Finally, Tveitarås investigated possible biomarkers for metastases in a mouse model of human breast cancer, and identified four distinct proteins during the development of metastases.

See the [press release](#) (Norw.)





Kristine Eldevik Fasmer defended January 20, 2023 her doctoral dissertation "MRI and 2-[18F]FDG PET/CT for staging, prognostication, and tailoring treatment in endometrial cancer" at the UiB. Supervisors were Ingrid S. Haldorsen and Camilla Krakstad.

The dissertation consists of four works, all of which have been published in recognized medical journals with Fasmer as first author. The first part of the work showed, using dynamic MRI with advanced modeling, that patients with aggressive cancers have tumors with lower blood flow and higher cell density than what is found in tumors from patients who did not relapse. In the second part of her work, Fasmer investigated the underlying MRI image pattern (radiomics) and investigated how this affected the development of the disease. For uterine cancer, it was found that radiomic tumor signatures could be linked to a number of aggressive disease features. Fasmer and colleagues therefore believe that both dynamic MRI and MRI radiomics will be able to supplement the routine diagnostic imaging and add information of importance for choosing the most effective treatment.

The third part of the work showed that [18F]FDG PET/CT is a more precise tool than MRI for detecting spread to lymph nodes, which can be of great importance for the choice of treatment. In the last part of the work, Fasmer and colleagues showed that by using MRI findings to select patients for PET/CT (about half of the patients), it was possible to maintain an equally accurate diagnosis as by using MRI and PET/CT in all the patients.

See the [press release](#).

## New faces in CCBIO groups



Welcome to new members in the CCBIO groups!

**Simon Geithus** is a laboratory advisor in Bjørn Tore Gjertsen's group since June 2022. He has a master's degree in medicinal medicine from NTNU with a thesis on gastric intestinal metaplasia and gastric cancer biomarkers. The current focus of study is the behavior of p53 in healthy blood and acute myeloid leukemia as well as looking into the potential to create isoform specific antibodies to increase the depth of future analyses.



**Nicolas Mattias Del Rio Fuenzalida** (Sivilingeniør/MSc) is as of September 2022 a new laboratory consultant in Bjørn Tore Gjertsen's research group as a bridge employment while pursuing a PhD position. He has a background in medical technology, specialized in organic synthesis and medicinal chemistry. Nicolas has previously worked in Hans-René Bjørsvik's research group at the Department of Chemistry at the University of Bergen, where he investigated the synthesis of novel probes for mass cytometry. At his current position, the application of said probes is explored as part of researching targeted therapy in acute myeloid leukemia, which comprise method development and construction of bioinformatic pipelines. In addition to investigating leukemias, he will also be connected to a project on colorectal cancer. Nicolas is thrilled to be part of the CCBIO family and is excited for the upcoming months in the field.

# Relevant calls for funding



Here is an overview of the upcoming deadlines for funding, relevant to CCBIO students and researchers. For more details, please check the links below and find more at the Medical Faculty's page on [External funding opportunities](#).

## Horizon Europe

### ERC 2023

[Consolidator Grant](#): Deadline February 2, 2023

[Advanced Grant](#): Deadline May 23, 2023

### Missions in Horizon Europe – [Conquering cancer](#)

Next deadline is in Spring 2023.

- **Erasmus+:** Project establishment support (PES-støtte) for the development of applications under the centralized initiatives in Erasmus+. [More information here](#).

## Research Council of Norway

There will be no FRIPRO call in the February 2023 call, but we expect it to be announced before the summer 2023 with funding allocated for start in 2024.

- Deadline Feb 8, 2023: [Researcher Project for Scientific Renewal \(Thematic Priority Call\)](#) (forskningsradet.no)
  - Health: 60MNOK for project within "women's health"
- For a full overview: [Current calls for proposals](#) - apply for funding (forskningsradet.no)

## UiB

- Stays abroad for PhDs and postdocs at the Medical Faculty: next deadline is in March. [More info here](#).
- **Fond og legater:** UiB is building a new database and application system. Therefore the deadline is delayed to *January 2023*. System will open Jan 2nd, and deadline will be before end of January (exact date TBC).

## UiO

### The Anders Jahre Awards for Medical Research

Nominate candidates for two medical prizes: I. The Anders Jahre Medical Prize for outstanding scientific activity or results within Nordic medicine. The prize amounts to NOK 1 000 000 (approximately € 95 000).

II. The Anders Jahre Medical Prize to young medical investigators within the Nordic countries. The candidate must be below the age of 40 by June 15, 2023. The prize

amounts to NOK 400 000 (approximately € 38 000).

All professors of medicine serving in a Nordic country are invited to nominate potential awardees. The nominations must be received before February 1, 2023. [See info here](#).

## Individual fellowships and personal grants

EMBO: personal fellowships and career grants, open year-round. [More information here](#).

## Innovation grants from the Norwegian Research Council

- [Qualification](#) – Research Commercialisation from Publicly Funded Research – Commercialisation Project 2022. Open-ended, 3-12 months, 200-500 000 NOK.
- [Proof-of-Concept](#) – Research Commercialisation from Publicly Funded Research – Commercialisation Project 2022. Open-ended, 12-36 months, 1-5 MNOK.

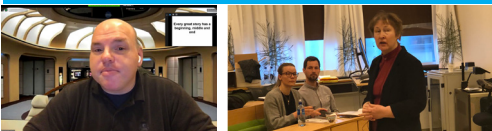
**DAM Foundation:** [Research program](#) opens Nov 15, with a deadline Feb 1, 2023.

**Kreftforeningen / Norwegian Cancer Society:** The upcoming call will open April 14, 2023, with a deadline May 26, 2023. Keep an eye on [this page](#).

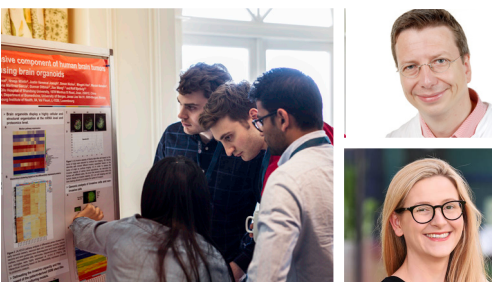
**Kristian Gerhard Jebsen Foundation:** [Call for Proposals 2023](#) for funding for new K.G. Jebsen Centres for Medical Research at Norwegian medical faculties and university hospitals. Deadline for applications is May 8th at 12:00 (noon), 2023.



# Coming CCBIO events



Make sure to save the dates in your calendar, and register when applicable. You can see all planned CCBIO events in the [CCBIO web calendar](#).



- February 2, 2023, [CCBIO Junior Scientist Symposium](#)
- February 20-21 (not a CCBIO event but we wish to highlight it nevertheless), [Converging on the person, Emerging technologies for the common good](#), Pontifical Academy for Life, Vatican City, Rome. Speaker for the opening lecture is CCBIO PI Roger Strand. You can participate in the workshop online.
- February 23, [CCBIO Seminar with Lucy Yates](#)
- March 20-31, 2023 for [CCBIO907, course in cancer-related vascular biology](#), in the CCBIO/Harvard INTPART collaboration. Open for all.
- March 23, [CCBIO Special Seminar with Michael Rogers](#)
- March 30, [CCBIO Seminar with Martin Götte](#)
- April 27, [CCBIO Seminar](#)
- May 8-10, 2023 for [next year's CCBIO Annual Symposium](#), also this time at Solstrand Hotel, outside of Bergen.
- May 22-23, 2023 for [CCBIO908, the Scientific Writing and Communication Seminar 2023](#). We are repeating the success from earlier years, in the CCBIO/Harvard INTPART collaboration. Open for all.
- May 25, [CCBIO Seminar](#)
- June 8, 2023, [CCBIO Junior Scientist Symposium](#)
- June 15, [CCBIO Seminar](#)

## Other relevant coming events



Events from collaboration partners and other relevant events.

- Gikk du glipp av webinarer Tverrfaglig brystkreftbehandling – onkologisk, kirurgisk og patologisk? Du kan fremdeles se opptak av det ved å melde deg på via [denne lenken](#).
- Did you miss the webinar: Treatment approaches for elderly/unfit patients with AML in the Nordic countries? You can still make it! The webinar can be viewed when you want [on this link](#).
- January 30, [CONNECT Clinical Trials meeting series](#), title: Academic / Investigator-initiated trials: study design and publication. Oslo Cancer Cluster, in Zoom
- February 13, [Darwin Day/Horizons lecture: Making Sense of Cancer, by Jarle Breivik](#). Studentsenteret, Egget, Bergen. The lecture will be recorded and available online [here](#) afterwards.
- February 13, [Norway Life Science 2023, Livsvitenskapskonferansen](#). UiO, Oslo and some events digitally.
- March 20-22, March 28-30, [Bio-Europe Spring](#), 3 days in-person (Basel, Switzerland), 3 days virtually.
- March 20-22, [ESMO Sarcoma and Rare Cancers 2023](#), Lugano, Switzerland.
- April 14-19, [AACR \(American Association for Cancer Research\) Annual Meeting 2023](#), Orange County, Orlando Florida
- June 2-6, [ASCO Annual Meeting 2023](#), Chicago and online.
- June 8-11 [EHA2023 Hybrid Congress](#), Frankfurt, Germany and online on the Congress platform, and virtual days from June 14-16, 2023.
- June 12-15, [Annual Congress of the European Association for Cancer Research](#), Torino, Italy
- August 10-12, [2023 SNO/ASCO CNS Cancer Conference](#), San Francisco, California
- September 28 - October 1, [ESGO 2023 European Congress on Gynaecological Oncology](#), Istanbul.



# Publications

You can find the CCBIO publications on [this pubmed link](#). See the most recent 5 below.

- Fosse V, Oldoni E, Biatrix F, Budillon A, Daskalopoulos EP, Fratelli M, Gerlach B, Groenen PMA, Hölter SM, Menon JML, Mobasher A, Osborne N, Ritskes-Hoitinga M, Ryll B, Schmitt E, Ussi A, Andreu AL, McCormack E; PERMIT group. [Recommendations for robust and reproducible preclinical research in personalised medicine](#). *BMC Med*. 2023 Jan 8;21(1):14. doi: 10.1186/s12916-022-02719-0. PMID: 36617553
- Tislevoll BS, Hellesøy M, Fagerholt OHE, Gullaksen SE, Srivastava A, Birkeland E, Kleftogiannis D, Ayuda-Durán P, Piechaczyk L, Tadele DS, Skavland J, Panagiotis B, Hovland R, Andresen V, Seternes OM, Tvedt THA, Aghaepour N, Gavasso S, Porkka K, Jonassen I, Fløisand Y, Enserink J, Blaser N, Gjertsen BT. [Early response evaluation by single cell signaling profiling in acute myeloid leukemia](#). *Nat Commun*. 2023 Jan 7;14(1):115. doi: 10.1038/s41467-022-35624-4. PMID: 36611026
- Chen Y, Klinge TA, Aas H, Wik E, Akslen LA. [CD47](#) and CD68 expression in breast cancer is associated with tumor-infiltrating lymphocytes, blood vessel invasion, detection mode, and prognosis. *J Pathol Clin Res*. 2023 Jan 4. doi: 10.1002/cjp2.309. Online ahead of print. PMID: 36598153
- Sui L, Wang S, Ganguly D, El Rayes TP, Askeland C, Børretzen A, Sim D, Halvorsen OJ, Knutsvik G, Arnes J, Aziz S, Haukaas S, Foulkes WD, Bielenberg DR, Ziemys A, Mittal V, Brekken RA, Akslen LA, Watnick RS. [PRSS2 remodels the tumor microenvironment via repression of Tsp1 to stimulate tumor growth and progression](#). *Nat Commun*. 2022 Dec 27;13(1):7959. doi: 10.1038/s41467-022-35649-9. PMID: 36575174
- Farndale R, Sonnenberg A, DiPersio CM, Eble JA, Heino J, Gullberg D. [What does it take to be a collagen receptor?](#) *Matrix Biol*. 2022 Dec 24:S0945-053X(22)00153-6. doi: 10.1016/j.matbio.2022.12.004. Online ahead of print. PMID: 36574820

## Recent CCBIO in the media

Recent media appearances by CCBIO PIs and group members. For all media hits, see [CCBIO's web pages](#).

- 19.01.23, Bergensavisen (paper version), "Venter at det vil ta lengre tid å få svar på celleprøver i Bergen", Elisabeth Wik.
- 18.01.23, Medscape, "[Blood Test 24 Hours After Starting Chemo Predicts AML Survival](#)", Benedicte Sjo Tislevoll.
- 13.01.23, Bergens Tidende, "[Avslører tidlig om kreftbehandlingen virker](#)", Benedicte Sjo Tislevoll.
- 12.01.23, NRK Dagsrevyen, "[Ny cellegift-forskning](#)", Benedicte Sjo Tislevoll.
- 12.01.23, NRK Vestland, "[Gjennombrot i kreftforskning: På eitt døgn kan legane finne ut om cellegifta fungerer](#)", Benedicte Sjo Tislevoll.
- 11.01.23, Lab Medica, "[Blood Test 24 Hours After Start of Chemotherapy Predicts Survival](#)", Benedicte Sjo Tislevoll.
- 20.12.22, Onkologisk Tidsskrift, "[Lavdose cellegift før stamcelletransplantasjon viser like gode resultater som høydose mot r/r AML](#)", Pål Tore Bentsen
- 20.12.22, Kreftforeningen, "[Vanner ville vyer med millioner](#)", Carina Strell.
- 19.12.22, Dagbladet (paper version), "Ny kreftmedisin vekker oppsikt", Line Bjørge.
- 13.12.22, HealthTalk, "[Pasienter med akutt myelogen leukemi kan leve lenger med ny behandlingsform](#)", B. T. Gjertsen.

## Programs and Research Teams

### Mechanisms of Tumor Micro-environment Interactions:

- Donald Gullberg
- Karl-Henning Kalland
- Emmet McCormack

### Exploration and Validation of Cancer Biomarkers:

- Lars A. Akslen
- Jim Lorens
- Camilla Krakstad
- Daniela Costea
- Elisabeth Wik
- Carina Strell
- Agnete Engelsen

### Clinical Applications and Trial Studies:

- Bjørn Tore Gjertsen
- Oddbjørn Straume
- Line Bjørge

### Health Ethics, Prioritization and Economics:

- Roger Strand
- John Cairns
- Ole Frithjof Norheim

### Additional resources:

### Bioinformatics and Big Data

- IngeJonassen

### Strategic Advice

- Rolf Reed

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