

KinN Therapeutics AS

- from idea to CRO



Rakel Brendsdal Forthun

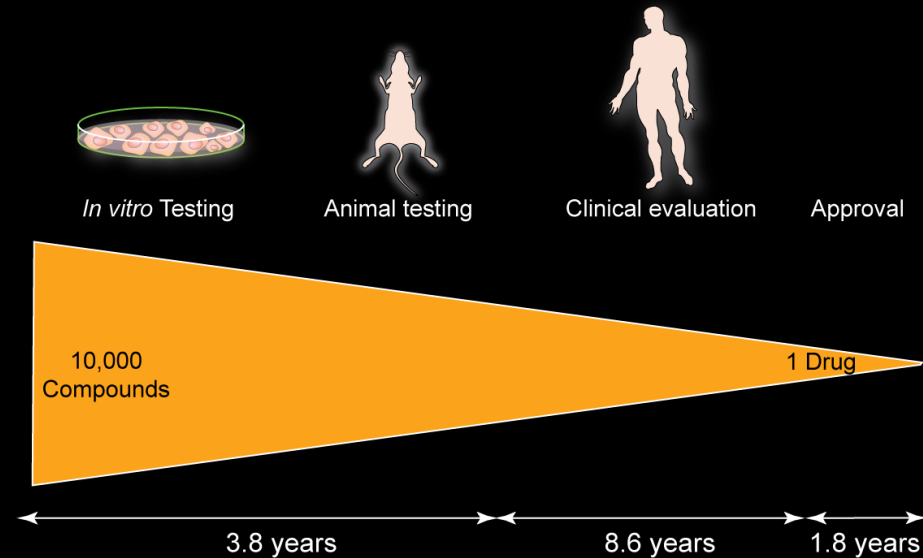
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Bergen, Norway

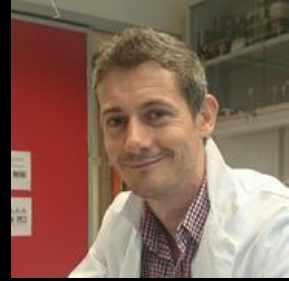
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- Excellent *in vitro* work being performed for leukemia in Norway
- However, standard treatment for acute myeloid leukemia has been the same since introduced in 1973
 - 5 year survival of patients >65 years is 5%
- Large need for research to bridge the gap between clinical trials and cell culture experiments



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- Emmet Mc Cormack recruited as post-doc (2003)
 - Preclinical models of leukemia
 - ✓ Cell lines
 - ✓ Patient derived material
 - Develop preclinical imaging platform
 - ✓ Monitor disease development

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- Post-doc period of Mc Cormack
 - Developed preclinical mouse models for human leukemia
 - Bought second ART inc. Optix imager in the world
 - ✓ Consultant for ART inc.
 - ✓ UoB Beta-site in Europe
 - ✓ Client demonstrations
 - First project explored immune response and anti-cancer effect of beta-glucan in a rat model (2006)
 - Sponsored research
 - No net profit
 - ✓ Possible to do contract research

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- Contacted by Unifob AS for commercialization (2007)
 - Research company owned by UoB and the Foundation for University Research
- Established a preclinical project CRO
 - Run by Prof. Mc Cormack, facilitated by Prof. Gjertsens lab
 - ✓ Use UoB facilities
 - ✓ Pay as external user

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- June 2007
 - 1 veterinarian, 1 research technician hired
 - ✓ Contact with pharmaceutical industry
- December 2007
 - 4 contracts running
 - ✓ 2 of top ten public trading pharma companies
 - ✓ 750 000 NOK profit
- Viable business
 - Break out from UniFob platform
 - Independent CRO with two owners

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- Kinn Therapeutics AS established in 2003
 - ✓ Intellectual property of cyclic AMP inhibitor
- Bought from Prof. Døskeland and Prof. Fladmark in 2008
 - ✓ Prof. Gjertsen and Prof. Mc Cormack as share holders
 - ✓ Restructured to KinN Therapeutics AS

KinN Therapeutics AS

- Runs at Haukeland Campus
 - EU-projects
 - ✓ Companies
 - ✓ Scientific groups outsourcing preclinical work
 - Public trading pharma companies
 - Novartis, Johnson&Johnson
 - Smaller biotech and startup companies
- Alternative to traditional academic route after higher research education
 - Keep research activity in West Norway

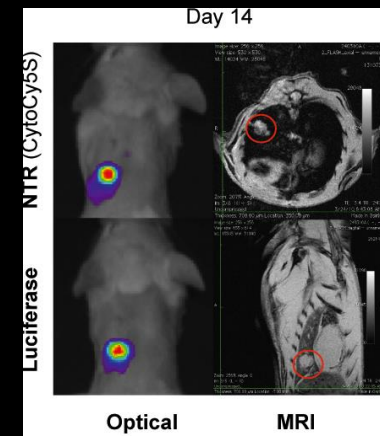
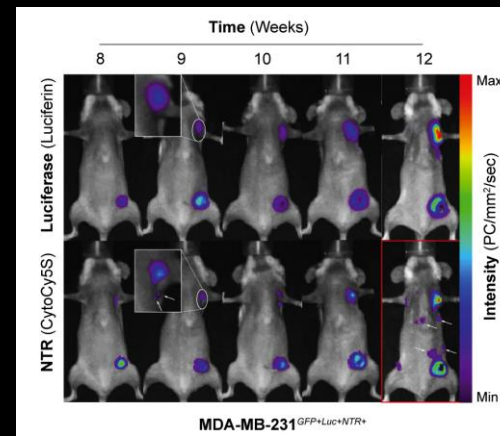
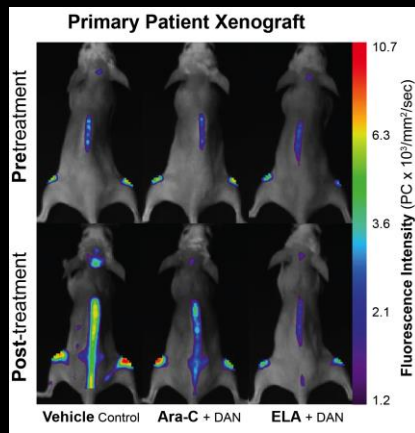
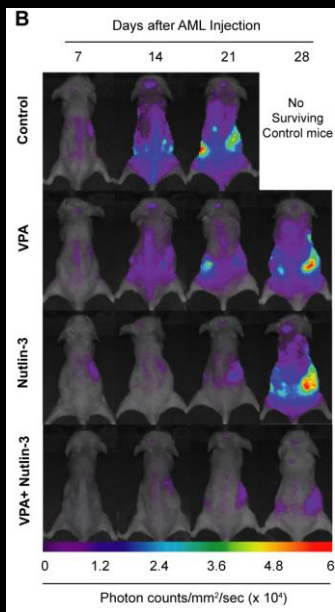
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UoB Infrastructure available

- **Optical Imaging**
 - Bruker (formerly Carestream) In-Vivo MS FX PRO
 - ✓ Bioluminescence, Multispectral fluorescence + X-ray
 - 3 ART Inc. Optix™ Systems (MX3, MX and SX)
 - ✓ Time-domain optical imaging, fluorescence, bioluminescence
 - PerkinElmer IVIS SpectrumCT (Available Q4 2013)
 - ✓ Bioluminescence, Multispectral fluorescence + CT
- **Ultrasound** – VisualSonics Vevo® 2100
- **MRI** – Pharmascan 70/16 AS, Bruker Biospin MRI GmpH
 - 7T horizontal superconducting magnet
- **PET/CT** – Medisio Ltd. nanoScan
 - Currently available probes – ¹⁸F₂FDG, ¹⁸F₂FLT, ¹⁸F₂FMISO
 - Custom probes available on request

KinN Therapeutics AS

- KinN Therapeutics AS does
 - *in vitro* screening, efficacy and combinational studies
 - *In vivo* ADME, dosing finding studies and MTD
 - *In vivo* preclinical efficacy in Heme and solid models available as
 - ✓ Cell line s.c. models with caliper and preclinical imaging
 - ✓ Orthotopic and metastatic xenograft with preclinical imaging
 - ✓ Primary patient xenografts with preclinical imaging
 - ✓ Model Development – tailored to the clients needs



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Metastatic Models and imaging modalities

Indication	# Cell line	# PDX models	Imaging modality
AML (Acute Myeloid Leukemia)	10	>30 reproducible models	Optical PET/CT
CML (Chronic Myeloid Leukemia)	3	3 reproducible models	PET/CT Ultrasound
MDS (Myelodysplastic Syndrome)	1	In development	Optical
Breast	3	In development	Optical
Lung	3	In development	Optical MR
Prostate	3	In development	Optical Ultrasound
Pancreatic	4	In development	Optical Ultrasound
Ovarian	2	1 reproducible model	Optical Ultrasound
Endometrial	1	1 reproducible model	Optical
Melanoma	2	-	Optical

Additional models available upon request

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What advantages do we offer?

- **Model Development:** Tailored to clients specific scientific objective
- **Clinically relevant preclinical models** of Leukaemia and orthotopic, metastatic models of cancer
- **Toxicity drug evaluation** and preclinical efficacy
- State-of-the-ART **Preclinical imaging** - permitting spatio-temporal and functional imaging of cancer
- High level of **expertise in model development and oncology**