



**avexxin**  
oncology

Uniqueness in  
fighting cancers

Avexxin Oncology AS is a Norwegian  
subsidiary of Coegin Pharma AB

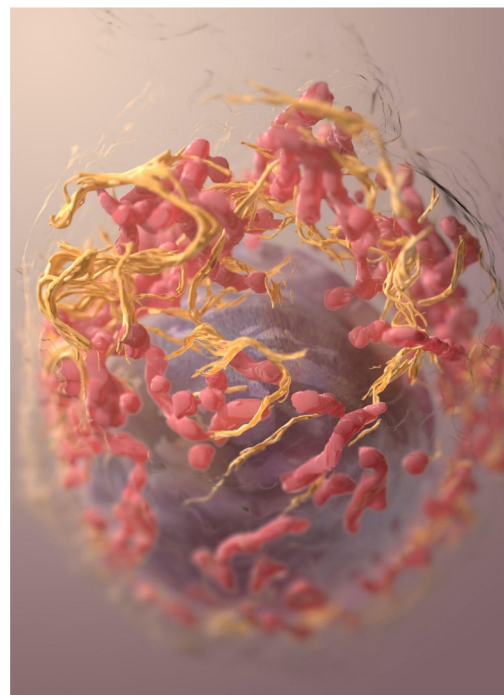
The purpose is to develop a promising novel  
and proprietary cancer drug candidate AVX420 with the goal of an exit

# Introduction

Avexxin Oncology AS is established as a Norwegian subsidiary company to the Swedish biotechnology company Coegin Pharma AB as part of Coegin Pharma AB's hub & spoke "portfolio" biotech model, with clear benefits to investors. Avexxin Oncology AS will develop the promising novel and proprietary cancer drug candidate AVX420 further, and will primarily be financed separately from Coegin Pharma AB.

The goal of the hub & spoke business model is to focus on identifying new ground-breaking project with clear potential for value addition with the following phases: Identification ⇒ Financing ⇒ Value addition ⇒ Exit.

Coegin Pharma AB's hub & spoke model offers lower costs, more flexible financing, increased focus and an effective exit process. It is governed by a senior management team supported by a skilled professional board of directors.




The image illustrate the tumor microenvironment surrounding the tumor

## The cancer market


The global therapeutics market for cancer drugs is 166 billion USD, consisting of mix of old and newer drugs. The world's largest cancer drug is MSD's Keytruda® (pembrolizumab) which is indicated for several cancers and has an annual turnover of 17 billion USD.

Despite available drugs like chemotherapy and immunotherapy, a large unmet need persist for new cancer treatments that are both efficacious and safe.

Cancer remains one of the leading causes of death and is on the rise globally, in Sweden, approximately 62.000 new cases of cancers are diagnosed each year. Leukemia ranks as the number one cancer diagnosed in children and ranks as top 10 most common cancer in adults. Breast cancer is the most common cancer in women, except for skin cancers, and triple negative breast cancers with a poor outcome accounts for 15%.




### Triple Negative Breast Cancer (TNBC)




In 2020 **2.3M women** had breast cancer<sup>1</sup>

TNBC has a **less favorable** prognosis and accounts for 10-15% of all breast cancers<sup>2</sup>




Treatments for more advanced cases is warranted, as the **survival rate** of advanced TNBC patients within 3 months after recurrence is as low as **25%**<sup>2</sup>




TNBC cost the society up to **€300K** per patient per year and overall, with an estimated global cost to society up to **€100 Billion** per year<sup>3</sup>

References:  
1) <https://www.who.int/news-room/fact-sheets/detail/breast-cancer>, 2) <https://www.cancer.org/cancer/breast-cancer/about/types-of-breast-cancer/triple-negative.html>  
3) Huang Mei et al., Economic and Humanistic Burden of Triple-Negative Breast Cancer: A Systematic Literature Review. Pharmacoeconomics. 2022 May;40(5):519-558.




### Acute Lymphoblastic Leukemia (ALL)




Yearly in US 6K new cases and **1:4 die** from ALL<sup>4</sup>

Although rare, **ALL is the most common** type of leukaemia that affects children<sup>5</sup>



The 5-year **relative survival rate** for ALL is as low as 68.8% 90% in children **30-40% in adults**<sup>6</sup>



ALL cost the society more than **€500K** per patient per year and overall with an estimated global cost to society up to **€3 Billion** per year<sup>7</sup>

4) <https://www.cancer.org/cancer/acute-lymphocytic-leukemia/about/key-statistics.html>, 5) <https://www.chop.edu/conditions-diseases/acute-lymphoblastic-leukemia-all>  
6) <https://www.leukemiacenter.org/newsroom/blog/2020/10/what-you-should-know-about-acute-lymphoblastic-leukemia> 7) Murotto, Blood, V138, S1, 23 Nov 2021, P. 663



# An opportunity for novelty in the cancer market

Despite available and effective cancer drugs, a large unmet need persists for new cancer treatments that are both safe and efficacious.

Existing treatments often only act on one modality, for example chemotherapies damage the genes inside the nucleus of cells that are dividing, other treatments work to stimulate the immune system to destroy cancer cells (e.g. Keytruda®). AVX420 is inhibiting cPLA2 $\alpha$ , a key enzyme which causes release of arachidonic acid resulting in the activation of multiple inflammatory and proliferative processes, involved in several processes being upregulated in cancer biology, hence acting multifaceted.

Several effective cancer treatments also act on healthy cells resulting in severe side effects. cPLA2 $\alpha$  inhibitors including AVX420 are believed to have a more favorable safety profile based on preclinical and clinical studies.

Overall, there is a great need for new drugs with  
(Reference Nature, biopharma dealmakers, 01 March 2022  
<https://www.nature.com/articles/d43747-022-00033-5>)

novel and effective ways of targeting cancers and with an improved safety profile.

The financial opportunity in the cancer market is substantial. The total headline value of the biopharma licensing, collaborations and joint ventures for which financial details were disclosed was 213.5 bUSD, up from 198 bUSD in 2020, with cancer-focused deals accounting for 29% of the 1,968 deals signed in 2021. Financial terms were only disclosed for 130 of the 574 cancer deals announced, with a headline figure of 73.1 bUSD. Biopharma M&A activity was worth 118.4 bUSD in 2021, down 32% compared with 2020, and cancer-focused M&A's in 2021 were valued at 19.7 bUSD.

The top ten licensing deals in oncology in 2021 with a projected deal value over 1 bUSD with upfront payments in the range of 30 mUSD to 1 bUSD.

## Series A funding and preclinical licensing deals in similar cases

Series A fundings in Europe for pre-clinical oncology companies/assets (blood and breast cancer) since 1. January 2018 has an average value of 27 mUSD.

The most recent deal value of top small molecule licensing deals in breast cancer and leukemia had an average deal size of 589 mUSD.

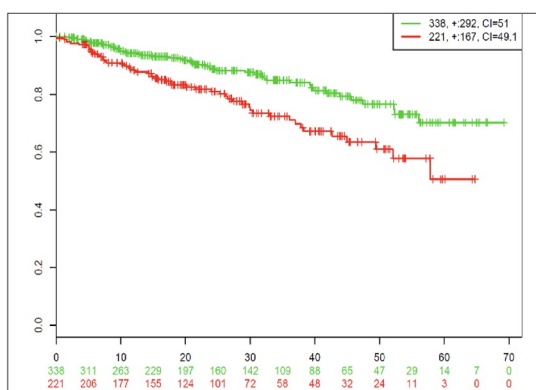
	Company	Deal Date	Deal Value (mUSD)	HQ location	Investor
Series A venture fundings	CDR-Life Inc	13-Apr-2022	76.00	Switzerland	RA Capital Management LP, Omega Fund Management LLC Jeito Capital
	RS Research	17-Dec-2021	12.00	Turkey	OneLife Ventures, Eczacibasi Momentum, Gen Iiac ve Saglik Urunleri AS
	Leucid Bio Ltd	21-Oct-2021	15.87	United Kingdom	Future Fund, Epidarex Capital Management LLP, Sofinnova Partners SAS, 2invest, Vulpes Investment Management Pvt Ltd
	TriArm Therapeutics Ltd	27-Sep-2021	40.00	China	HT Capital Investment Ltd, LO Co-Investment Fund SCA, Efung Capital, Panacea Venture Healthcare Fund I LP, Virtus Inspire Ventures, Wuhan Ruifu Medical Health Equity Investment Ltd, Gimpo Health Fund
	ADCendo Aps	29-Apr-2021	61.65	Denmark	Novo Seeds, RA Capital Management LP, Ysios Capital Partners, HealthCap, Glide Healthcare Partners BV
Deal value of most recent top small molecule licensing deals	BAKX Therapeutics Inc	27-Jul-2021	852	USA	Ipsen SA
	Systems Oncology LL	15-Sep-2020	370	USA	Bayer AG
	Ikena Oncology Inc	31-Jan-2019	545	USA	Celgene Corp

# The role of cPLA2 $\alpha$ in cancer

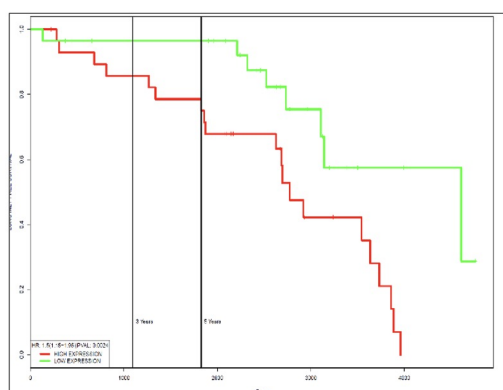
There is substantial evidence that cPLA2 $\alpha$  plays a key role in the development of cancer and inflammation. Furthermore, high cPLA2 $\alpha$  levels correlate with metastasis and poor prognosis of several cancers. Even poor treatment outcomes of existing treatments have been shown to be correlated with high cPLA2 $\alpha$  levels, and inhibiting cPLA2 $\alpha$  in combination with existing standard of care treatments, for example radiation, increases the treatment response in preclinical models.

## High levels of cPLA2 $\alpha$ is associated with poor prognosis

Cytosolic Phospholipase A2 group IVA enzyme (cPLA2 $\alpha$ ) is an emerging and promising new target for treating cancers. Elevated cPLA2 $\alpha$  expression is associated with poor prognosis and survival of cancers (red curves), as compared with patients with no or low levels of cPLA2 $\alpha$  expression (green curves).



Shaughnessy 2005, myeloma



Wang 2007, breast (lung metastasis)

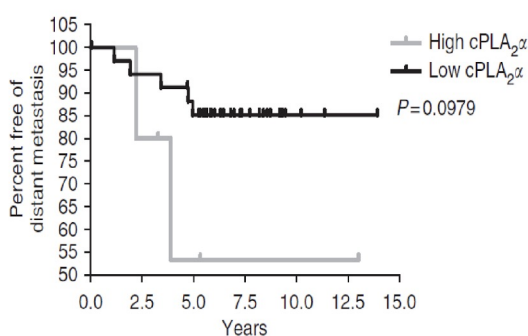
## AVX420 has potential as a stand alone or combination therapies

Low cPLA2 $\alpha$  expression results in poor response in breast cancer and other cancers patients receiving hormone treatment. Inhibiting cPLA2 $\alpha$  furthermore enhances the response to radiation therapy.

In conclusion AVX420 has a strong potential as a standalone or combination therapy.

### cPLA2 $\alpha$ expression

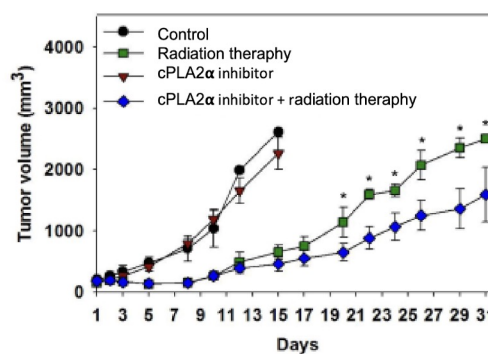
Endocrine/Hormonal Therapy - Breast cancer patients



Calazza F et al. Br J Cancer. 2011 Jan 18;104(2):338-44

### cPLA2 $\alpha$ inhibition

Radiation - ovarian tumors (mice)



Schulte et al. Cancer Lett. 2011 May 28; 304(2): 137-143

# The history of Avexxin Oncology's drug candidate

AVX420 is a second-generation small molecule in the AVX family of potent and selective cPLA2 $\alpha$  inhibitors<sup>1</sup> and belongs to a chemical class of thiazolyl ketone analogues. AVX420<sup>2</sup> was developed by professor Berit Johansen NTNU in Trondheim,

Norway and professor George Kokotos Laboratory of Organic Chemistry, University of Athens, Greece, and AVX420 is 10 times more biologically effective than the company's previous AVX analogues.

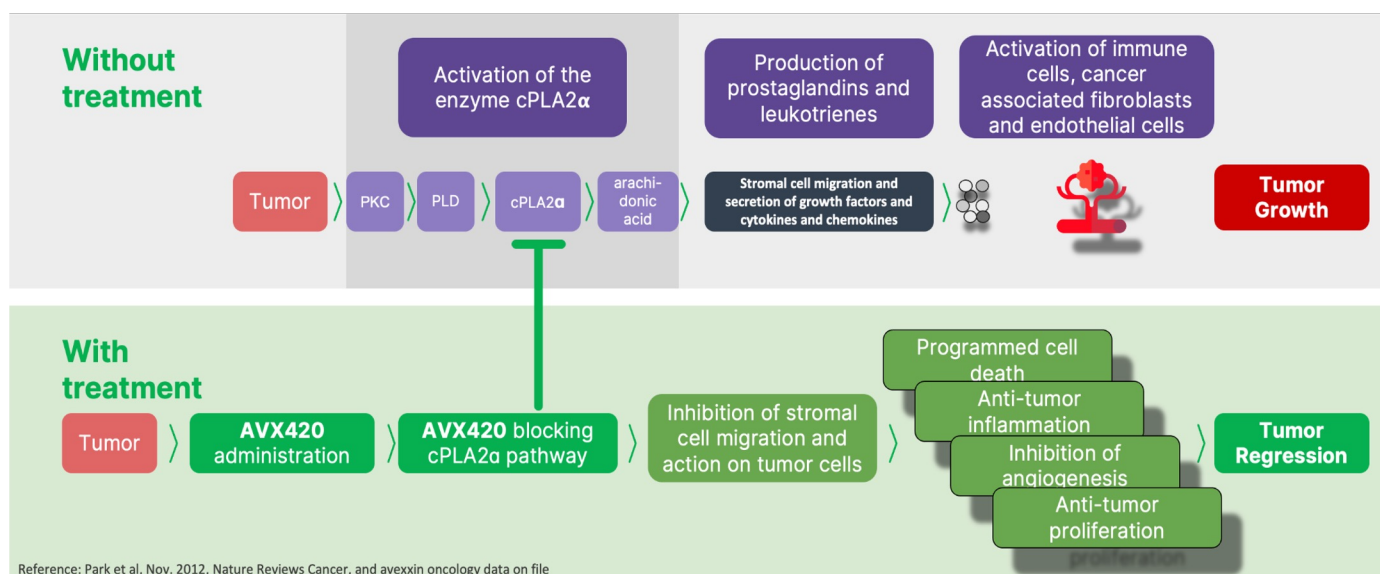
1. J Med Chem. 2014 Sep 25;57(18):7523-35.

2. Hussin A, 2016, Effects of cPLA2 $\alpha$  inhibition in the MDAMB-468 cell model system for basal-like breast cancer and/or triple negative breast cancer <https://ntnuopen.ntnu.no/ntnu-xmlui/bitstream/handle/11250/2421056/anfal%20hussin.pdf?isAllowed=y&sequence=1>

## AVX420 with a specific mode of action inhibiting cPLA2 $\alpha$

The small molecule AVX420 has a novel mode of action based on pioneering research on cPLA2 $\alpha$  with a potential paradigm shift for the treatment of cancers, as a potential single agent or in combination with existing therapies. AVX420 inhibits

cPLA2 $\alpha$  resulting in significantly reduced levels of arachidonic acid, resulting in a pronounced effect on tumor growth inducing programmed cell death, anti-tumor inflammation, inhibition of angiogenesis, and anti-tumor proliferation.



Inhibition of cPLA2 $\alpha$  is predicted to have a therapeutic effect on cancer and inflammatory diseases via a new therapeutic intervention point. AVX analogues are both potent and selective

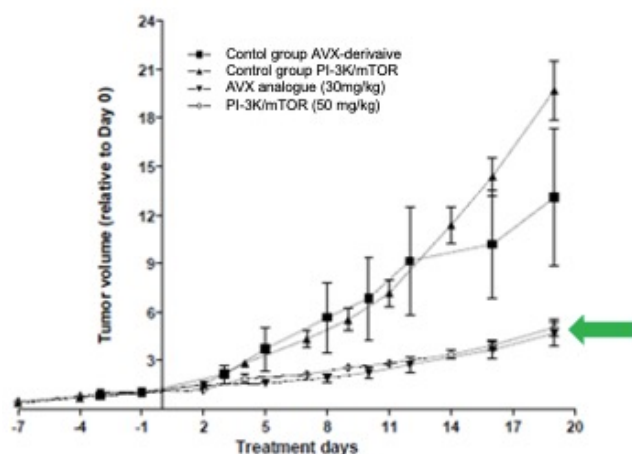
inhibitors of cPLA2 $\alpha$  and have demonstrated proof-of-efficacy in multiple pre-clinical disease models as well as clinical proof-of-concept in psoriasis<sup>1</sup> and actinic keratosis<sup>2</sup>.

References: 1) Omland SH, Habicht A, Damsbo P, Wilms J, Johansen B, Gniadecki R. A randomized, double-blind, placebo-controlled, dose-escalation first-in-man study (phase 0) to assess the safety and efficacy of topical cytosolic phospholipase A2 inhibitor, AVX001, in patients with mild to moderate plaque psoriasis. J Eur Acad Dermatol Venerol. 2017 Jul;31(7):1161-1167  
2) Ortner, V. K., Johansen, B., et al. The Copenhagen Actinic Keratosis Study (COAKS). A decentralised clinical trial to evaluate tolerability, safety and efficacy of daily field-directed topical treatment with cytosolic phospholipase A2 inhibitor, AVX001, in participants with actinic keratosis: protocol for a randomised controlled phase I/IIa trial. BMJ open, 12(10), 2022, e061012.

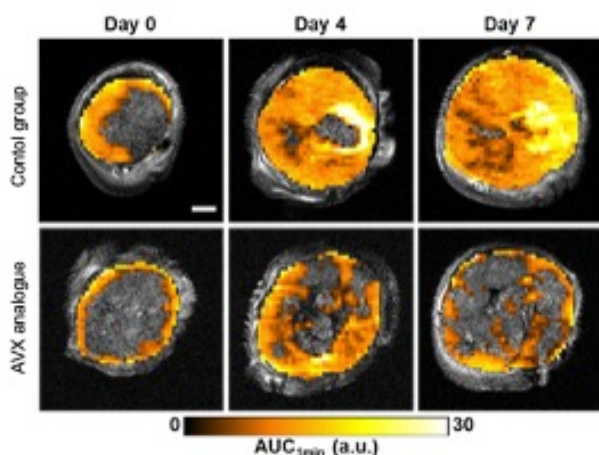
## Promising data in breast cancer models

AVX analogues have in breast cancer in vivo models shown promising tumor reducing effects in mice. In particular triple-negative

breast cancer is sensitive to AVX-analogues, where an action on the tumor growth was observed but also on the vessels supplying the tumor.



AVX analogue blocks effectively breast cancer tumor growth in mice (green arrow) and AVX-treated mice had absence of side effects. BEZ235 a dual PI-3K/mTOR inhibitor had similar effects, however treated mice were suffering from severe fatigue.



In the breast cancer mouse model, AVX analogue reduced the tumor blood supply by suppressing endothelial cell proliferation and tumor angiogenesis (lower panel, less yellow/orange shows reduced perfusion and blood supply).

PI-3K inhibitors control the PI-3K enzyme that transmits signals in cells and that helps control cell growth. Despite being effective, they are often associated with notable side effects that can be serious or fatal, including infection, diarrhea, liver problems, rash, and inflammation of the lungs.

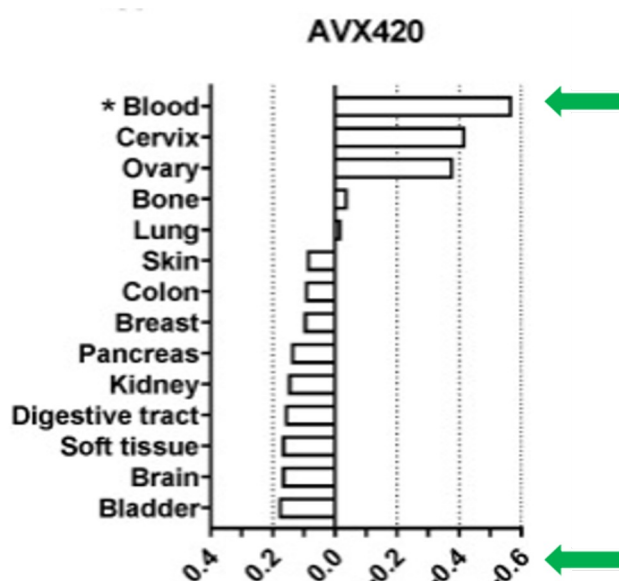
Novel unpublished data have shown that AVX-analogues synergize effectively with selected PI-3K inhibitors, being able to lower the concentration of the PI-3Kinhibitor, likely to be safer for the patients and still maintain efficacy.

Reference: Kim E et al. BMC Cancer (2016) 16:1915; Kokotos G et al, J Med Chem. 2014 Sep 25;57(18):7523-35  
<https://www.fda.gov/science-research/fda-grand-rounds/saga-phosphatidylinositol-3-kinase-pi3k-inhibitors-05122022>

## Promising data in leukemia models

In a screen of the effect of AVX420 in 66-cancer lines, a broad anti-cancer action was observed. Apart from lung, colon, renal and

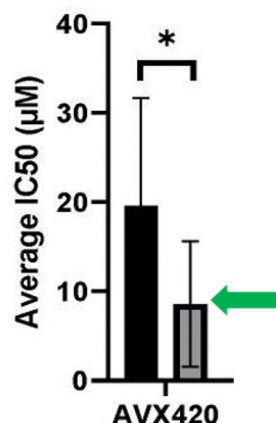
other cell lines, interesting activity was seen in leukemia lines. AVX420 is very potent in selected leukemic cell lines such as acute lymphoblastic leukemia (ALL).



The relative sensitivity of tissue type compared to panel average showed that **blood cancer cell lines** (green arrows, Δ10log IC50 values displayed) were **highly sensitive to AVX420**.

Novel unpublished data indicate that in an acute lymphoblastic leukemia liquid tumor animal model, where AVX420 was injected IV, a significant dose dependent effect was observed after just 3 weeks. Very interestingly the cell viability was investigated, and programmed cell death was identified. Direct cell death by necrosis might be largely related to side effects of anticancer therapies.

Furthermore, preliminary results show that AVX420 induces a specific form of cell death, programmed cell death, in a very low concentration range (nM) specific to human blood cancer (leukemia) cells. This sensitivity to cell death was not observed in human healthy T cells, even with a fifty-fold higher



**Blood cancer cells are highly sensitive to AVX420** (hematological cancers, green arrow) than for solid cancers (8.5 μM, and 19.5 μM).

concentration of AVX420, as examined in four independent experiments.

The programmed cell death is not harmful to the host and does not provoke an inflammatory reaction, unlike another type of cell death, necrosis, which is characterized by the usual side effect profile often seen with chemotherapy. This suggests that AVX420 has selective properties against blood cancer cells and less risk of causing side effects on the healthy immune system, which is often seen with existing treatment options.

Hence, with these novel data we may see significantly less side effects in the clinic with AVX420 as compared with standard therapies.

This is an important milestone towards further preclinical and clinical development.

Reference: Mohammad N, et al., Inhibition of Cytosolic Phospholipase A2α Induces Apoptosis in Multiple Myeloma Cells. *Molecules*. 2021 Dec 9;26(24):7447  
 Lee SY, Ju MK, Jeon HM, Jeong EK, Lee YJ, Kim CH, Park HG, Han SI, Kang HS. Regulation of Tumor Progression by Programmed Necrosis. *Oxid Med Cell Longev*. 2018 Jan 31;2018  
 Press release 2023-01-19, Coegin Pharmas portföljbolag Avexxin Oncology presenterar nya lovande forskningsresultat för AVX420 i blodcancer



# Avexxin Oncology builds on a strong Norwegian and North American scientific foundation

AXV420 is developed by prof. Berit Johansen at NTNU in Trondheim, Norway supported by several peer reviewed publications, supported by prof. Edward Dennis, UC San Diego and prof. George Kokotos, University of Athens, Greece. The work on the role of cPLA2 $\alpha$  and the role of AVX analogues has extensively been investigated by from Norway prof. Berit Johansen,

prof. Bjørn Tore Gjertsen and prof. Magne Børset; and from USA prof. Joseph Bonventre. In the resent work on identifying the relevant biomarker for AVX420 prof. Thomas Litman from Denmark is involved.

This work is supported by strong global patents in place and with protection beyond 2040.

## Avexxin Oncology's world Leading Scientific Advisors and Key Collaborators



**Professor Berit Johansen – International Expert in cPLA2 Compounds and inventor of the AVX-compounds**  
*Department of Biology, Faculty of Natural Sciences, Norwegian University of Science and Technology (NTNU).*

Dr. Johansen is a Professor and Ph.D. in Molecular Genetics. She has a vast experience in molecular biology, inflammation, cancer research and cPLA2. Dr. Johansen did hold distinguished positions at: UCLA, US; Uni. of Uppsala, Sweden; NTH, Dept. of Technical Biochemistry; at Unigen, Uni. of Trondheim, NO; Inst. of Molecular Genetics, Uni. of Göttingen, DE; Biogen Research Corporation, Cambridge, MA; Dept. of Chemistry and Biochemistry, Uni. of California, San Diego, CA, and Harvard Medical School, Boston, MA, USA.



**Professor Edward A. Dennis – International Expert in PLA2**  
*Department of Chemistry Biochemistry, University of California, San Diego, USA*

Dr. Dennis is distinguished Professor of Chemistry and Biochemistry and pharmacology, and Chair of the Department of Chemistry and Biochemistry at UCSD. The Dennis group has studied the structure and function of phospholipases for about three decades. He has contributed significantly to the AVX chemistry.



**Professor Joseph Bonventre – International Expert in Renal Diseases and PLA2**  
*Brigham and Women's Hospital, Renal Unit, Harvard Medical School, Boston, USA*

Dr. Bonventre is Chief of the Renal Unit and Director of the Bioengineering Division at Brigham and Women's Hospital and has had a long-standing interest in various aspects of cellular injury and repair mechanisms in the kidney with a special emphasis on the role of inflammation, biomarkers and stem cells. One of his key focus research areas has and is still PLA2, contributing to the understanding of cPLA2 $\alpha$  as a target.



**Professor George Kokotos – International Expert in Chemical Synthesis of PLA2 Compounds**  
*Laboratory of Organic Chemistry, University of Athens, Greece*

Dr. Kokotos is Chairman of the Dept. of Chemistry at University of Athens. The department is working in the field of organic, bio-organic and medicinal chemistry. Dr. Kokotos has for decades studied chemistry in order to create suitable therapeutic compounds targeting cPLA. He is a collaborator of Professor Ed Dennis in several research projects in the field, and co-inventor of AVX.



**Professor Bjørn Tore Gjertsen – International Expert in myeloid leukemia**  
*Haukeland University Hospital, Bergen fMRI Group, Norway*

Dr. Gjertsen is the medical chief and Consultant Hematologist. He has developed single cell phosphoprotein analysis in myeloid leukemia patient for phenotype analysis of mutations in signaling pathways, explored phosphoprotein signaling response for prognostic information in cancer, as biomarkers for therapy guidance in clinical trials and in elucidation of key physiological responses. In collaboration with Dr. McCormack, establishment of animal models and advanced molecular imaging of myelogen leukemia for development of p53- and signaling-targeted therapy, and researched AVX420 in humanized mouse models.



**Professor Magne Børset – International expert in bone marrow cancers**  
*St Olavs University Hospital, Trondheim and Norwegian*

Dr. Børset is a Norwegian physician, is a senior consultant in clinical immunology and transfusion medicine. He is doing research on molecular oncology, immunology, and cancer cells from patients with multiple myeloma – a type of cancer which is localized to the bone marrow. He has researched AVX420 in *in vitro* leukemia models.



**Prof. Thomas Litman – International expert in bioinformatics and multi drug resistance in cancer**  
*University of Copenhagen, Immunology, and LEO Pharma A/S*

Dr Litman is professor in bioinformatics. He holds a Master in Human Biology engineering in chemistry and a PhD in multi drug resistance, inventing the p-glycoprotein. He is affiliated as professor at University of Copenhagen and act as advisor to Columbia University, Editor in Chief of the journal Open Life Sciences, and serves as Principal Senior Scientist at LEO Pharma.



# AVX420 – is a Compound with many strengths

Our goal is to complete the pre-clinical work and initiate, phase 1 first-in-man

## AVX420 Compound Strengths

- AVX-molecules in clinic have previously shown a very favorable safety profile
- AVX420 in vivo has compared to other treatments shown on par efficacy but superior safety
- De-novo mode-of-action likely to be a very attractive compound for supreme efficacy and safety
- Biomarker for potential responder



AVX420 is likely to be designated fast-track priority review and breakthrough designation and/or Orphan Drug designation

## AVX420 a strong opportunity



### Intellectual Properties

AVX420 with strong patent coverage with **market exclusivity beyond 2040**



### Chemistry, Manufacturing and Controls (CMC)

**Proprietary formulation 3-step** synthesis of AVX420



### Oncologists

Increased clinical rational as cPLA2a inhibition **synergizes** with radiation or chemotherapeutic agents



### Pharma companies

Opportunity to **expand the market**, as very few drugs are effective for TNBC and ALL

The patent coverage is beyond 2040 and it includes composition of matter patent, method of use patents for cancer conditions and a new patent for a new formulation.

## Further opportunities with the proprietary formulation

AVX420 is intended for intravenous administration, and a new state of the art nano formulation for AVX420 is currently being developed for clinical use in collaboration with SINTEF (a technical research institute in Norway), and where we are seeking financial support from the Norwegian Research Council. Recent and highly promising studies in leukemia with AVX420, strongly support further development of AVX420 into an efficient and safe treatment of several cancers to the benefit of patients suffering from cancer where the treatment is insufficient.



# Next steps, financing & exit strategy

## Roadmap until 2026

2023 H1: Complete *in silico* work for optimized formulation work and initiate formulation development

2023 H2: Generate *in vivo* PoC for final clinical indication

**2024 H1:** Finalize intravenous or oral formulation development for clinical use

2024 H2: Complete mandatory preclinical testing to demonstrate that AVX420 is safe for testing in humans

**2025:** First patient in phase 1 clinical testing in cancer patients

**2027:** Key results of phase 1 clinical testing in cancer patients

## Capital Demand

### Pre-clinic

- Total capital requirement for completion of the pre-clinic and formulation for administration to humans totals 33.0 mSEK.

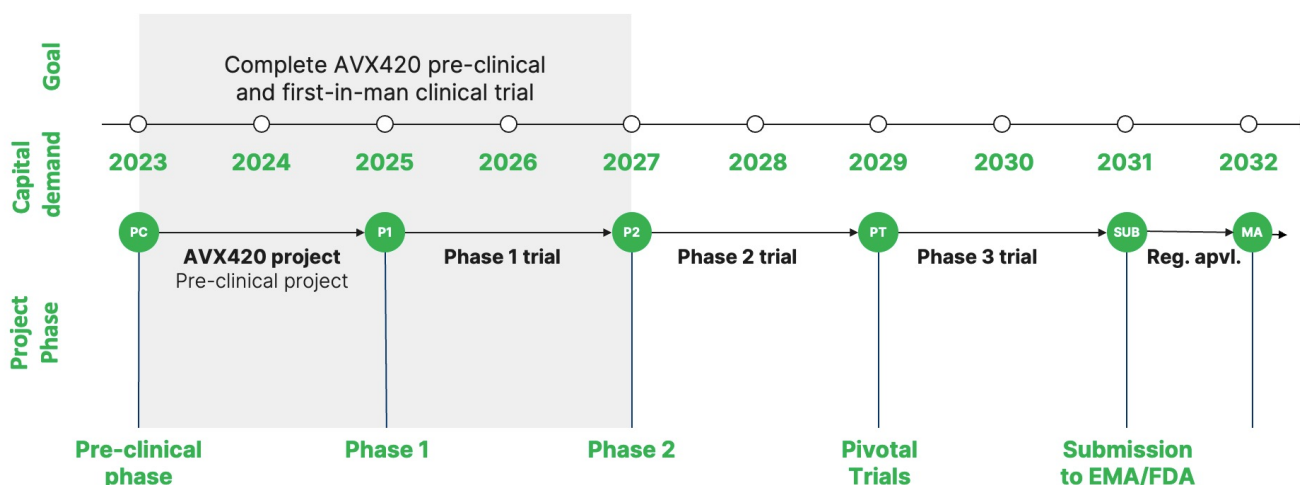
- The company has applied for 16.2 mSEK in research support from the Norwegian Research Council. A response to the application is expected end of 2023. If the research support is granted the remaining financing need is 9.1 mSEK.

### Phase 1 trial

- The total capital requirement for the implementation and completion of the phase 1 study amounts to 45 mNOK. - The goal is to identify a VC or co-development partner for financing the phase 1 study.

## Exit strategy

If the phase 1 trial reaches positive safety outcomes and signs of efficacy, Avexxin Oncology AS believe that a significant value of the asset will be in scope and we may aim for an early and attractive exit.



# Management and Board of Directors

- Experienced team with a strong track record, broad Nordic outreach and key competences



**John R. Zibert**

## Chief Executive Officer

- Extensive experience in drug discovery and development
- Chief Medical Officer at Coegin Pharma AB
- Former founder and CEO at the digital CRO Studies&Me, Chief Medical Officer at LEO Innovation Lab, Head of Medical Affairs EU+ LEO Pharma A/S.
- Ph.D. in immunology, M.Sc. human biology / medicine, with academic focus within Dermatology, Oncology, Cancer Biology, and digital health solutions
- Vast experience in clinical study design and execution, dermatology, oncology, research and development, innovation processes and medical affairs.



**Berit Johansen**

## Chief Scientific Officer

- Professor Norwegian University of Science and Technology (NTNU), Ph.D. in Molecular Genetics.
- Vast experience in molecular biology, inflammation and cancer research.
- Inventor of AVX420 and other AVX-derivatives
- CSO Coegin Pharma AB
- World leading researcher in academia University of Trondheim, Harvard Medical School, UC Sandiego and with experience from the pharmaceutical industry Biogen Research Corporation, Cambridge, USA, and Unigen, Trondheim, Norway



**Tore Duvold**

## Chairman of the Board

- Extensive experience in biotech/pharma industries
- CEO Coegin Pharma AB
- SVP and head of research, early development and patent at LEO Pharma
- CEO and co-founder of Aker Biopharma, CEO and Board Member of Coegin Pharma.
- Ex CEO of Innovation Fund Denmark.
- Associated partner at Copenhagen Institute for Futures Studies



**Erlend P. Skagseth**

## Board Member

- Currently, Managing Partner, Sarsia Seed AS.
- Former experience from Christian Mikkelsen Research, Forinnova, and Sarsia Innovation
- Vast experience in turnarounds, licensing and exits.
- Board Member of Coegin Pharma AB



**Thoas Fioretos**

## Board Member

- Leading expert in the field of leukemia
- Professor at the Department of Clinical Genetics at Lund University
- Co-founder & Board Member of Cantargia AB
- Co-founder and Board Member of Qlucore AB
- Vast experience in cancer research with a focus on leukemia
- Board Member of Coegin Pharma AB



# Key publications

Ortner, V. K., Johansen, B., Kilov, K., Mondragón, A. C., Duvold, T., Kihl, J.R. Zibert & Haedersdal, M. The Copenhagen Actinic Keratosis Study (COAKS). A decentralised clinical trial to evaluate tolerability, safety and efficacy of daily field-directed topical treatment with cytosolic phospholipase A2 inhibitor, AVX001, in participants with actinic keratosis: protocol for a randomised controlled phase I/IIa trial. *BMJ open*, 12(10), 2022, e061012.

Ashcroft FJ, Mahammad N, Midtun Flatekvål H, Jullumstrø Feuerherm A, Johansen B. *cPLA2 $\alpha$  Enzyme Inhibition Attenuates Inflammation and Keratinocyte Proliferation. Biomolecules.* 2020 Oct 2;10(10):1402. [LINK](#)

Mahammad N, Ashcroft FJ, Feuerherm AJ, Elsaadi S, Vandsemb EN, Børset M, Johansen B. *Inhibition of Cytosolic Phospholipase A2 $\alpha$  Induces Apoptosis in Multiple Myeloma Cells. Molecules.* 2021 Dec 9;26(24):7447. [LINK](#)

Feuerherm AJ, Dennis EA, Johansen B. *Cytosolic group IVA phospholipase A2 inhibitors, AVX001 and AVX002, ameliorate collagen-induced arthritis. Arthritis Res Ther.* 2019 Jan 21;21(1):29. [LINK](#)

Omland SH, Habicht A, Damsbo P, Wilms J, Johansen B., Gniadecki R. *A randomized, double-blind, placebo-controlled, dose-escalation first-in-man study (phase 0) to assess the safety and efficacy of topical cytosolic phospholipase A2 inhibitor, AVX001, in patients with mild to moderate plaque psoriasis. J Eur Acad Dermatol Venereol.* 2017 Jul;31(7):1161-1167. [LINK](#)

Kim E, Kim J, Maelandsmo GM, Johansen B., Moestue SA. *Anti-angiogenic therapy affects the relationship between tumor vascular structure and function: A correlation study between micro-computed tomography angiography and dynamic contrast enhanced MRI. Magn Reson Med.* 2017 Oct;78(4):1513-1522. [LINK](#)

Kim E, Tunset HM, Cebulla J, Vettukattil R, Helgesen H, Feuerherm AJ, Engebråten O, Maelandsmo GM, Johansen B., Moestue SA. *Anti-vascular effects of the cytosolic phospholipase A2 inhibitor AVX235 in a patient-derived basal-like breast cancer model. BMC Cancer.* 2016 Mar 7;16:191. [LINK](#)

Sommerfelt RM, Feuerherm AJ, Jones K, Johansen B. *Cytosolic phospholipase A2 regulates TNF-induced production of joint destructive effectors in synoviocytes. PLoS One.* 2013 Dec 12;8(12):e83555. [LINK](#)

Huwiler A, Feuerherm AJ, Sakem B, Pastukhov O, Filipenko I, Nguyen T, Johansen B. *The  $\omega$ 3-polyunsaturated fatty acid analogues AVX001 and AVX002 directly inhibit cytosolic phospholipase A(2) and suppress PGE(2) formation in mesangial cells. Br J Pharmacol.* 2012 Dec;167(8):1691-701. [LINK](#)

A close-up photograph of a hand holding a red awareness ribbon. The hand is positioned in the lower center, with fingers wrapped around the ribbon. The ribbon is looped and draped, creating a classic awareness ribbon shape. The background is a soft-focus pink shirt with a lace detail on the sleeve. The overall tone is warm and supportive.

# Thank you!

**John Zibert**  
**CEO**

M: +45-6176-2291

[jrz@coeginpharma.com](mailto:jrz@coeginpharma.com)