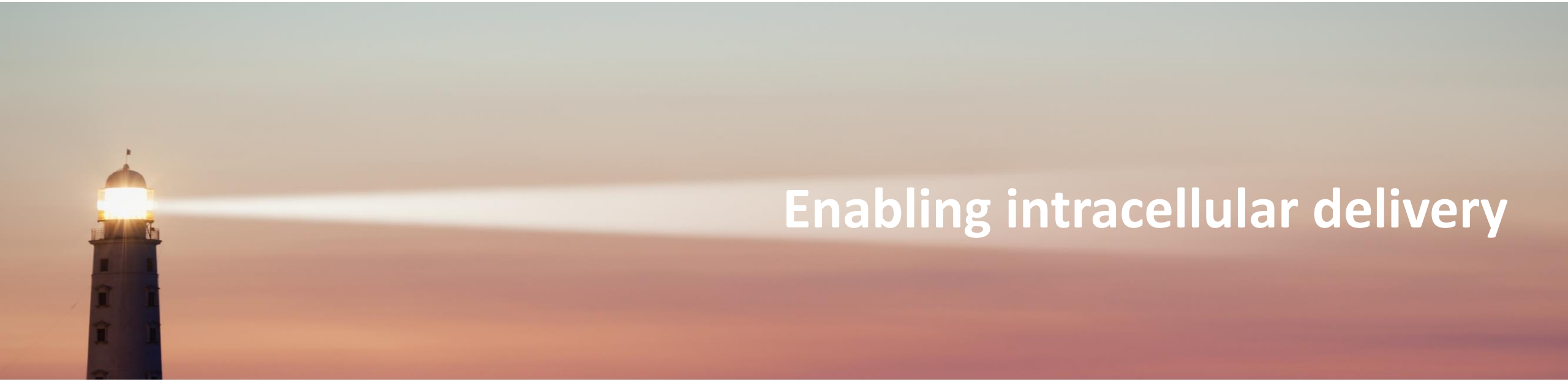
PCI Biotech



Company presentation
November 2020

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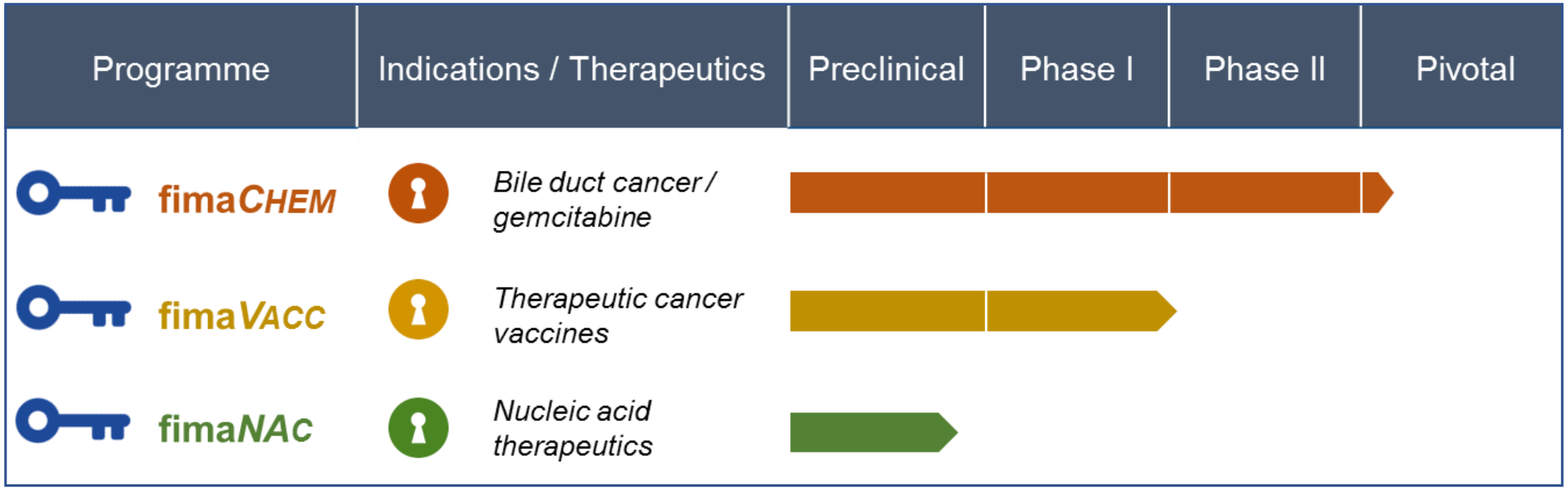
PCI Biotech

- Enabling intracellular delivery

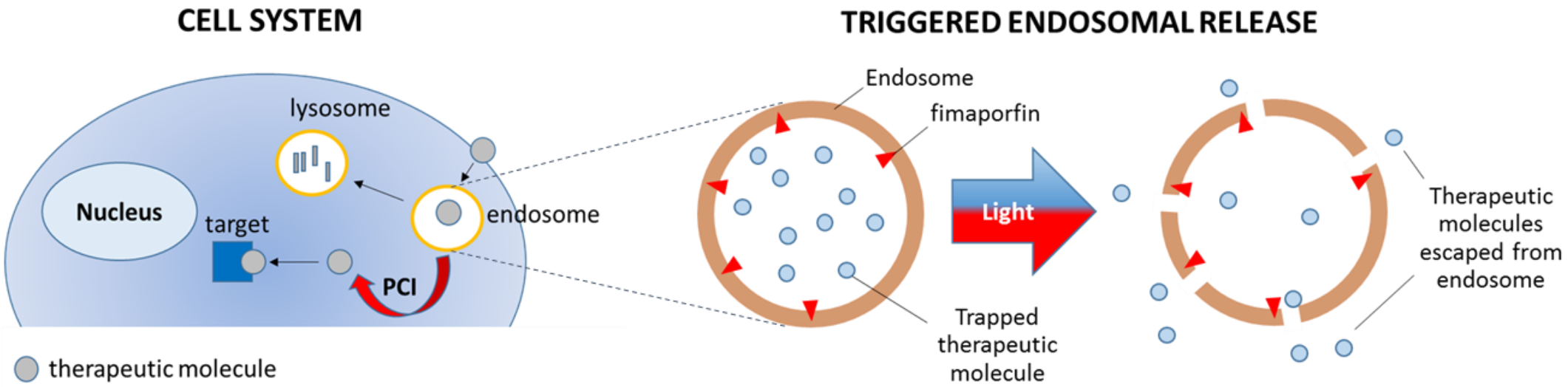
  - **A listed (PCIB:NO) biotech company with an oncology focused pipeline**
  - **Photochemical internalisation ("PCI") technology**
  - **One platform technology and three well differentiated assets**



PCI TECHNOLOGY

- Enabling intracellular delivery

Mode of action



- Small molecules (chemotherapeutics – **fima *CHEM***)
- Antigens (peptides/proteins – **fima *VACC***)
- Nucleic acids (mRNA, RNAi – **fima *NAC***)

Trapped therapeutic molecules are released inside cells

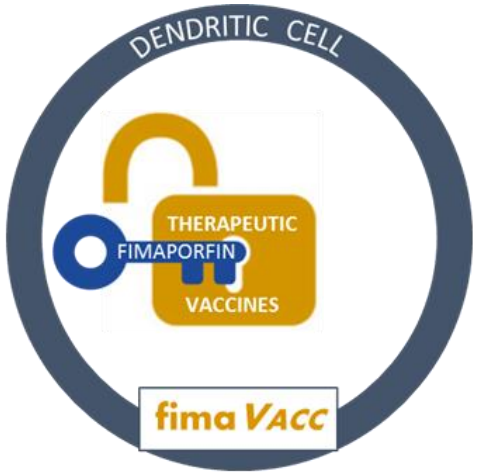
- The PCI technology contains the fimaporfin substance and light
- Fimaporfin is designed to localise on the inside of endosomal membranes
- Light activates fimaporfin
- Endosomal membranes inside cells are affected
- Resulting in endosomal escape of trapped therapeutic molecules

PCI TECHNOLOGY

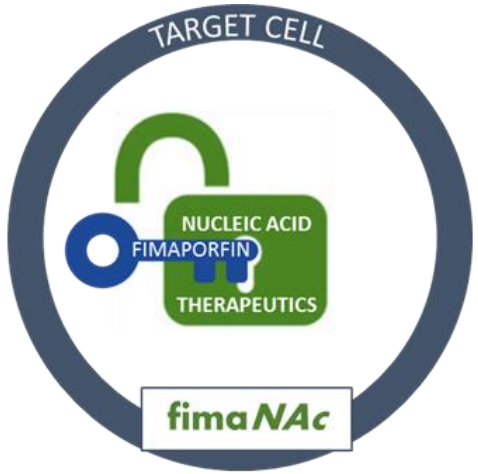
- Broad application

The solution to a key challenge for several modalities

Enabling approved drugs to fulfil unmet local treatment need



Enhancing cellular immune responses important for therapeutic effect



Providing a delivery solution for nucleic acid therapeutics

PCI Biotech at a Glance

Background

- Biopharmaceutical company focusing on development and commercialisation of novel therapies for the treatment of cancer
- Leverages Photochemical Internalisation ('PCI') tech, originating from the Oslo University Hospital – the Radium Hospital
- Platform technology with three programmes targeting an attractive and growing oncology market
- Lead programme, **fimaCHEM**, is a pivotal phase orphan designated (EU & US) first-in-class photochemical internalisation product for treatment of extrahepatic bile duct caner – a disease without approved drugs

History and milestones

2008 - 2017

- Listing on Oslo Axess
- Phase I study (first in man) completed, demonstrating safety and promising efficacy of **fimaCHEM**, published in Lancet Oncology*
- First patient treated Ph Ib bile duct cancer study with **fimaCHEM**
- Focus on **fimaVACC** amplified, IP generation
- First pre-clinical collaboration agreement for **fimaNAc**
- Early encouraging signs of efficacy in Phase Ib bile duct cancer study with **fimaCHEM**
- Orphan drug status in EU for **fimaCHEM** in bile duct cancer
- First subject dosed in the Phase I study with **fimaVACC**
- Further **fimaNAc** collaborations
- **fimaCHEM** granted Orphan drug status in bile duct cancer in US
- Important commercialisation guidance from regulators for **fimaCHEM**
- Promising initial clinical results for the **fimaVACC** programme
- Encouraging survival data from Ph Ib in bile duct cancer with **fimaCHEM**

2018 - 2020

- Successful transfer from Oslo Axess to Oslo Børs main list
- Completion of the full Ph Ib study in **fimaCHEM** with successful safety read-out for repeated treatment
- Funding for initiation of pivotal **fimaCHEM** study ("RELEASE") in bile duct cancer
- First patient enrolled into the **fimaCHEM** RELEASE study with registration intent
- Successful PoC for **fimaVACC** with enhanced immune responses
- Important **fimaVACC** patents for US granted
- Promising response on patent application for mRNA delivery with **fimaNAc**

Source: PCI Biotech
* Lancet Oncology (2016) 17(9): p1217–1229

MANAGEMENT TEAM

Dr. Per Walday, CEO

- Chief Executive Officer since 2008
- Previously Global Head of Project Management at GE Healthcare
- Other experience includes manager positions in Nycomed Imaging/ Amersham Health
- Ph.D. Physiology, University of Oslo

Dr. Anders Høgset, CSO

- Chief Scientific Officer since 2001 (deputy CEO 2004-2008)
- Previously Senior Scientist at Radiumhospitalet developing the PCI technology
- Ph.D. Biochemistry, University of Oslo

Dr. Amir Snapir, CMO

- Chief Medical Officer since May 2020
- Most recently Director Rare Disease Development at Orion Pharma
- MD, Univ. of Tel Aviv, Israel
- Ph.D., Univ. of Turku, Finland

Kristin Eivindvik, CDO

- Chief Development Officer since 2018
- Formerly held the position as VP Business Operations at Alertis Medical. Other experience from GE Healthcare
- MSc. Pharmacy, University of Oslo

Ludovic Robin, CBO

- Chief Business Officer since May 2020
- Previous business development experience include pharma (Shire) and biotech (Advicenne)
- PharmD., MSc in Industrial Pharmacy; Lyon, France
- MBA, HEC Paris, France

Ronny Skuggedal, CFO

- Chief Financial Officer since 2013
- State Authorised Public Accountant Norway
- 12 years experience from auditing and advisory services, PwC
- MSc. Economics and Business Administration, NHH and Master Professional Accountancy, BI NBS

Board of Directors

Dr. Hans Peter Bøhn, Chairman

- Chairman since 2016
- 12 years experience from various management positions with Nycomed Imaging
- Other experience includes being a financial analyst, covering life science companies

Dr. Christina Herder, Director

- Executive Vice President, Chief Operating Officer at Medivir AB
- Previous experience includes management positions with Modus Therapeutics and SOBI
- Board member of Idogen AB

Prof. Andrew Hughes, Director

- Strategy Director of the experimental cancer medicine at Manchester Cancer Research Centre, UK
- Broad experience from AstraZeneca, most recently Global Vice President of Early Clinical Development
- Clinical investigator on over 200 clinical trials and leading over 50 research and early development programmes

Dr. Lars Viksmoen, Director

- > 25 years broad, international experience from pharma, biotech and medtech industry
- Worked 10 years as a surgeon prior to his executive career
- Previous experience include Merck and GN ReSound

Hilde Furberg, Director

- > 35 years broad, international experience from sales, marketing, strategy and management in pharma and biotech industry
- Most recently European Head of Rare Diseases for Sanofi Genzyme
- Board member of Calliditas and Tappin

INVESTMENT HIGHLIGHTS

Broad platform technology	PCI is a platform technology with three programmes targeting an attractive and growing oncology market, with a clear path to a high unmet need orphan oncology market for the lead candidate
Advanced lead product candidate	**fima CHEM** – Amphinex® is an orphan designated (EU & US) first-in-class product candidate in pivotal development for treatment of bile duct cancer – a disease without approved drugs
Encouraging clinical results	Positive early signs of tumour response in a first-in-man study published in Lancet Oncology, and in a Phase I study specifically targeting bile duct cancer – encouraging survival data
Defined development strategy	Development strategy for lead candidate established based on thorough regulatory discussions with FDA and EMA – a single randomised pivotal study with accelerated/conditional approval potential
Pipeline opportunities	**fima VACC** – a clinical stage vaccination technology with encouraging cellular immune responses **fima NAc** – a preclinical gene therapy delivery solution with established key player collaborations
Experienced leadership	Management team, Board of Directors and advisors with extensive pharmaceutical industry experience across a range of medical development and commercial areas

Three Well-Defined Development Programmes

fimaCHEM

The
RELEASE
trial with registration intent enrolled first patient May 2019

- First-in-man study published in Lancet Oncology[1]
- Encouraging efficacy data from Phase I in inoperable extrahepatic bile duct cancer
- Pivotal phase initiated, with potential for approval based on interim read
- Orphan disease with high price potential

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Proof of concept with
ENHANCED
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- Expected market growth largely driven by therapeutic vaccine combinations with checkpoint inhibitors
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HURDLE IS DELIVERY
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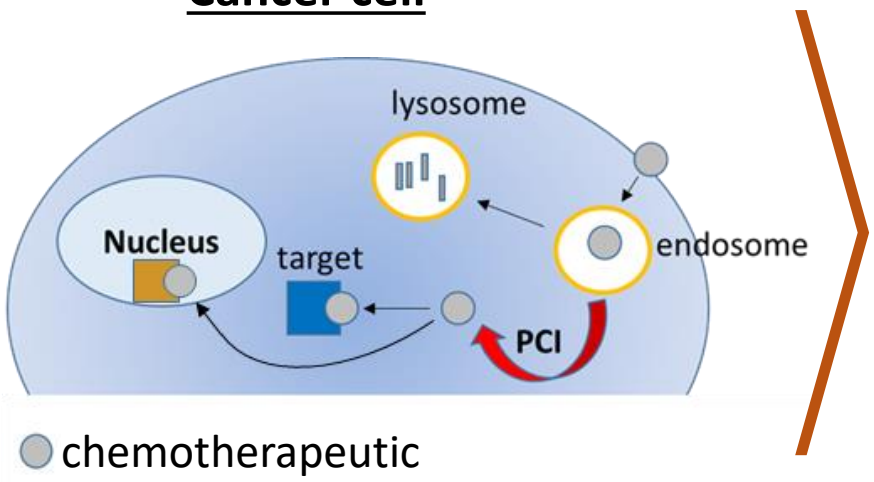
- Massive investments and high expectations for nucleic acids within the pharmaceutical industry
- Strong preclinical data set
- Research collaborations with several players
- Aim is to out-license the technology on non-/semi-exclusive basis

1) Lancet Oncology (2016) **17**(9): p1217–1229

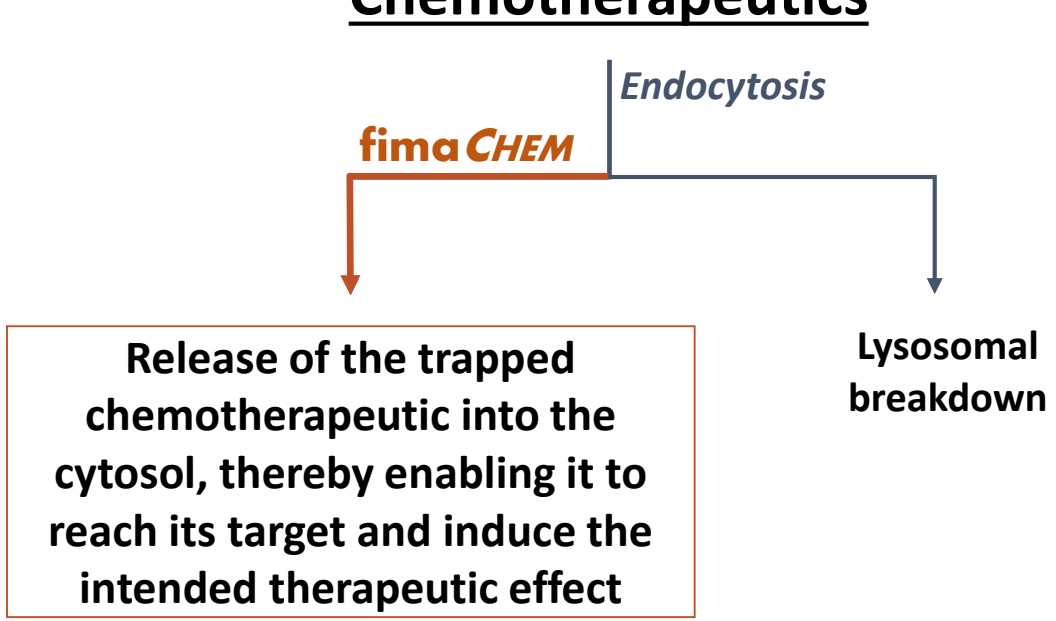
PCI TECHNOLOGY

- **fima CHEM** – mode of action



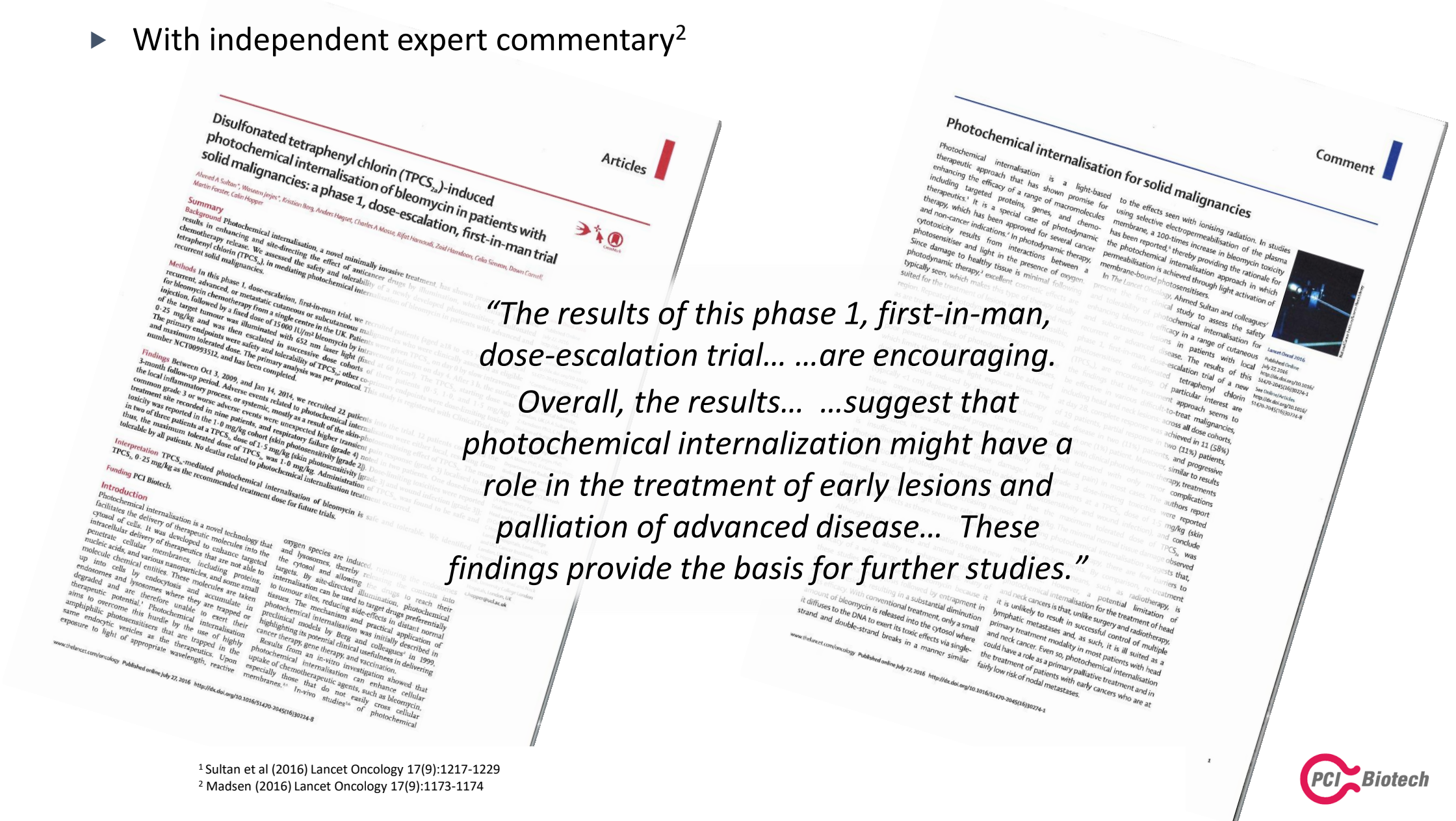
The intracellular trafficking of chemotherapeutics is not well characterised for many products, but it is known that endocytotic uptake and/or sequestering into endosomes can lead to high endosomal concentrations.

fima CHEM can release biologically active chemotherapeutics that are trapped in endosomes, thereby enabling them to reach their target before being inactivated in lysosomes. Shown with a number of key chemotherapeutics in preclinical models.



First-In-Man Study Published in Lancet Oncology[1]

- With independent expert commentary[2]



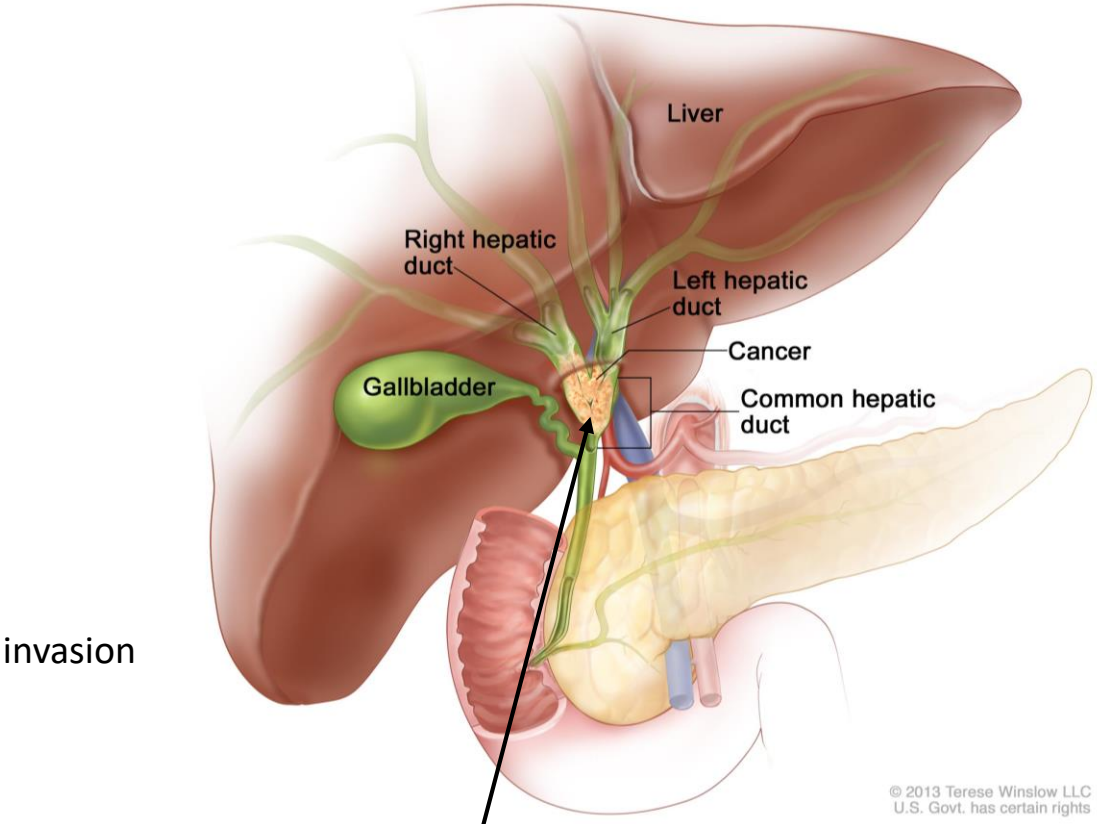
"The results of this phase 1, first-in-man, dose-escalation trial… …are encouraging. Overall, the results… …suggest that photochemical internalization might have a role in the treatment of early lesions and palliation of advanced disease… These findings provide the basis for further studies."

[1] Sultan et al (2016) Lancet Oncology 17(9):1217-1229
[2] Madsen (2016) Lancet Oncology 17(9):1173-1174

BILE DUCT CANCER (CHOLANGIOCARCINOMA, CCA)

- Life threatening and poor outcomes

- **Survival: Poor Prognosis**
  - 5 years survival (Europe), 5% to 17% depending on CCA [1]
- **Cholangiocarcinoma includes:**
  - Intra-hepatic tumours (iCCA): 10%[1]
  - Extra-hepatic tumours (eCCA)
    - Perihilar/Klatskin tumours, (pCCA): 60-70%[1]
    - Distal tumours dCCA: 20-30%[1]
- **Classification based on different evolving systems[2]:**
  - Primary tumours, localisation, size/number, accessibility, vascular invasion
  - Regional lymphatic nodes and distant metastasis
- **Diagnosis: no straightforward clinical features**
  - Peak age for CCA is the seventh decade
  - Late stage and rapid deterioration



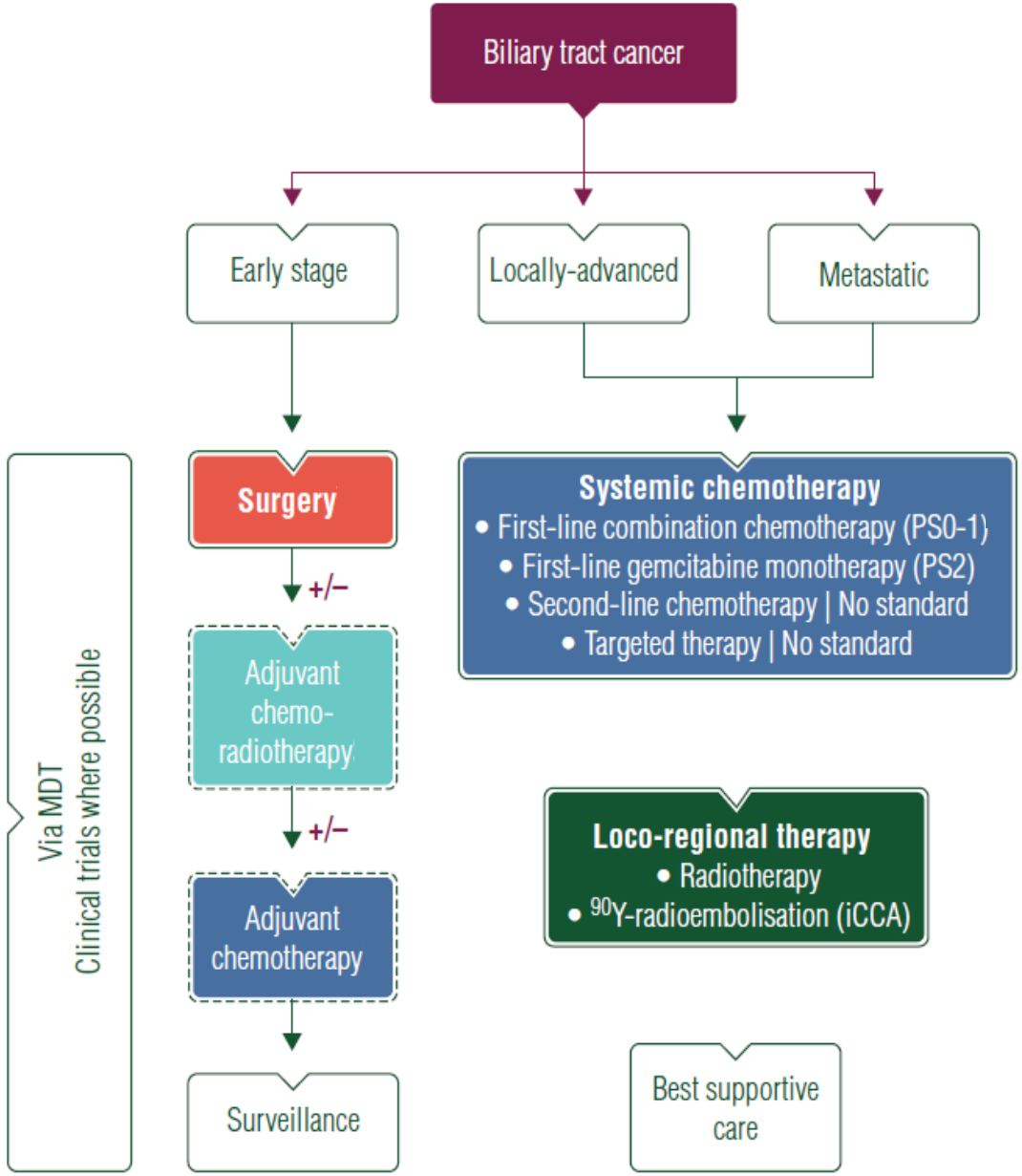
Perihilar bile duct cancer is the main target for PCI treatment

1) Rare care project 2) ESMO clinical practices guidelines, 2016

BILE DUCT CANCER

- A population well segmented

- **fimaCHEM : A clear Medical positioning** [1]
  - First line treatment for inoperable extrahepatic CCA
- **Incidence rate** [2]**:**
  - US CCA: 1.6/100,000 /year; extrahepatic CCA: 0.86/100,000/year
  - EU5 CCA: 2.4/100,000/year; extrahepatic CCA: 1.4/100,000/year
- **Resectable CCA**[3]**:**
  - Less than one-third of the patients are classified as having a resectable tumour at the time of diagnosis
- **fimaCHEM estimated eligible population**[4]**:**
  - US & Europe: approx. 3,000 patients/year
  - Asia: >4,000 patients/year



1) ISMO clinical practices guidelines, 2016 2) Rarecare project 3) Banales & coll, experts consensus document,(ENS-CCA), 2016 4) PCIB internal analysis

fimaCHEM

- An excellent fit with medical need and existing treatments

  - **Efficacy:** mOS[1] of **22.8 months** at selected dose (cohort IV) in Phase I dose-escalation (vs. **11-12 months**[2] with SoC for inoperable CCA treatments)
  - **Easy to use:** Illumination through standard endoscopic methods compatible with endoscopic stenting for palliative biliary drainage
  - **Positioning:** Enhances recommended first-line chemotherapy and boosts effect locally, where it is most needed
  - **Protection:** Granted EU and US Orphan Drug designation offers 7 to 10 years exclusivity
  - **Competition:** Precision/gene/small molecules in clinical development are mainly iCCA targeted or second line
  - **Premium price:** Mean price for OD in the US is $K150 (median $K109)[3]

1) Median overall survival 2) New England Journal of Medicine 2010;362:1273-8 3) EvaluatePharma® Orphan Drug Report 2019

BILE DUCT CANCER – PHASE I STUDY

- Safety and pivotal dose established in Phase I

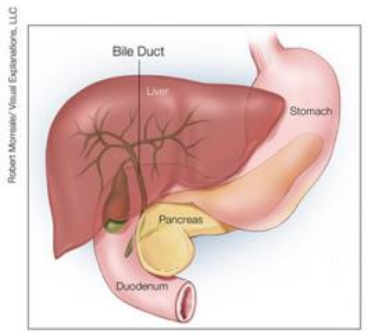
- **Dose escalation with one fimaCHEM treatment, followed by an extension part for safety of two fimaCHEM treatments**

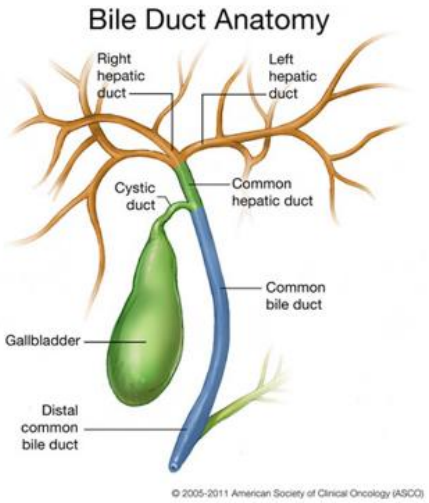
Dose escalation part (N=16)

- Standard 3+3 design, with one fimaCHEM treatment
- 4 dose escalation cohorts
- No Dose-Limiting Toxicity (DLT) were observed
- No unexpected safety concerns
- Serious Adverse Events (SAEs) primarily cholangitis, similar to the frequency, severity and pattern reported in the literature for perihilar bile duct cancer
- Transient light sensitivity from fimaCHEM treatment considered acceptable in context of the encouraging efficacy results

Extension part (N=7)

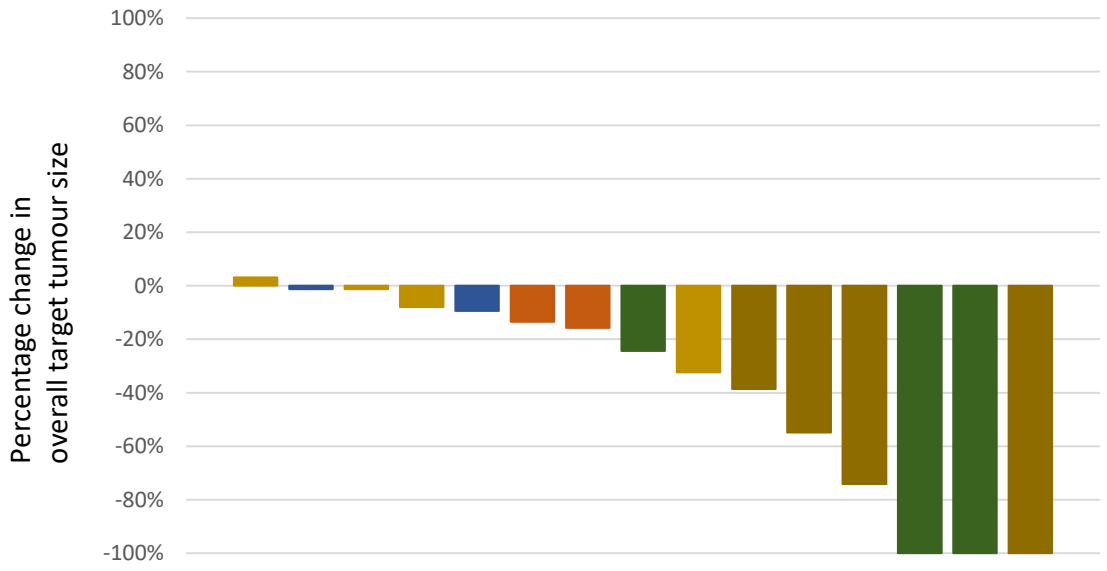
- Explored safety of two fimaCHEM treatments (N=5)
- Same dose as dose escalation cohort IV, but up to two treatments
- No new safety signals





BILE DUCT CANCER – PHASE I RESULTS

- Best Overall Response - patients with measurable disease in all cohorts (N=15)
  - Dominated by significant target tumour reduction in the first 6 months
  - >20% reduction in tumour size was observed in 17 out of the 19 identified target lesions in cohorts 3 and 4 at 6 months; of these, 12 lesions had become undetectable (centralised read)



		Dose: fimaporfin (mg/kg)	Dose: Red light (J/cm)
Cohort I	(n=2)	0.06	15
Cohort II	(n=2)	0.06	30
Cohort III	(n=3)	0.12	30
Cohort IV	(n=4)	0.25	30
Extension	(n=4)	0.25	30

[a] mOS – median overall survival

BILE DUCT CANCER – PHASE I DOSE-ESCALATION STUDY

- Positive early signs of efficacy – median Overall Survival of 22.8 months at selected dose

Parameters	Cohort IV (N=6)	Phase I – all dose-escalation cohorts (N=16)
Objective Response Rate (ORR)	3/5 patients (2 PR; 1 CR)	4/12 patients (2 PR; 2 CR)
Median Overall Survival (mOS)	22.8 months	16.1 months

- Encouraging tumour response and survival in Cohort IV
- Half of the patients in Cohort IV survived >30 months
- Cohort IV dose has been selected for the pivotal RELEASE study
- Results paved the way for a study with interim analysis for potential accelerated approval
- Safety of two treatments explored in a Phase I Extension – up to two treatments allowed in RELEASE

BILE DUCT CANCER – RELEASE STUDY

- Pivotal study with potential accelerated/conditional approval based on interim analysis

First line treatment for patients with inoperable extraheptic bile duct cancer, without brain or bone metastases

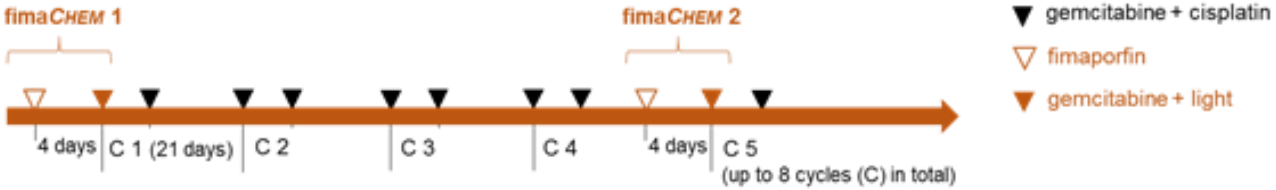
(N=186)
1:1 randomisation

Control (N=93)

Standard of care (SoC):
gemcitabine + cisplatin
up to 8 cycles

Experimental (N=93)

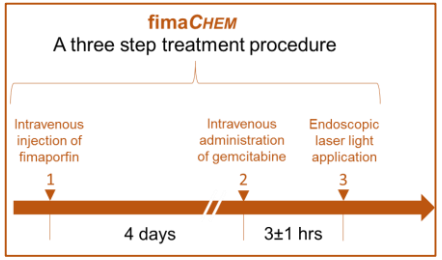
Up to 2 doses of fimaCHEM +
Standard of Care (SoC)
up to 8 cycles



- Rare disease, more common in Asia
- No approved treatment
- Limited development pipeline

- >50 clinical sites in EU, Asia & US
- 12 European countries, 2 Asian + USA

- **fimaCHEM** in addition to current Standard of Care
- A three-step treatment procedure
- Up to two **fimaCHEM** treatments



BILE DUCT CANCER – RELEASE STUDY

- Endpoints, milestones and timelines

Endpoints:

Interim analysis: Primary Endpoint: Objective Response Rate (ORR)	• Orphan drug designation in EU & USA – potential accelerated approval
Final analysis: Primary endpoint: Progression free survival (PFS) Key secondary endpoint: Overall survival (OS)	• Single randomised trial considered sufficient based on interaction with US and EU regulatory authorities

Milestones and timelines:

First patient enrolled in Europe in May 2019 and in Asia in October 2020	• First patient in the US expected 1H 2021
Seamless safety review by IDMC when 8 patients have undergone two fimaCHEM treatments plus regular reviews (but no formal futility stop)	• IDMC = Independent Data Monitoring Committee
Interim analysis of 12-weeks follow-up data from 120 enrolled patients	• Interim analysis expected 2H 2022 – 1H 2023 (tbd pending further development of the COVID-19 pandemic)
Timing and format for study conclusion may be impacted by outcome of Interim analysis	• Final analysis expected approximately 2024 (tbd pending further development of the COVID-19 pandemic)

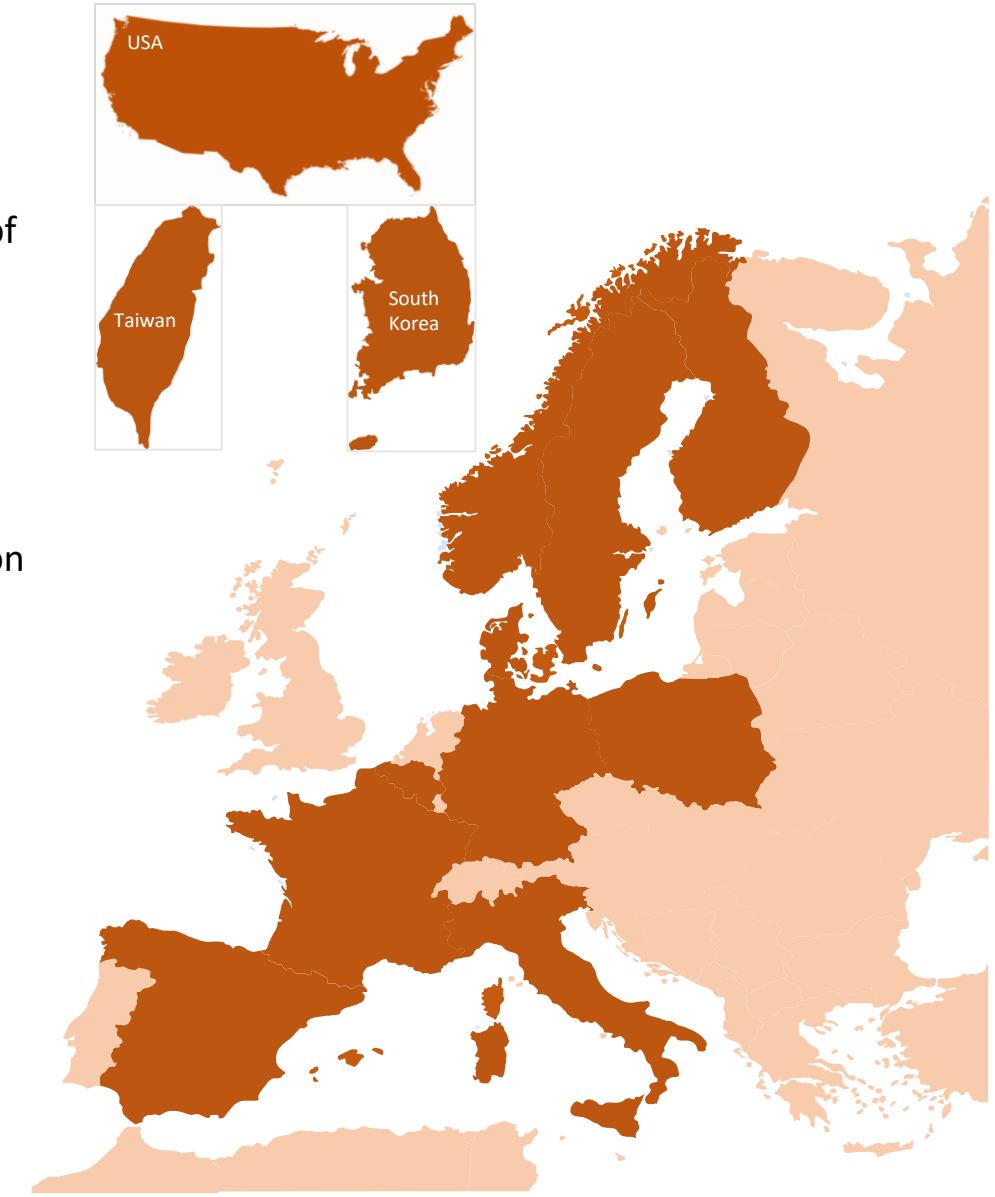
BILE DUCT CANCER – RELEASE STUDY

- Pivotal study progress by October 2020

  - Regulatory and ethics received for South Korea, Taiwan, USA and 10 of 12 planned European countries
  - 45 sites open at Q3 2020 – plan to include >50 sites
  - 6 sites opened in the US
  - 9 sites opened in Asia
  - A complete picture of the consequences of the COVID-19 pandemic on study progress is not yet available
  - Initiatives with the aim to recoup delay COVID-19 induced delays
    - Eligibility criteria modifications – amendment approved in all countries and implemented at almost all sites at Q3 2020
    - Increase number of countries/sites
    - Online outreach to attract patients outside hospital networks

RELEASE communication policy:

- Quarterly updates on
  - No. of country approvals and sites open for enrolment
  - Expected timelines for major milestones
- Other key milestones in press releases
  - E.g. outcome IDMC reviews, clinical result presentations, filing etc.



COMMERCIALISATION CONSIDERATIONS LEAD CANDIDATE

Clinical trials and results	**Pivotal phase orphan designated** (EU & US) **first-in-class** product candidate for treatment of bile duct cancer – a **disease without approved drugs**
	Promising early signs of tumour response and **encouraging survival data** from Phase I pave the way for a single **pivotal registration trial**
Strategy and market	fimaCHEM targeting an **attractive and growing oncology market**, with a clear path to a **high unmet need orphan oncology market**
	Development strategy established based on **thorough regulatory discussions** with FDA and EMA – a single randomised pivotal study with potential **accelerated approval as 1st line treatment**

Progressing development towards the market

Broad platform technology → **Encouraging clinical results** → **Advanced lead product candidate** → **Defined strategy** → **Pipeline opportunities** → **Experienced leadership**

Three Well-Defined Development Programmes

fimaCHEM

The
RELEASE
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- Expected market growth largely driven by therapeutic vaccine combinations with checkpoint inhibitors
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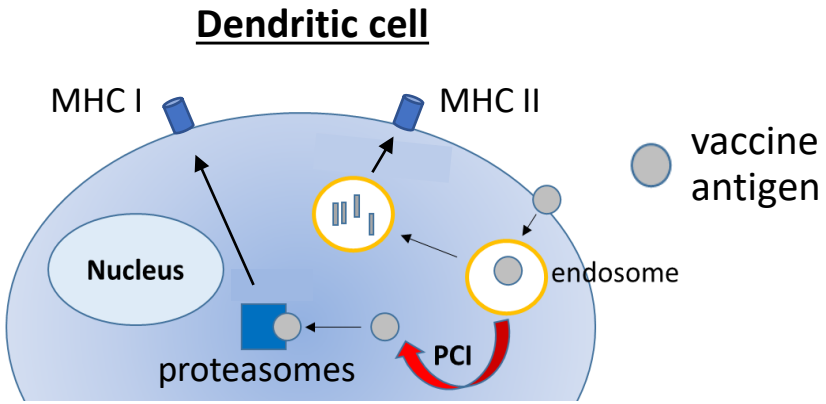
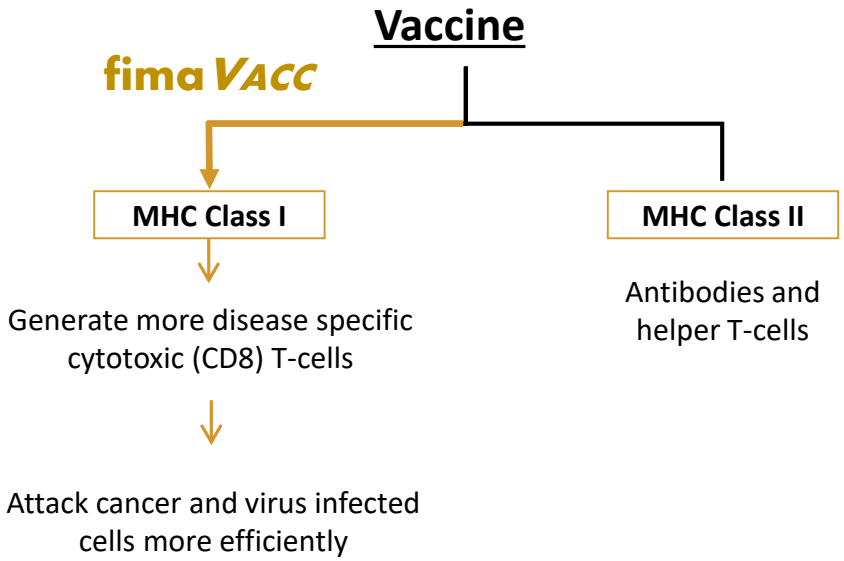
- Massive investments and high expectations for nucleic acids within the pharmaceutical industry
- Strong preclinical data set
- Research collaborations with several players
- Aim is to out-license the technology on non-/semi-exclusive basis

PCI VACCINATION TECHNOLOGY – MODE OF ACTION

- **fima VACC** – vaccination technology





Vaccine antigens are normally presented on MHC class II by dendritic immune cells, which in most instances generates a proper immune response for prophylactic vaccination.

By releasing the trapped antigens into the cell the innovative **fima VACC** technology reroute and enhance the presentation of antigens by the immune cells to MHC class I, which generates a proper immune response for therapeutic vaccination.

Therapeutic immune response is of importance for all cancer vaccines, and vaccines targeting chronic infections.

PCI VACCINATION TECHNOLOGY – STRONG POTENTIAL

- Opportunity to play a key role in enhancing cellular immune response
  - Unique mode of action for CD8 T-cell induction
    - CD8 induction by MHC class I antigen presentation in dendritic cells and macrophages
  - Broad applicability
    - Peptide and protein antigens - prophylactic & therapeutic vaccination
  - Excellent stability of fimaporfin
    - Stable at room temperature in solution and can be autoclaved
  - Strong preclinical data set
    - Clear understanding of mode of action for CD8 induction
  - Completed Phase I clinical study with more than 90 healthy volunteers
    - Safety of intradermal administration established across a wide range of doses
    - Successful clinical proof of concept

Enhancing cellular immune responses important for therapeutic effect

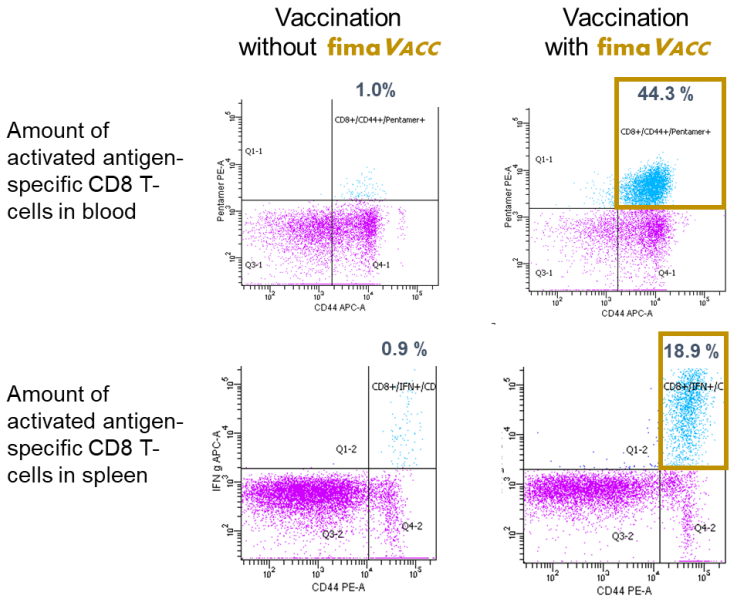
STRONGLY ENHANCES VACCINATION EFFECTS

- Impressive results in relevant animal models

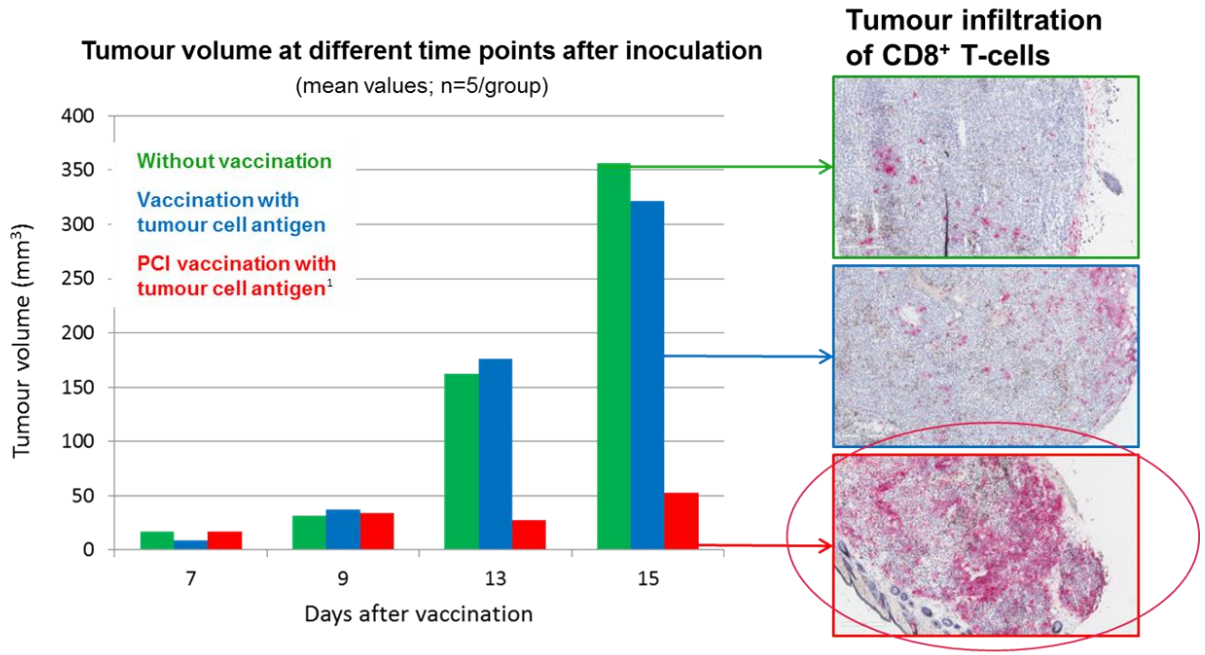
Cytotoxic (CD8) T-cells

- Most important immune cells to fight tumours and difficult to induce with vaccination
- **fima VACC** strongly enhances the ability of vaccines to induce CD8 T-cells

Impressive CD8 response with HPV therapeutic vaccine in mice



Therapeutic fima VACC vaccination with OVA in tumour model (B16-OVA melanoma/OT-1)



Source: PCI Biotech data

PHASE I STUDY IN HEALTHY VOLUNTEERS

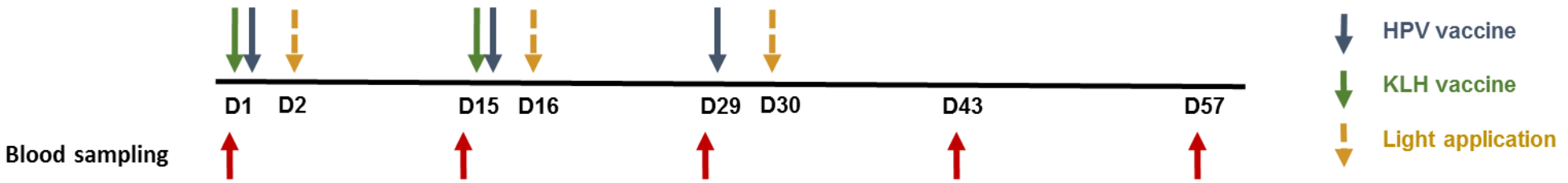
- Overview

Main Objective:

- Determine the safety, tolerability and immune response of **fima VACC** when given as intradermal injections in combination with an adjuvant (Hiltonol) and antigens (KLH and HPV E7 peptides) in healthy subjects

Study Treatments:

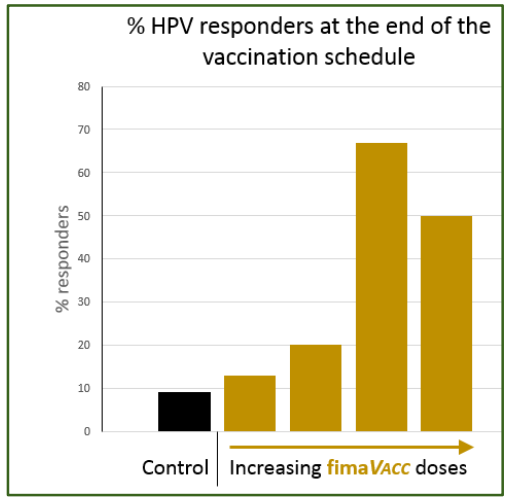
- 6-12 subjects in each cohort – different doses of fimaporfin photosensitiser
- Adjuvant: Hiltonol (poly-ICLC; adjuvant), 50µg
- Control group: Adjuvant + Antigens
- **fima VACC** groups: Adjuvant + Antigens + **fima VACC**
- Intradermal injections with 2 weeks intervals (rotating injection sites)
- Light application 200 sec, 20 (± 4) hours after ID dosing



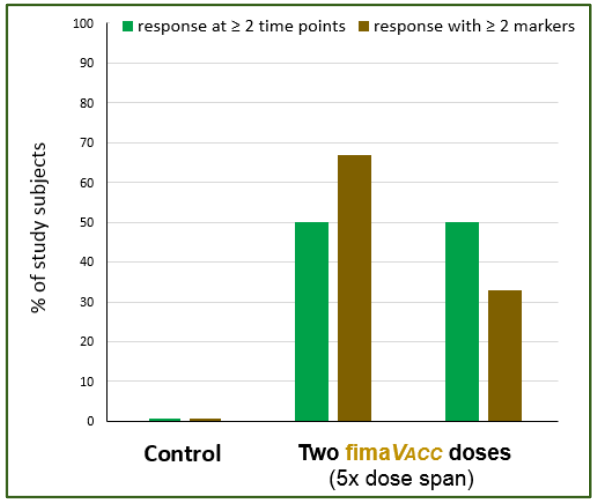
SUCCESSFUL CLINICAL PROOF-OF-CONCEPT

- Phase I study in healthy volunteers shows enhanced immune responses

Higher rate of T-cell responders



More robust CD8 T-cell responses



fima VACC provides:

- ✓ ***Increased number of responders***
- ✓ ***Enhanced T-cell responses***
- ✓ ***Improved T-cell functionality***

Results show that fima VACC induces:

- Substantial increase in number of T-cell responders to HPV E7 peptides
- Clearly enhanced overall T-cell responses
- More robust CD8 T-cell responses, which are notoriously difficult to induce with E7
- Increased functionality of induced CD8 T-cells

Highly sought-after features – especially for therapeutic vaccination against cancer and chronic infections

SOLID PROGRESS OF THE fima VACC PROGRAMME

- Growing robust evidence

  - Positive clinical study results presented at ESMO Immuno-Oncology Congress in December 2019
  - Clinical proof of concept data to be published in scientific journal (in progress)
  - Next step: moving to Phase II with a partner or by ourselves (proof-of-concept in disease setting)

Patented disposable "band-aid-like" device for user-friendly illumination of the vaccination site

Three Well-Defined Development Programmes

fimaCHEM

The
RELEASE
trial with registration intent enrolled first patient May 2019

- First-in-man study published in Lancet Oncology[1]
- Encouraging efficacy data from Phase I in inoperable extrahepatic bile duct cancer
- Pivotal phase initiated, with potential for approval based on interim read
- Orphan disease with high price potential

fimaVACC

Proof of concept with
ENHANCED
immune responses in man

- Expected market growth largely driven by therapeutic vaccine combinations with checkpoint inhibitors
- Features important for therapeutic cancer vaccines demonstrated in healthy volunteers
- Aim is to out-license the technology on non-/semi-exclusive basis – opportunity to develop own vaccination products

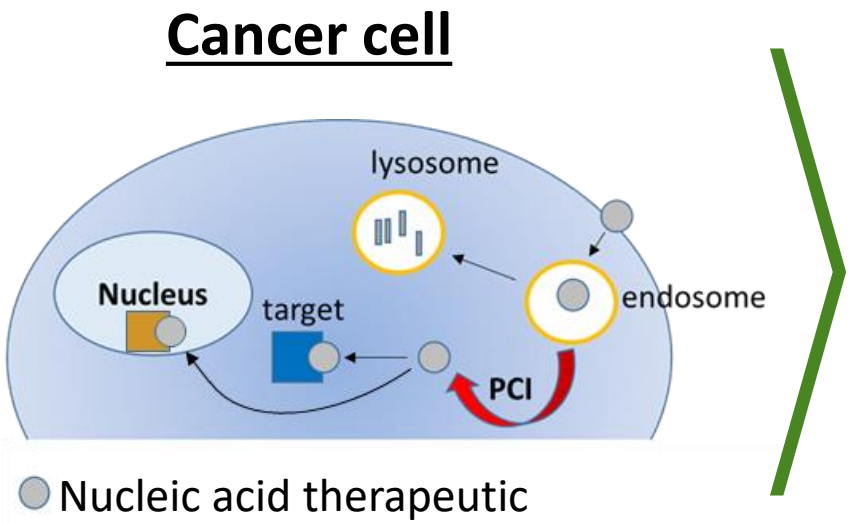
fimaNAc

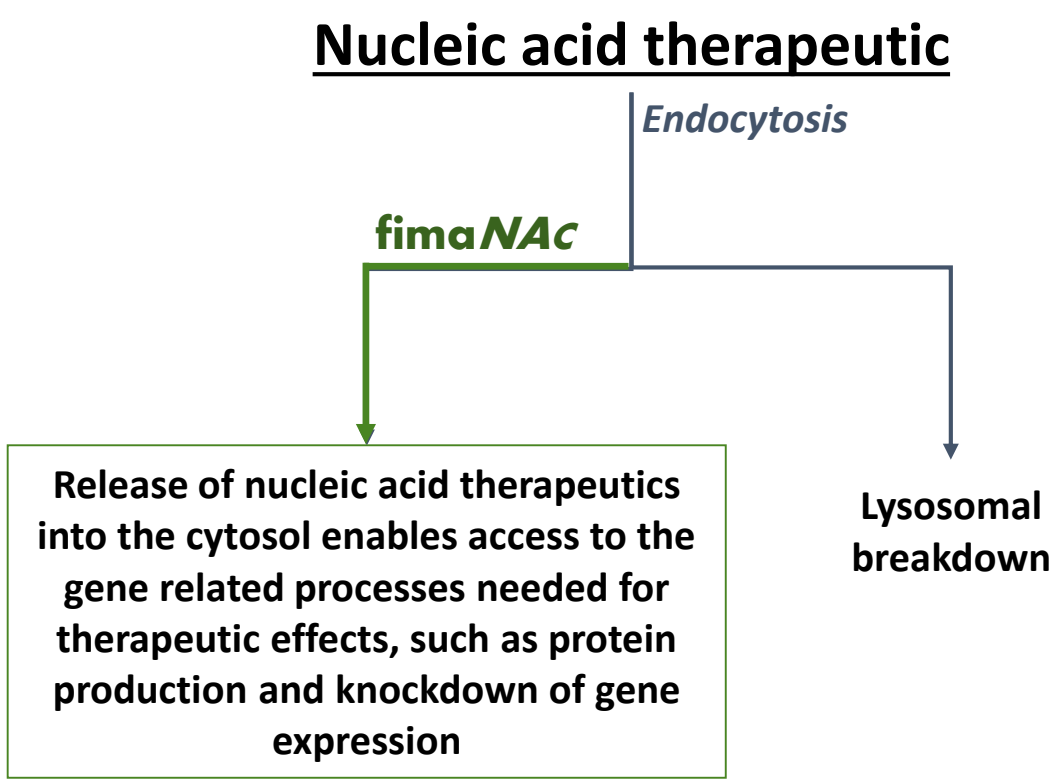
Main
HURDLE IS DELIVERY
into cells

- Massive investments and high expectations for nucleic acids within the pharmaceutical industry
- Strong preclinical data set
- Research collaborations with several players
- Aim is to out-license the technology on non-/semi-exclusive basis

PCI Technology – Mode of Action

- **fimaNAc** – mode of action





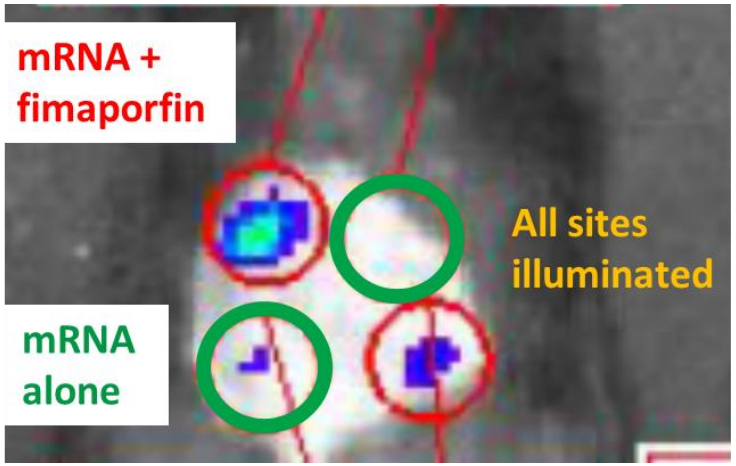
Nucleic acid therapeutics need to enter into the inside of cells to exert their therapeutic effect. Being quite large molecules, they cannot readily pass the cell membrane, but are taken up by endocytosis and thereby trapped in endosomes.

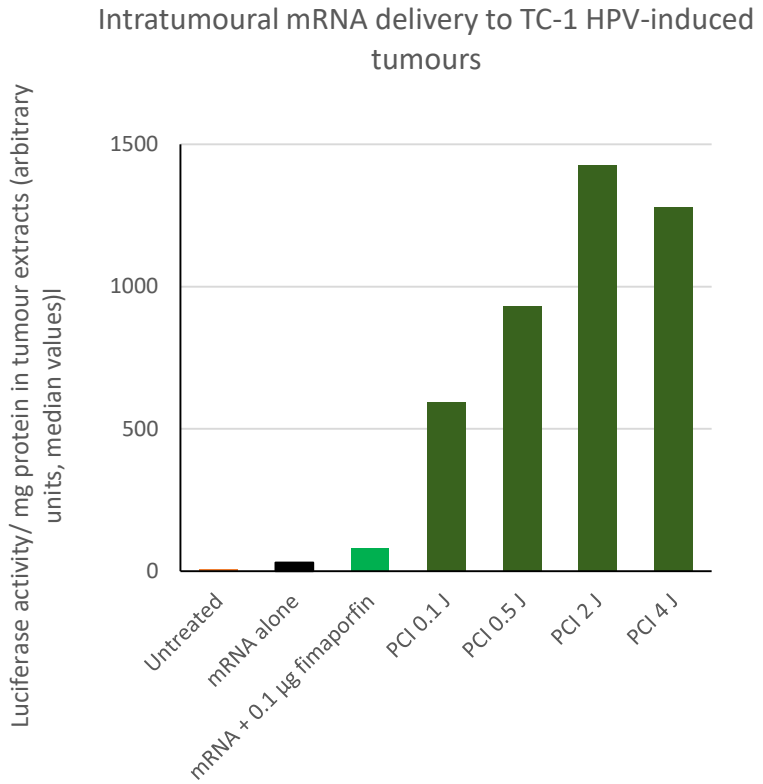
fimaNAc efficiently deliver trapped nucleic acid therapeutics from endosomes into cells.

Enhancing mRNA Delivery

- Strongly enhances delivery of mRNA *in vivo*

  - Luciferase mRNA injected intradermally
  - 2 control sites (mRNA alone) and 2 test sites (mRNA + fimaporfin)
  - All sites illuminated simultaneously
  - Animals injected with luciferin 24 hours after illumination.





  - At best light dose (2 J) nearly 50 x enhancement as compared to naked mRNA alone

VERSATILITY OF fimaNAc

- Delivery of many types of nucleic acid with many different vehicles *in vitro*

Main bottleneck in the field is delivery

- fimaNAc can deliver many types nucleic acids
- Enhancement by fimaNAc is best under conditions favourable for vehicle safety
  - Low ratio of vehicle to nucleic acid
  - Low concentration of vehicle/nucleic acid complex
- Especially advantageous *in vivo*
  - Difficult to achieve a high concentration of vehicle/nucleic acid complex in target cells
  - Toxicity may limit the amount of vehicle used

Nucleic acids successfully delivered by fimaNAc

Type of nucleic acid	Delivery vehicle
Plasmids	PEI, cationic peptides, cationic lipids, polylysine ++ Targeting to EGF-R, transferrin-R
siRNA	PEI, cationic peptides, dendrimers, lipofectamine, DOTAP, nanogels, chitosan ++
PNA (peptide nucleic acids)	None, cationic amino acids attached
mRNA	PEI, Protamine
Adenoviral vectors	None, cationic polymers
AAV vector	None

Pursuing collaboration and partnering opportunities with major players at minimal internal resources

Research Collaborations

- Four active collaborations

eTheRNA

- Collaboration initiated 4Q 2016
- Belgian clinical biotech with proprietary TriMix platform programming dendritic cells
- Clinical programmes in melanoma and triple negative breast cancer

IMV™ IMMUNOVACCINE

- Collaboration initiated 2Q 2018
- A listed Canadian clinical stage immunotherapy biotech
- Multiple clinical-stage programs in cancer and infectious diseases

DC PRIME

- Collaboration initiated 3Q 2020
- Dutch clinical stage biotech focusing on immunotherapy and vaccines
- Multiple product candidates, with clinical programme in AML

APOSENSE®

- Collaboration initiated 3Q 2020
- Israeli biotech focusing on RNA interference (RNAi) therapy

GOOD PROGRESS AND EXCITING OUTLOOKS

fimaCHEM

Progressing development in bile duct cancer towards marketing authorisation application

- Encouraging tumour response and survival data from Phase I
- Orphan designation granted in EU and USA
- Fastest way to market determined through regulatory interactions with authorities
- Pivotal RELEASE study with interim read for accelerated approval initiated in May 2019

fimaVACC

Successful clinical PoC with enhanced immune responses

- Phase I results to be utilised in partnering efforts
- Plan for clinical proof of concept in a disease setting

fimaNAc

Collaborative strategy

- Strong preclinical data on intracellular delivery of nucleic acid therapeutics
- Research collaborations with several players in the field

Recent Key Publications

Programme	Publication	Brief summary
The PCI platform	Photochemical Internalization for Intracellular Drug Delivery. From Basic Mechanisms to Clinical Research. Jerjes W et al. J Clin Med. 2020 Feb 14;9(2):528 https://www.mdpi.com/2077-0383/9/2/528	The PCI technology has been shown to improve the biological activity of a number of macromolecules that do not readily penetrate the plasma membrane. PCI has also been found appealing for intracellular delivery of drugs incorporated into nanocarriers and for cancer vaccination.
fimaCHEM & fimaVACC	Photochemical Internalization: Light Paves Way for New Cancer Chemotherapies and Vaccines. Šošić L et al., Cancers (Basel). 2020 Jan 9;12(1):165 https://www.mdpi.com/2072-6694/12/1/165	This report describe PCI as a potential tool for cellular internalisation of chemotherapeutic agents or antigens and provides a systematic review of the ongoing research. Preclinical studies suggest that PCI can effectively be used to deliver chemotherapeutic agents to the cytosol of tumor cells and, thereby, improve treatment efficacy. Likewise, PCI was pre-clinically shown to mediate major histocompatibility complex (MHC) class I antigen presentation and generation of tumor-specific cytotoxic CD8+ T-lymphocytes (CTL) and cancer remission.
fimaCHEM	Disulfonated tetraphenyl chlorin (TPCS2a)-induced photochemical internalisation of bleomycin in patients with solid malignancies: A first-in-man phase I dose escalation clinical trial. Ahmed Sultan et al., Lancet Oncology 17 (2016),1217-1229 https://doi.org/10.1016/S1470-2045(16)30224-8	In this clinical phase I study PCI Biotech's proprietary photosensitiser fimaporfin was given at escalating doses in combination with the cytotoxic drug bleomycin to 22 patients with advanced and recurrent cancer. The treatment was found safe and tolerable, and significant anti-tumour effects were seen at all dose levels in this patient population with aggressive cutaneous and sub-cutaneous tumours.
fimaCHEM	Photochemical internalisation for solid malignancies. Steen Madsen, Comment. Lancet Oncology 17(2016),1173-1174 https://dx.doi.org/10.1016/S1470-2045(16)30274-1	The results of this phase 1 clinical study are intriguing because they suggest that photochemical internalisation might have a role in the treatment of early lesions and palliation of advanced disease.
fimaVACC	Photochemical internalization of peptide antigens provides a novel strategy to realize therapeutic cancer vaccination. Markus Haug et al., Frontiers in Immunology 9 (2018) https://doi.org/10.3389/fimmu.2018.00650	This article shows that fimaVacc can strongly enhance vaccination effects also with peptide vaccines and with cancer antigens. The article also describes the mechanism of action for fimaVacc in such vaccination.
fimaVACC	Intradermal photosensitisation facilitates stimulation of MHC class-Irestricted CD8 T-cell responses of co-administered antigen. Monika Håkerud et al., Journal of Controlled Release 174 (2014),143–150 https://doi.org/10.1016/j.jconrel.2013.11.017	The fimaVACC technology represents a potent tool for delivery of antigens to cytosol for stimulation of cytotoxic CD8+ T-cell responses after intradermal vaccination.
fimaNAc	Light-induced gene expression using messenger RNA molecules. Sigurd Bøe et al., Oligonucleotides 20 (2010),1-6 https://doi.org/10.1089/oli.2009.0209	Study to developed a site-specific delivery strategy for mRNA molecules through the use of fimaNAC. The main benefit of the strategy proposed is the possibility for protein production from the delivered mRNA in a way that is controllable in a time- and site-specific manner.

INVESTMENT HIGHLIGHTS

Broad platform technology	PCI is a platform technology with three programmes targeting an attractive and growing oncology market, with a clear path to a high unmet need orphan oncology market for the lead candidate
Advanced lead product candidate	**fima CHEM** – Amphinex® is an orphan designated (EU & US) first-in-class product candidate in pivotal development for treatment of bile duct cancer – a disease without approved drugs
Encouraging clinical results	Positive early signs of tumour response in a first-in-man study published in Lancet Oncology, and in a Phase I study specifically targeting bile duct cancer – encouraging survival data
Defined development strategy	Development strategy for lead candidate established based on thorough regulatory discussions with FDA and EMA – a single randomised pivotal study with accelerated/conditional approval potential
Pipeline opportunities	**fima VACC** – a clinical stage vaccination technology with encouraging cellular immune responses **fima NAc** – a preclinical gene therapy delivery solution with established key player collaborations
Experienced leadership	Management team, Board of Directors and advisors with extensive pharmaceutical industry experience across a range of medical development and commercial areas

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