



Localised Cancer Treatment

PCI Biotech

*Amphinex[®] – a new product for localised
cancer treatment*

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Photochemical Internalisation – a new technology for localised cancer treatment



- Light-induced enhancement of various drugs, using a unique and patented photosensitiser, Amphinex[®] to induce the enhancement.
- PCI Biotech is developing Amphinex[®] for local enhancement of marketed cancer drugs. Amphinex[®] is being developed with the generic cytotoxic agents bleomycin for head & neck cancer and gemcitabine for bile duct cancer.
 - Started inclusion of patients in the ENHANCE study, the Phase II study in head & neck cancer patients
 - Preparing for a clinical proof of concept study in bile duct cancer, to start by end of 1H 2013
- Completed first clinical study with Amphinex[®] for enhancement of bleomycin. The results indicate that the treatment induce strong tumour response and is well tolerated.
- Promising results from preclinical program to investigate PCI used with vaccines. Preclinical program is ongoing to optimise a treatment regime, with the aim to develop a protocol for a clinical study that can start in 2013.

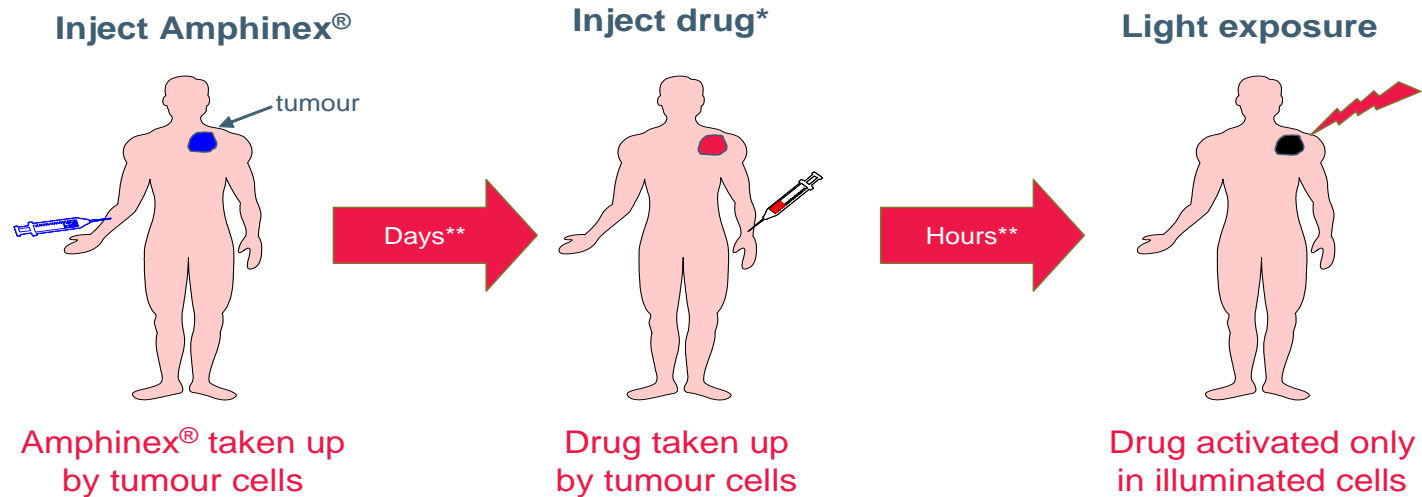
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PCI Technology

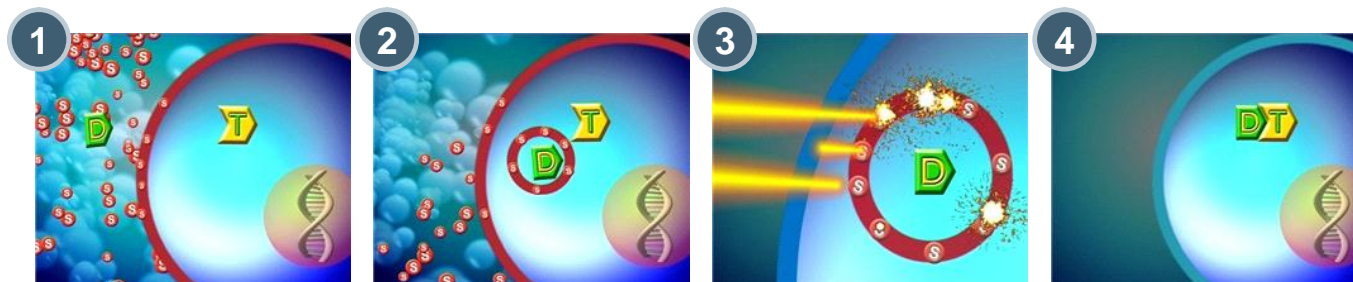
Significantly enhancing the local effect of cancer drugs



* PCI Biotech currently focus on generic drugs, such as bleomycin

** The optimal timing of injections and light exposure may vary with the drug to be delivered

Enabling drugs to reach intracellular therapeutic targets



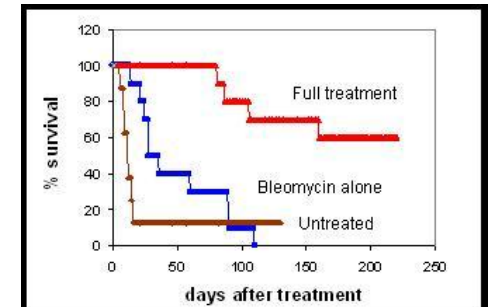
Amphinex may enhance the localised effect of a wide range of different cancer drugs



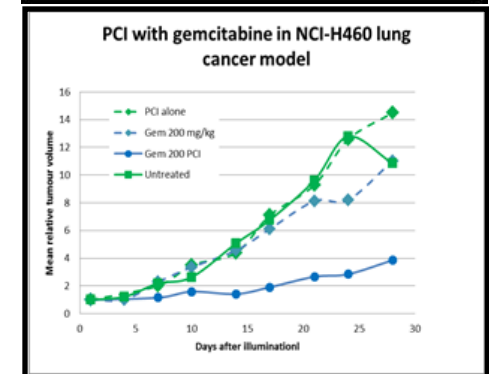
- Positive *in vivo* results with several marketed cancer drugs
 - Enhancement of the local effect of bleomycin in several models

- Significant enhancement of three widely used cancer drugs, including gemcitabine

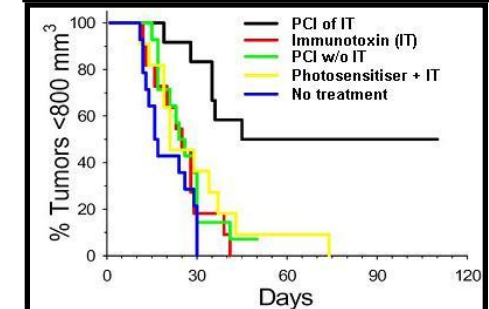
- Effective delivery of macromolecules
 - Proven effective delivery of several types of macromolecules, including targeted immunotoxins



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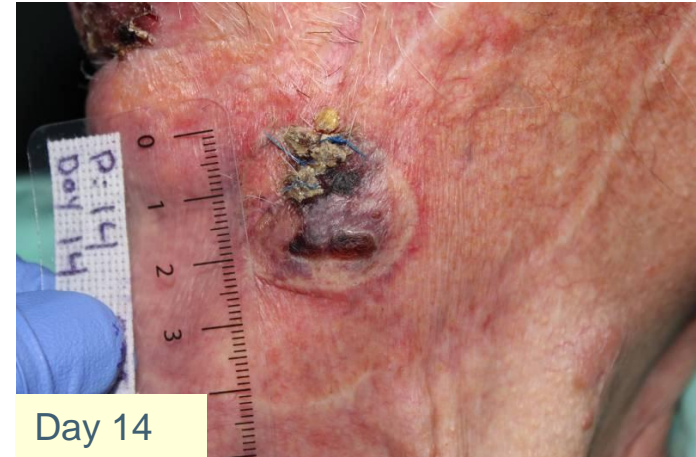
*Berg, K. *et al.* (2005) *Clin. Cancer Res.* 11, 8476
**Unpublished results
***Selbo, *et al.* (2009). *PLoS ONE*, 4, e6691

PCI 652 Laser – designed for PCI treatment

- Prototyped, produced, and received CE marking for the PCI 652 nm medical laser
- PCI Biotech approved as manufacturer and supplier of the laser
- Designed for PCI treatment with Amphinex[®]
- One channel (5W) for superficial and 6 channels (0.5W) for interstitial light application
- Is used in the Phase II study of Amphinex[®] in combination with bleomycin in head and neck cancer and in the clinical Proof of Concept study in bile duct cancer



Amphinex induced PCI of bleomycin – may provide excellent cosmetic outcome



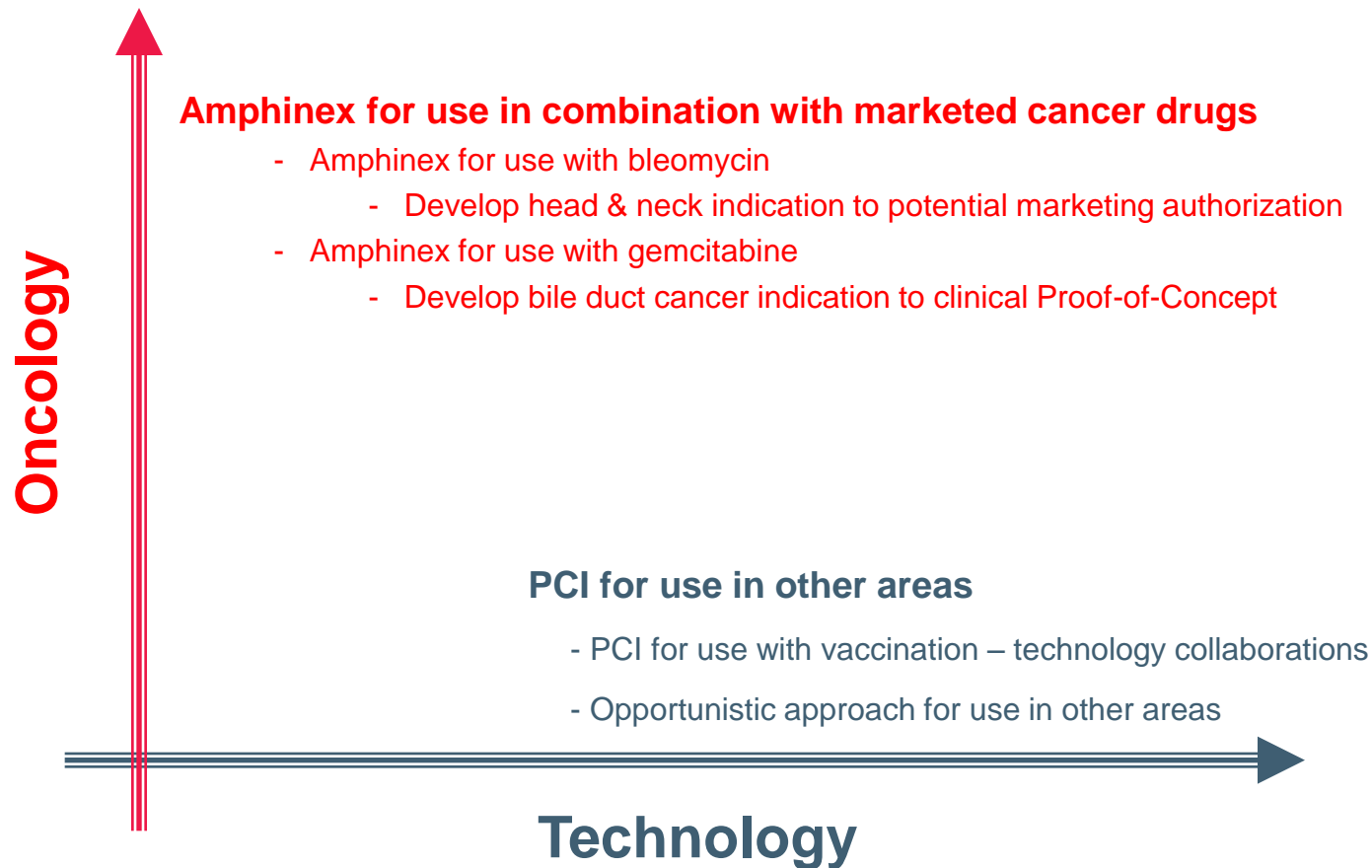
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Strategy

Growth of PCI Biotech via 2 axes

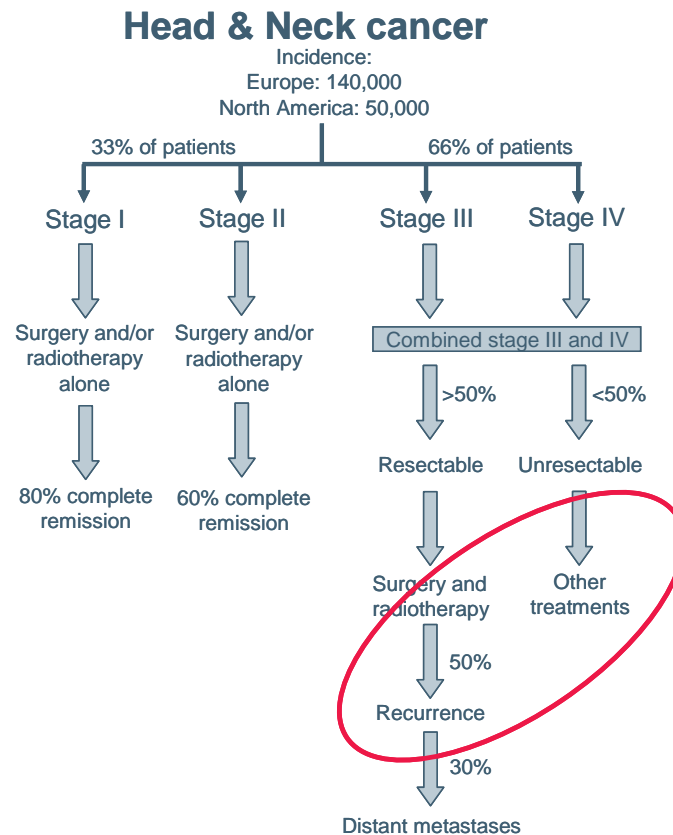


Head & neck cancer

Head & neck cancer – a disease in need of better localised treatment options



- Large patient population with high medical unmet need
 - Need of new treatments able to improve quality of life, reduce recurrence rates and prolong life
 - A field with lack of new innovations
- Current localised treatment options are often associated with functional and cosmetic impairments
 - Surgery
 - Radiotherapy
- Recurrent disease mainly given palliative treatment
 - Quality of life is an important endpoint in this population
 - Palliative chemo/targeted combination therapy is often the only possible choice



Head & neck cancer – market assessment by Bridgehead International



- Market assessment performed in France, Germany, Italy, UK and US
 - 65,000 - 70,000 head & neck cancer patients in EU big 5, representing approximately 50% of all European H&N cancer patients
 - 45,000 - 50,000 head & neck cancer patients in US
- Key findings from Key Opinion Leader interviews:
 - Large patient population with need of new treatments able to reduce recurrence rates and prolong life
 - Quality of life and locoregional control considered more important than overall survival
 - Cetuximab (Erbitux) most relevant price comparator
 - Approximately 20% of head & neck cancer patients eligible for Amphinex

Amphinex induced PCI of bleomycin in head & neck cancer – Phase II study

- Patient inclusion Q2 2012 – 2013
- Target population Recurrent head & neck squamous cell carcinoma without distant metastases, unsuitable for radiotherapy and surgery
- Type of study Single arm, open label
- Primary endpoint Progression free survival at 6 months
- Number of patients 70-80
- Where Europe



Bile duct cancer

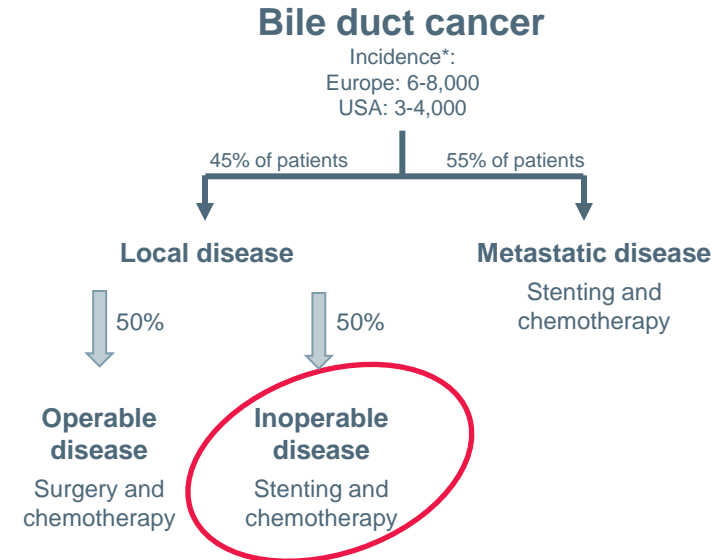
Bile duct cancer— selected as second indication for the development of Amphinex



- Patient population with high medical unmet need
 - Tumour resection is currently the only potential cure
 - Majority of patients are inoperable at presentation
 - Incidence and mortality rates are increasing worldwide
 - Remarkable resistance to common chemotherapy
 - Need of new treatments able to prolong and improve quality of life

- Could PCI play a role in treatment of bile duct cancer?

- Medical need for better local treatment methods
- Easy access with light through the endoscopic methods routinely in use
- Gemcitabine is one of the drugs that in preclinical studies are significantly enhanced by PCI, and is one of the most studied and used chemotherapies in bile duct cancer



*Source; Khan et al, Lancet 2005; 366:1303
Gatta et al, Eur J Cancer 2011; 47:2493

Amphinex induced PCI of gemcitabine in bile duct cancer – Proof of Concept study



- Patient inclusion Start by end of 1H 2013; finish 2014
- Target population Patients with inoperable bile duct cancer
- Study design Open-label, multi-center Phase I/II study in up to 45 patients to assess the safety and efficacy of Amphinex induced PCI of gemcitabine, followed by systemic cisplatin/gemcitabine

Phase I: A dose escalation study to assess the tolerance of local bile duct treatment

Phase II: randomized double-arm Phase II study
 - PCI arm: stenting followed by Amphinex induced PCI treatment of gemcitabine, followed by gemcitabine/cisplatin chemo
 - Control arm: stenting alone followed by gemcitabine/cisplatin chemo
 - Randomization ratio 2.5:1 in favor of the PCI arm

Amphinex induced PCI of gemcitabine in bile duct cancer – Proof of Concept study



- Endpoints in Phase II Primary endpoint – progression free survival
 Secondary endpoints include overall survival
- Number of patients Phase I: up to 12 patients. Patient inclusion
 approx. 6 months
 Phase II: up to 35 patients. Patient inclusion
 approx. 10 months
- Follow up in Phase II 15 months
- Where Phase I: 4-5 European hospitals
 Phase II: Approx. 10 European hospitals



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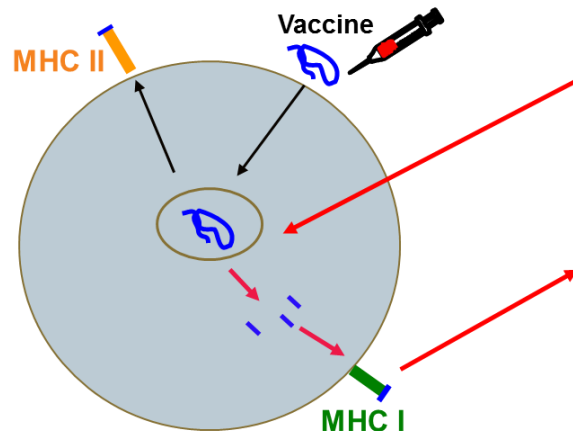
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Vaccines

PCI for vaccination – enhancing cytotoxic T-cell response

- PCI - induce antigen presentation on MHC class I
 - Make it possible to achieve cytotoxic T-cell response with protein/peptide vaccines
 - Can solve a central problem for many vaccine approaches:
 - Therapeutic vaccines
 - Cancer
 - Chronic viral diseases
 - Some prophylactic vaccines



PCI - induce antigen presentation on MHC class I

- Make it possible to achieve cytotoxic T-cell response with protein/peptide vaccines
- This can solve a central problem for many vaccine approaches

- In addition PCI can give a more unspecific "adjuvant" immuno-stimulatory effect

PCI to enhance vaccines

- Therapeutic vaccines – an area with increased focus world wide
 - Rapid marked growth expected within therapeutic vaccines – first product on the market in 2010 and many products under development
- PCI to enhance ex-vivo vaccines – preclinical program ongoing at University Hospital Zurich, CH
 - Will be completed by end of 1H 2013.
 - If positive results => Further development by partners
- PCI to enhance in-vivo vaccines – preclinical program ongoing at University Hospital Zurich, CH
 - Optimised treatment regime to be developed during 2013, with the aim to start a clinical study in 2013.
 - If positive results => Further development by partners



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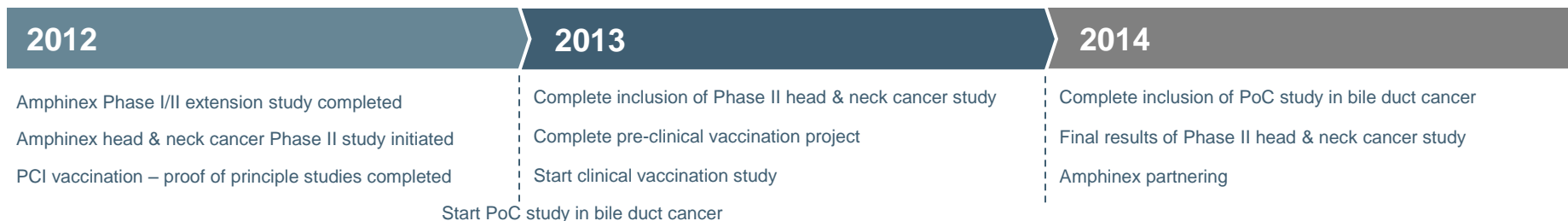


Summary

PCI Biotech – well positioned for attractive development opportunities



- Amphinex with bleomycin**
 - Phase I/II study successfully completed – well tolerated & strong tumour response
 - Phase II study in head & neck cancer started – further expansion of sites in Europe
- Amphinex with gemcitabine**
 - Bile duct cancer and gemcitabine selected as next clinical indication
 - Clinical proof of concept study planned to start by end of 1H 2013
- Vaccination**
 - Proof of principle for *ex vivo* PCI enhancement of vaccination
 - Further pre-clinical work initiated, with plan to start clinical study in 2013
- Other**
 - PCI 652 medical laser designed and approved for PCI treatment



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