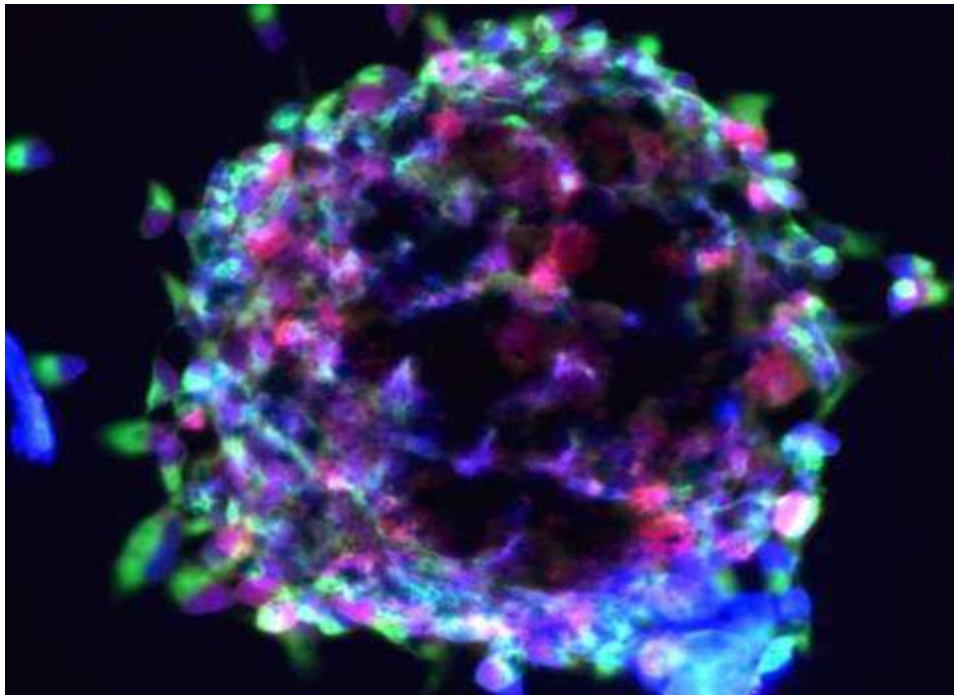


MBiotec[®] GmbH

Treating pancreatic cancer with MALP-2S



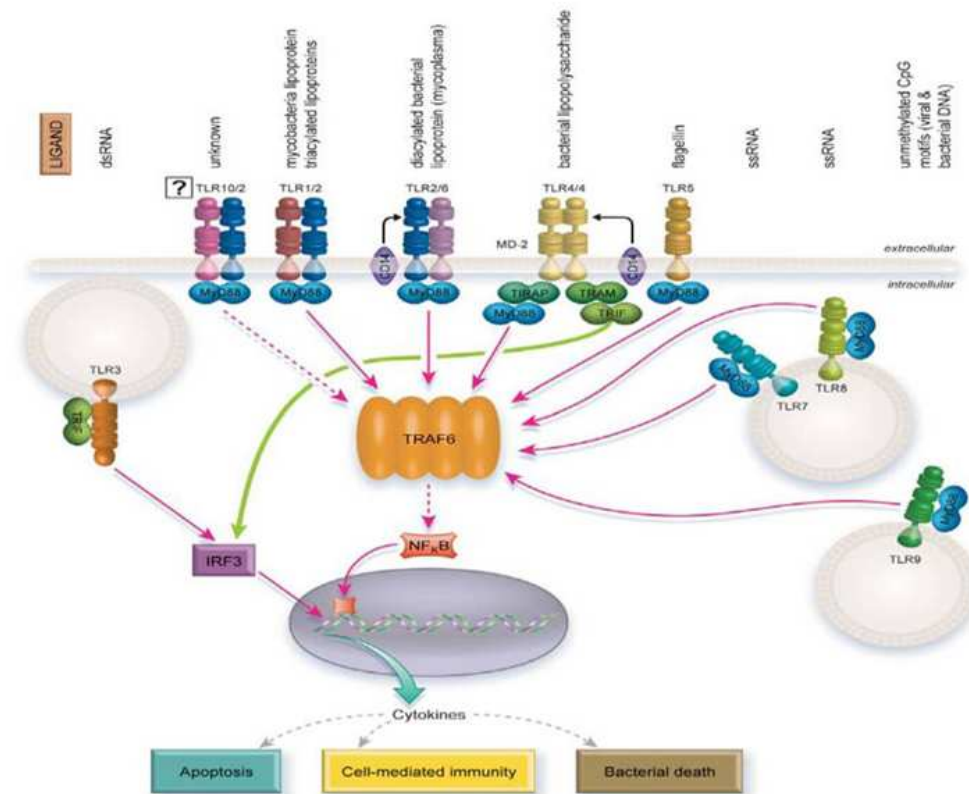


Company mission and aim

- **MBiotec is a GmbH (SME) founded in December 2008, owned by 6 private investors and Ascenion GmbH**
- **MBiotec holds license for TLR 2/6 agonist MALP-2S for all oncologic indications**
- **Clinical data from 26 patients regarding dose and safety**
- **Phase I/II study in 10 patients with advanced pancreatic cancer indicated that MALP-2s is well tolerated and effective**
- **May 2009, MBiotec obtained orphan drug status for MALP-2S**
- **Other oncologic indications are under investigation**
- **MBiotec is raising seed capital for financing its clinical Phase II/III program in a 2-step procedure**
- **Step one: 5.8 Mio EUR - Step two: 5.5 Mio EUR**

MALP-2S: Mechanism of Action

- MALP-2S is an agonist for toll like receptor (TLR) 2/6
- MALP-2S induces the release of various chemokines and cytokines from macrophages, dendritic and other cells
- This leads to an influx and activation of dendritic cells, macrophages, NK and T cells around the area of application
- It is hypothesized that MALP-2S, besides killing of tumor cells by NK and macrophages in the beginning, lastingly leads to activation of anergic dendritic cells and thus might abolish tumor tolerance.



Patent Situation

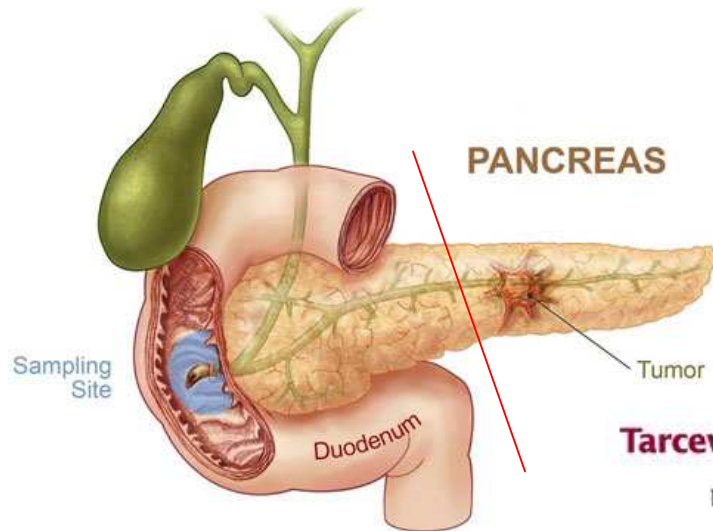
- An expertise* from a European patent consulting agency has been obtained in October 2008
- Five patent application families apply to MALP-2S, whereas only three are of direct relevance to its use in pancreatic CA
 - **WO 98/27110**
 - **WO 03/084568**
 - **WO 2004/009125**
- No IP has been discovered that would be considered potentially threatening to Mbiotec's compound and planned indication
- **“Freedom-to-operate” in pancreatic cancer is clearly stated in the expertise**

* Expertise with regard to the patent situation concerning the therapeutic use of MALP-2S in pancreatic cancer, October 2008, M. Pharma Consultancy Vienna, document available on request.

Pancreatic cancer: worst prognosis among all solid tumors

- **Yearly incidence 38,000 cases in the US; and 60,000 cases in Europe**
- **Median survival is approximately 4-6 months; 5-year survival is less than 10 %.**
- **Chemotherapy of pancreatic cancer: only two drugs approved in EU/ USA: Gemcitabine and Erlotinib**
- **Individual treatment protocols further include 5-FU, cisplatin and radiotherapy (RTX) without robust clinical evidence**
- **No clinical break-through has been achieved to date**
- **Annual sales of chemotherapeutic drugs for the treatment of pancreatic cancer in the US/EU are estimated to be > 1 billion € p.a. in the coming years**

Pancreatic cancer: high need for new treatment options

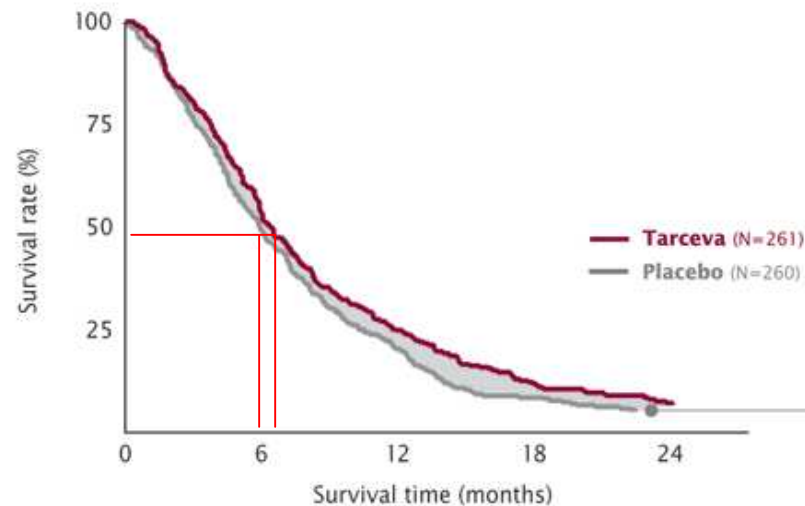


Intervention:

- Surgery (10-20%)
- Radiation
- Pharmaceutical
 - Cytotoxic therapy +/-
 - Molecular therapy +/-
 - Immunotherapy +/-



Tarceva plus gemcitabine prolonged overall survival¹



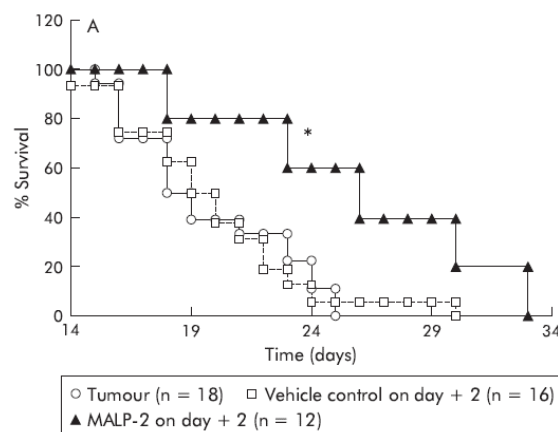
Hazard ratio measures treatment effect by summarizing the difference between the Kaplan-Meier curves throughout the entire trial.

State of development of MALP-2S in pancreatic cancer

Animal Model Pancreatic Cancer in Mice

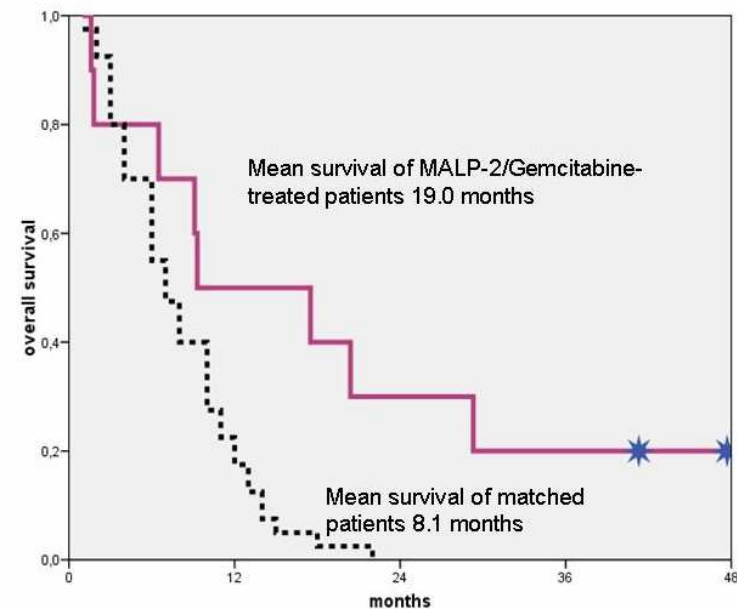
Methods • Intratumoural and intraperitoneal administration of MALP-2S into C57bl/6 mice

Results • **Intratumoural and intraperitoneal administration of MALP-2S prolonged survival of MALP-2S treated animals with pancreas cancer**



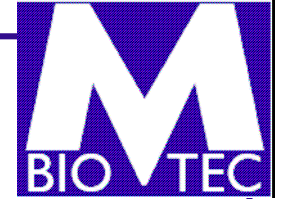
Schneider et al. Gut 2004 53(3): 355-61

Phase I/II study in 10 patients with terminal pancreatic cancer indicated prolongation of survival as compared to matched controls on standard chemotherapy.



Full publication: Schmidt et al. Br J Cancer 2007; 97(5): 598-604

Update as shown on figure: Prof. Märten, congress presentation 2008.



MALP-2S and MBiotec: value and USP

- Solid **preclinical data** (>50 publications in established journals)
- **Safety** established in 2 Phase I/II studies in humans with a total of 26 patients
- **Proof-of-concept:** Established animal model of pancreatic cancer, Phase I/II study in patients confirming the animal model
- No other TLR agonist is clinically investigated in pancreatic cancer, thus giving **MBiotec first mover advantage**
- High likelihood of MALP-2S to be **effective in other cancer indications** as well as in other indications
- Fee **free EMEA scientific advice** granted, option for **fast track approval**
- Expected **time to market less than 5 years**
- **Highly experienced team**

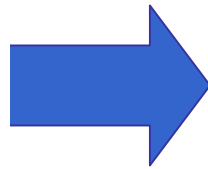
TLR agonists for cancer treatment: Competition

Drug/ Candidate	Company	Target receptor	Indication	Status
Imiquimod (Aldara®)	3M	TLR 7	Basal cell CA	Approved
MALP-2S	MBiotec	TLR 2/6	Pancreatic CA Non-small cell lung CA	Phase II Preclinical
CPG 7909	Pfizer (Coley)	TLR 9	Non-small cell lung CA Cutaneous T-cell lymphoma Melanoma	Phase III Phase II Phase II
Imo-2055	Idera	TLR 9	Renal cell CA Non-small cell lung CA Colorectal CA	Phase I/II Phase Ib Phase Ib
MPL vaccine adjuvant	Corixa/GSK	TLR 4	Multiple therapeutic vaccine	Phase I/II

Sources: F. Romagne: Drug Discovery Today 12:1/2, 2007; Internal research.

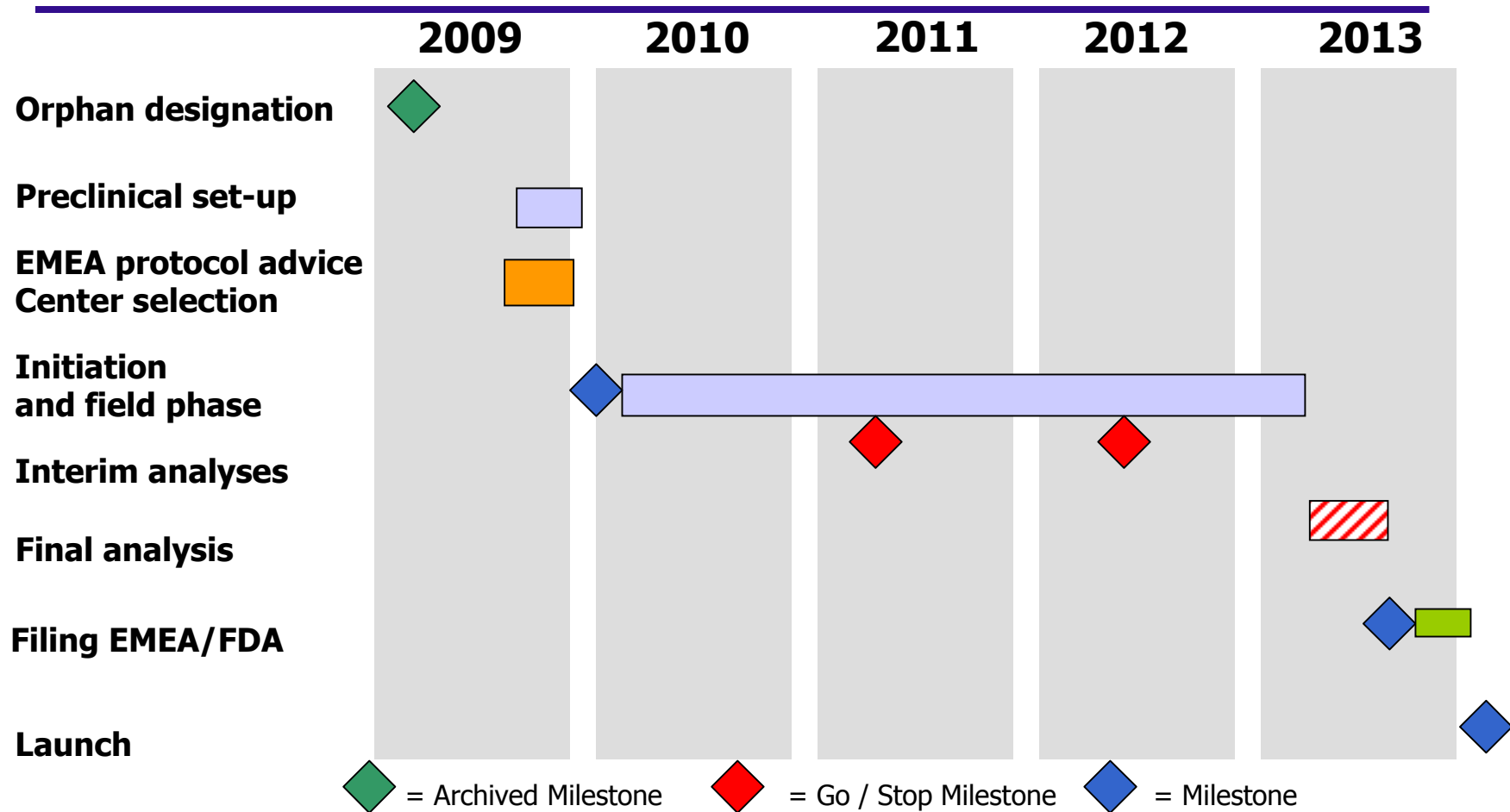
MALP-2S

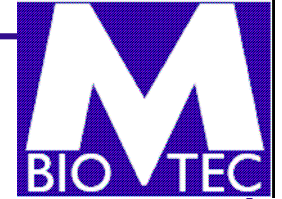
Potential Medical Indications



Cancer	First data in humans
Wound healing	First data in humans
Sepsis	Animal model
Adjuvant	Animal model

Milestones





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