

# Immunotherapy, Bringing It All Together: The Next Generation of Approaches & Combinations

**Moderator:** Axel Hoos, MD, Vice President, Oncology Research and Development, GlaxoSmithKline

## **Panelists:**

- Neil Berinstein, MD, Affiliate Scientist, Sunnybrook Research Institute
- Paul Higham, Chief Executive Officer, Immatics
- Sara Zaknoen, MD, CMO, Polynoma, LLC
- Dennis L. Panicali, Ph.D, Vice President, Technical Operations Bavarian Nordic ImmunoTherapeutics
- Charles J. Link, Jr. MD, Chairman, Chief Executive & Scientific Officer at NewLink Genetics Corp

The logo features the words "CANCER" and "PROGRESS" in a bold, black, sans-serif font. "CANCER" is positioned above "PROGRESS". Below "PROGRESS" is the tagline "by Defined Health" in a smaller, italicized, black font. The entire text is overlaid on a large, light blue, tilted oval shape.

**CANCER**  
**PROGRESS**  
*by Defined Health*



i m m a t i c s

-/ ACTIVE AGAINST CANCER

Paul G Higham

March 2013 / New York

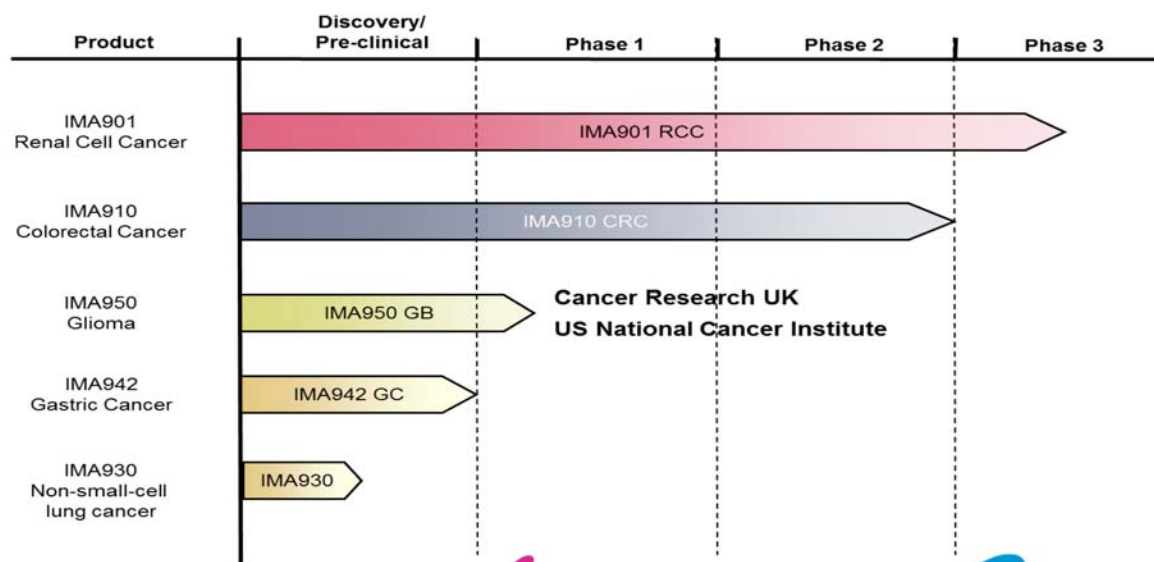


### 3 *immatics* – at a glance

●●● Multi-peptide cancer vaccines developed from the X-President identification and validation platform

●●● Since 2004 *immatics* has:

- Established and continuously evolved its proprietary technology platform XPRESIDENT™
- Built a robust pipeline with three high potential vaccines in clinical development:
  - 1<sup>st</sup> product **IMA901 (Renal Cell Cancer)** delivered positive Phase 2 data, Phase 3 trial is fully recruited
  - 2<sup>nd</sup> product **IMA910 (Colorectal Cancer)** recently completed Phase 2 study
  - 3<sup>rd</sup> product **IMA950 (Glioma)** is in Phase 1 clinical development

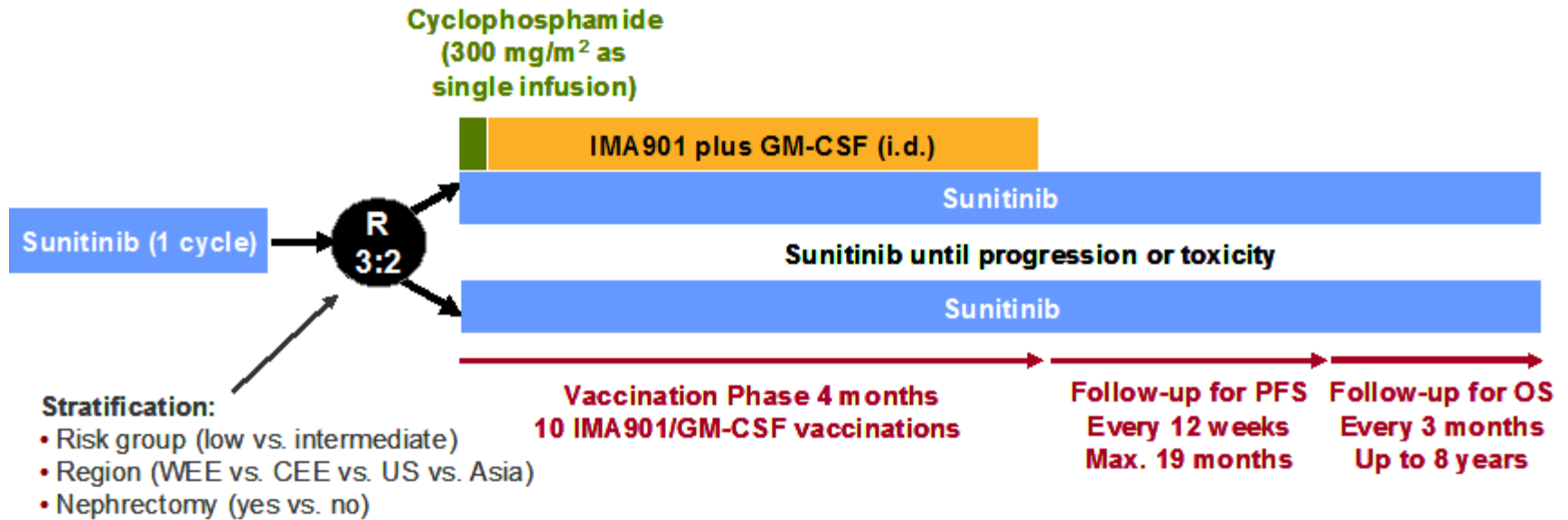


## Key Opportunities and Issues in Cancer Immunotherapy

- **Move into earlier disease settings**
- **Combination therapy**
  - existing first-line therapies – is synergy possible?
  - new immuno-modulators (anti-CTLA4, anti-PD1 etc...)
- **Patient selection – validation**
- **Predicting and measuring immune responses**
- **Engagement with large pharma and biotech companies**

# IMA901 Renal Cell Cancer Phase 3 Trial

## Study Design – 1<sup>st</sup> line in combination with SoC



### N = 330

- 1<sup>st</sup> line metastatic and/or locally advanced RCC
- HLA-A\*02-positive
- Documented tumor lesions
- Favorable or intermediate risk (Heng et al., 2009)

### Primary: OS

**Secondary:** OS in biomarker subgroup, PFS safety, immune responses, novel biomarkers

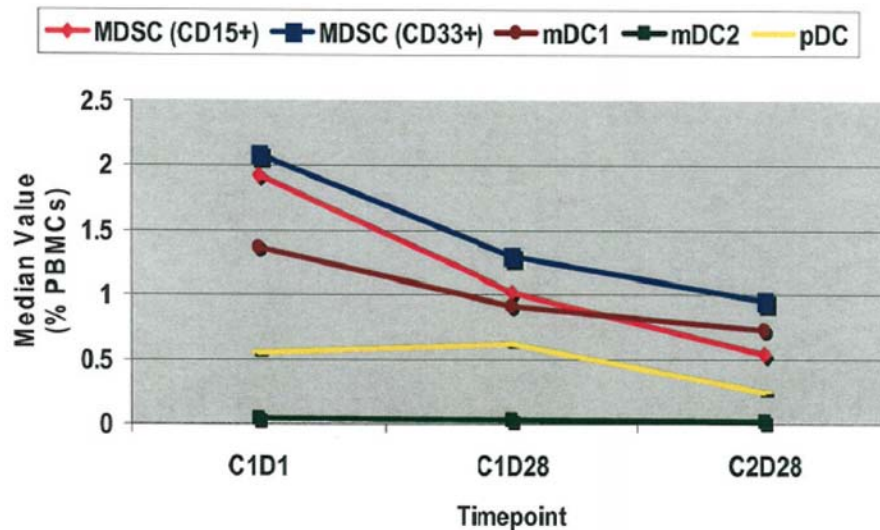
**Chief Investigator US:** Brian Rini, Cleveland  
**Chief Investigator EU:** Tim Eisen, Cambridge

## Synergy with existing therapies?

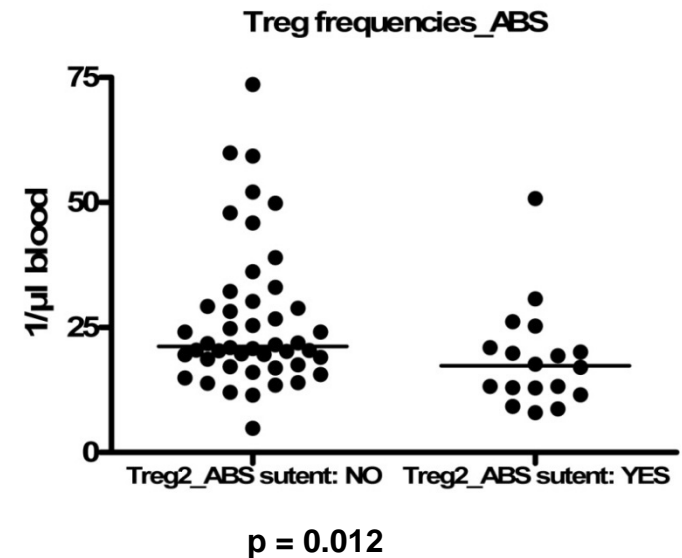
Sunitinib inhibits immunosuppressive cell populations clinically (below)

●●● Decrease of myeloid suppressor cells in sunitinib-treated patients

●●● Inhibition of Tregs in IMA901 phase 2 study by sunitinib pre-treatment



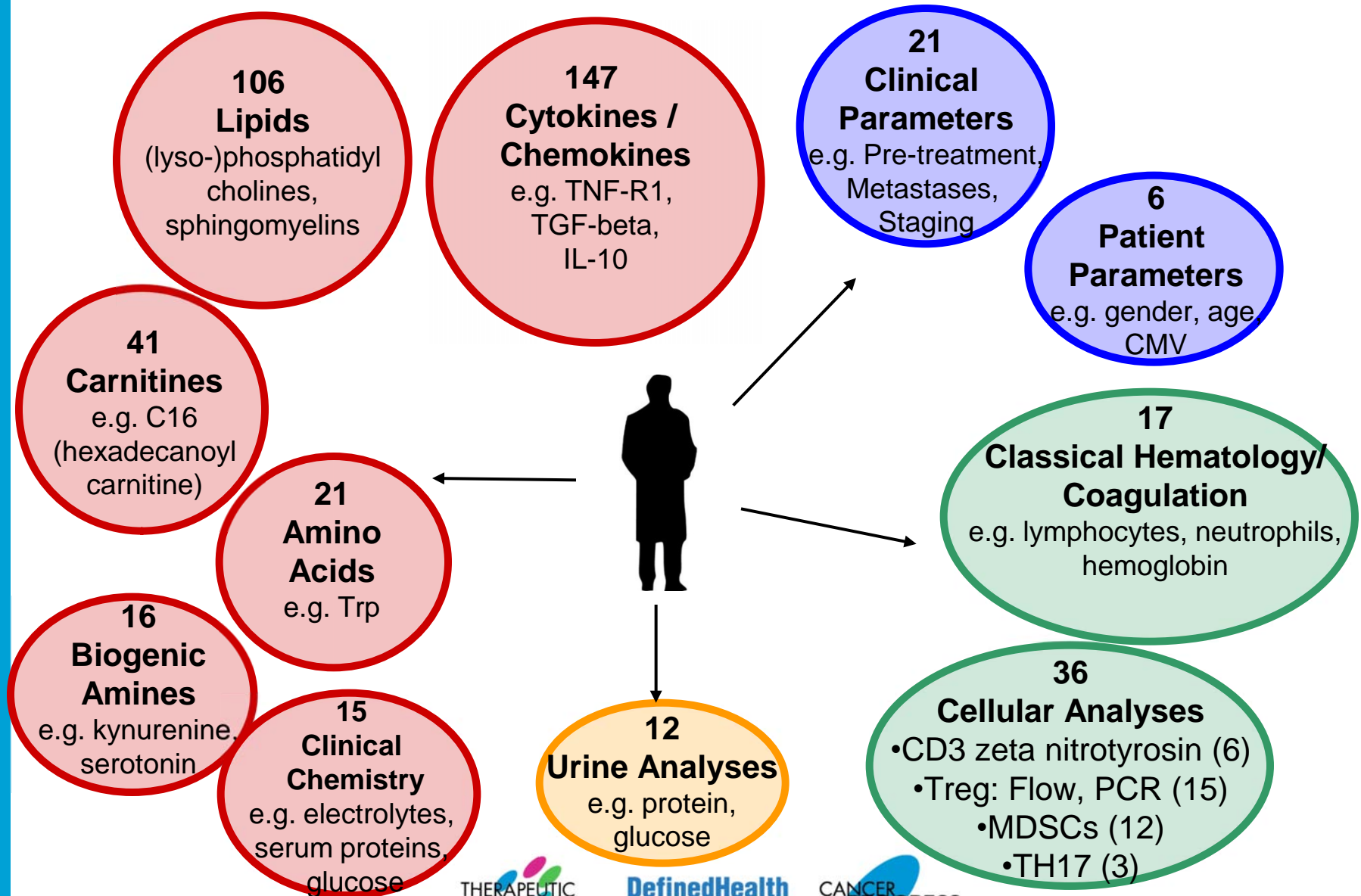
Finke et al., 2010



IMA901 phase II data

# IMA901 Phase 2 Biomarker programm

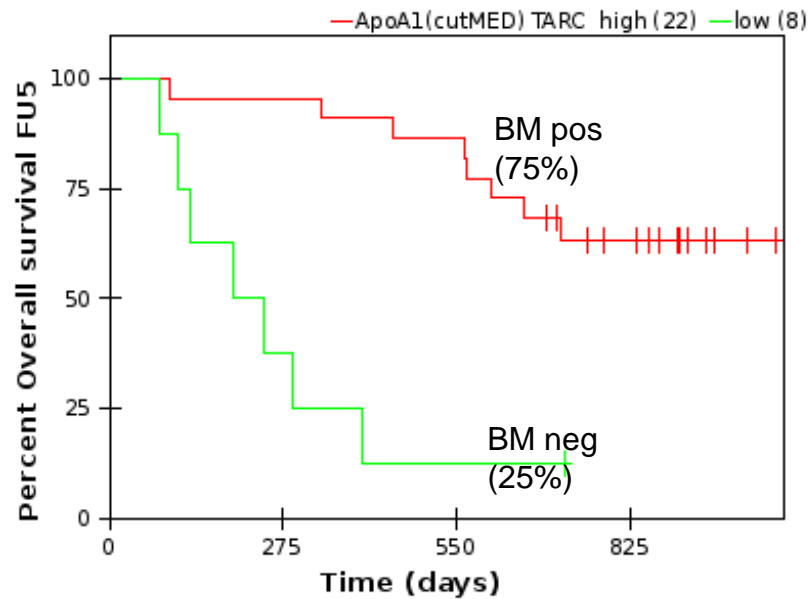
## >400 biomarkers analysed pre-treatment



# IMA901 Phase 2 Study

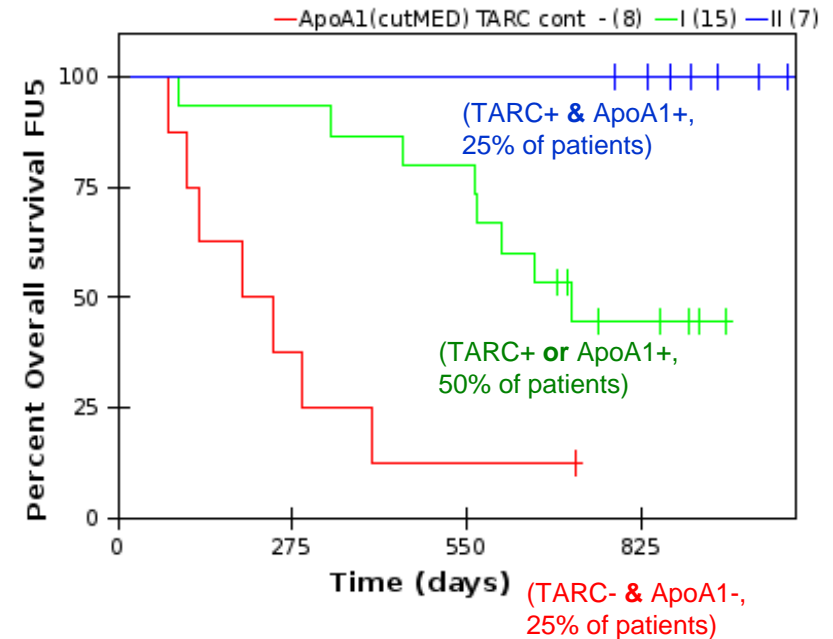
## ApoA1/CCL17 biomarker signature

biomarker score of 1 or 2 vs. score of 0



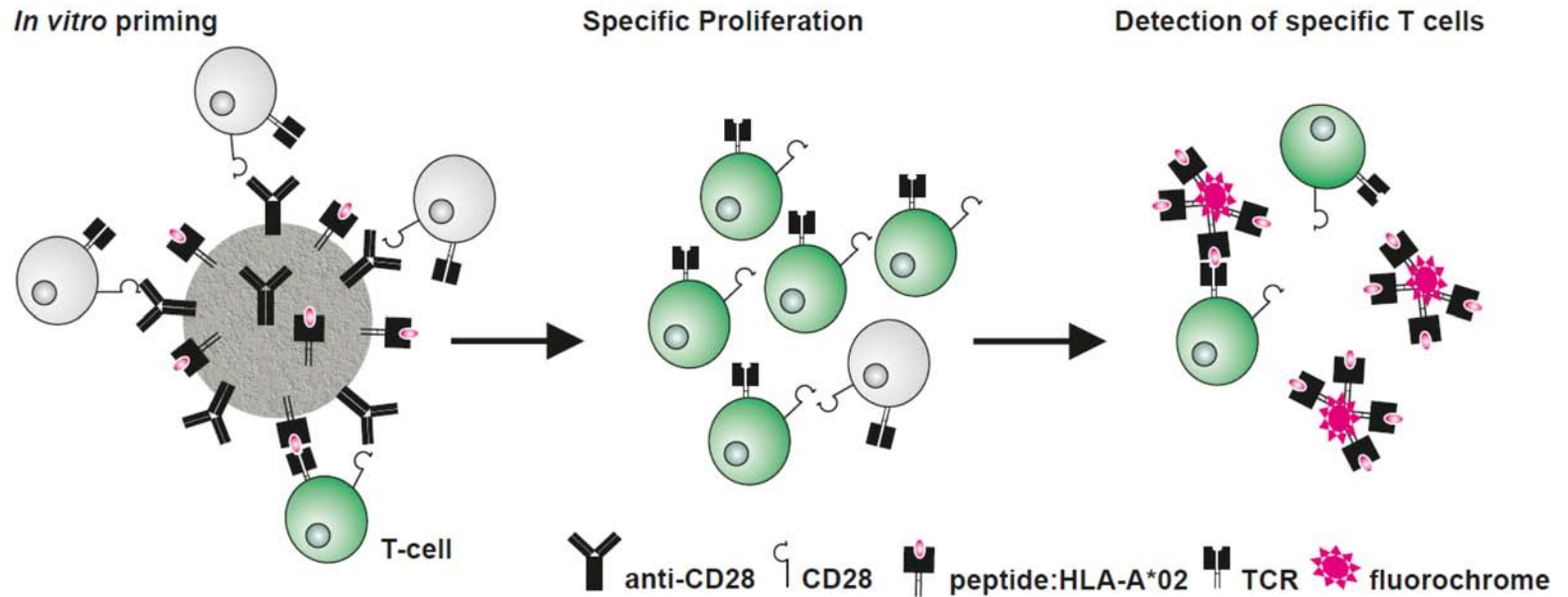
HR = 0.17  
 $p=0.000077$

biomarker score of 2 vs. score of 1 vs. score of 0





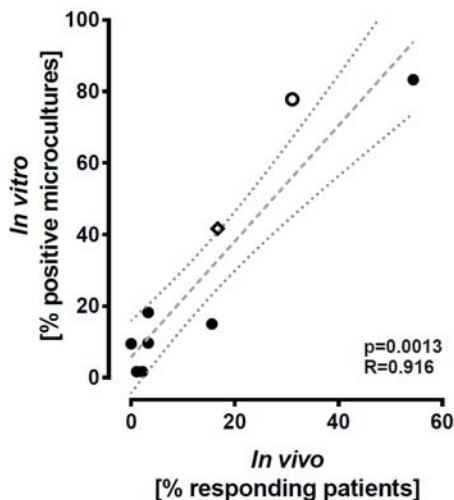
# Predicting Response – in vitro to in vivo immune response validation platform



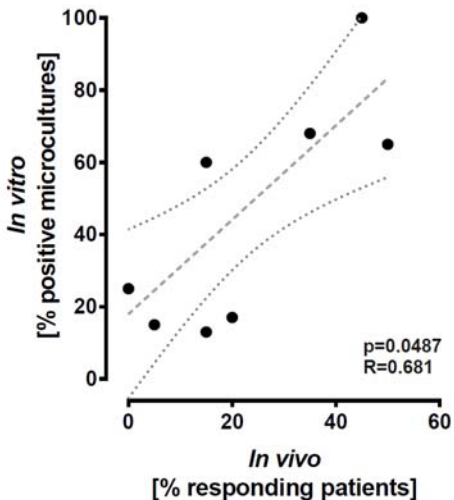
- Principle: Priming of naïve precursor T cells specific for TUMAPs
- Use of artificial antigen presenting cells allows high degree of standardization
- The platform indicates whether circulating specific precursor T cells exist

10 In vitro veritas!

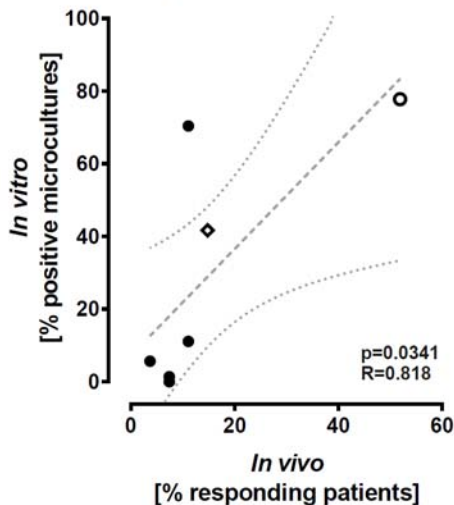
a CRC phase I/II trial



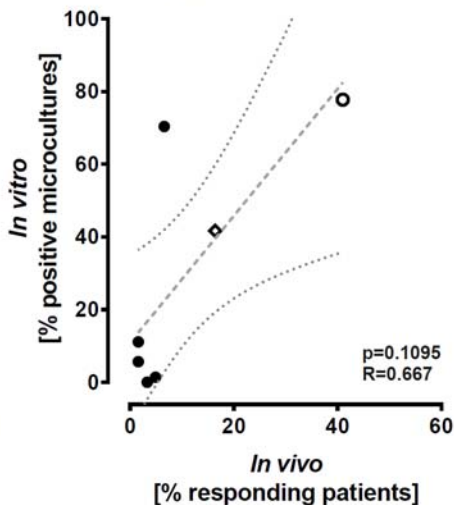
b GB phase I trial



c RCC phase I trial



d RCC phase II trial



●●● ***In vitro***  
immunogenicity from  
healthy donors was  
associated with ***in vivo***  
immune responses in  
patients in 4  
independent clinical  
studies

R and p values from spearman correlation  
Linear regression with 90% confidence intervals

## Collaborating and Partnering with Large Pharma/Biotech

- Attitudes are changing towards cancer immunotherapy
- Further positive data needed to continue to drive this change
- Understanding?
- Where/how could we best work together?



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