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# HER-VAXX IMMUNOTHERAPY FOR HER2+GASTRIC CANCER – CLINICAL AND PIPELINE UPDATE

Dr Nick Ede | Chief Technology Officer  
Ausbioinvest, October 24, 2017

## Notice: Forward looking statements

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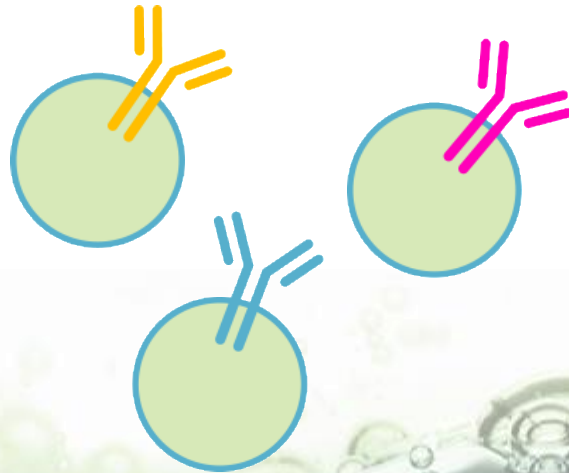
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# EXECUTIVE SUMMARY

- HER-Vaxx Phase 1b/2 clinical study in Her2+ gastric cancer (large unmet medical need by current existing therapies) – **IP protected to 2036**
  - POC demonstrated in Phase 1 Her-2+ breast cancer study – safety & immunogenicity established
  - Phase 1b clinical trial underway with **patients successfully dosed**
- **Experienced** management & board
- **Discovery Pipeline:** Mimotope candidate selection to new immuno-oncology targets in development
- **Numerous milestone announcements** & valuation inflection points over next 12-18 months



## WHAT DOES IMUGENE DO?

Imugene's technology can induce a patient's body to make its own specific cancer eliminating antibodies.



# A BETTER WAY TO MAKE ANTIBODIES TO TREAT CANCER?

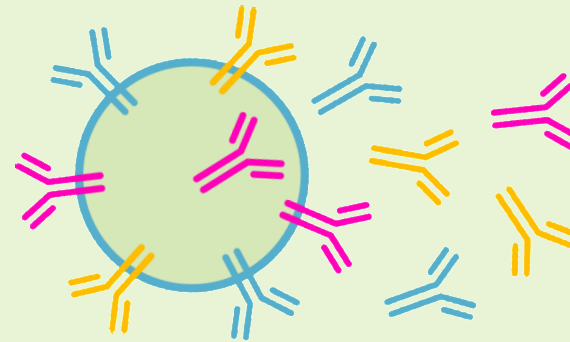
## IN A FACILITY



For example, Roche's Herceptin®

VS

## USING B CELLS IN YOUR OWN BODY



B Cells are cells in the human body that naturally produce millions of antibodies

Teaching B cells to make antibodies using peptide mimotopes

# THE MONOCLONAL ANTIBODY (mAb) MARKET

- Multiple antibody therapies are approved to treat cancer, for example:

Sales in 2016	
- Herceptin®:	>US\$6.7 billion
- Perjeta®:	>US\$1.8 billion
- Rituxan®:	>US\$7.3 billion
- YERVOY®:	>US\$1.0 billion
- OPDIVO®:	>US\$3.7 billion
- KEYTRUDA®:	>US\$1.4 billion

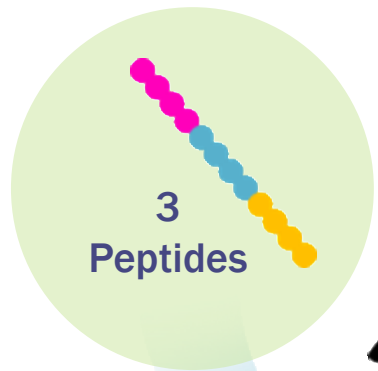


Total monoclonal antibody market is currently at US\$60 billion

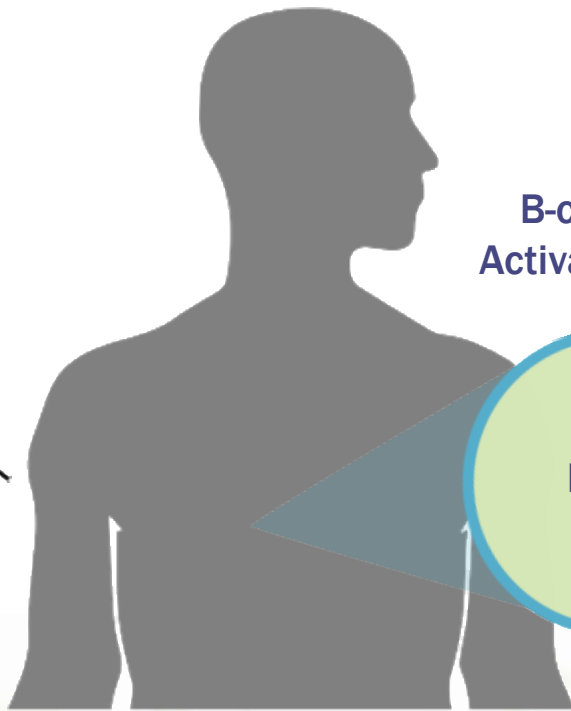
- All of these antibodies are manufactured in a facility.
- Instead of infusing patients with synthesized antibodies, what if we can induce the patient's own B-cells to make similar cancer-fighting antibodies using Imugene's mimotope technology?

# HER-Vaxx MIMOTOPE: MECHANISM OF ACTION

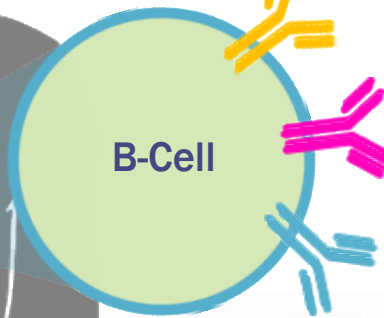
Peptides  
"mimic" the  
epitope



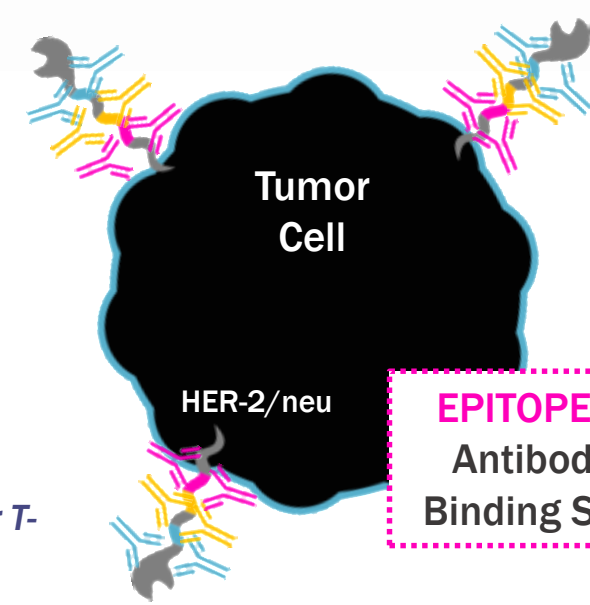
HER-Vaxx  
Immunotherapy



B-cell  
Activation



HER-Vaxx  
Antibody Secretion



EPITOPE =  
Antibody  
Binding Site

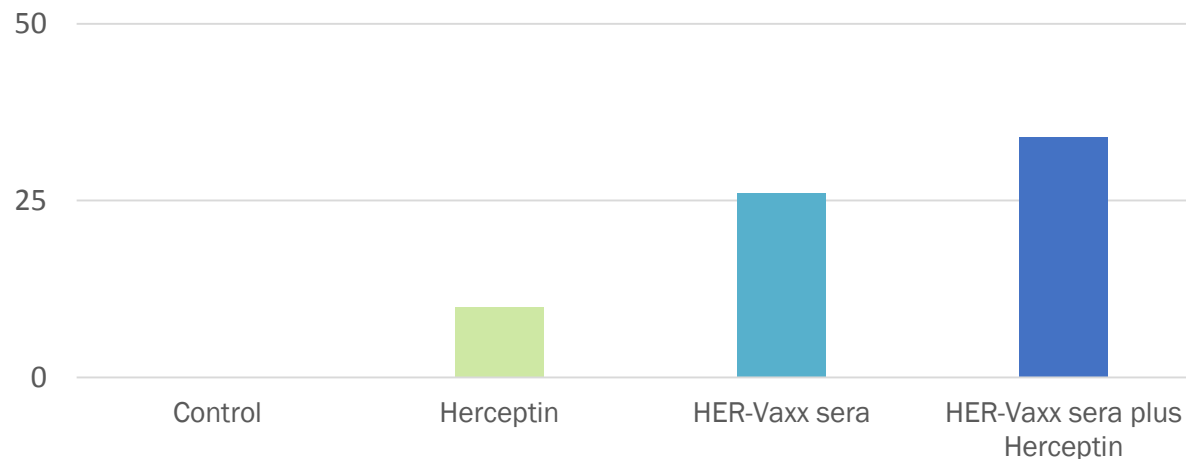


HER-Vaxx attacks the same target as the world's largest selling breast cancer drug Herceptin

# HER-Vaxx Demonstrates Superior Activity vs Herceptin®

**HER-Vaxx antibodies demonstrate anti-tumour effect by inhibiting validated HER-2+ gastric cell line**

Percentage of Inhibition on NCI-N87 gastric cancer cell growth (c/w control)



HER-2+ gastric cancer cells

\*Collaboration with US company 2017

- Research shows superior inhibition of tumour cell growth by HER-Vaxx when compared with Herceptin® in industry validated gastric cancer tumour model
- Combination of HER-Vaxx sera plus Herceptin is synergistic
- Opens new clinical and target product profile opportunities (see pipeline slide)



# TEAM WITH A TRACK RECORD IN DRUG DEVELOPMENT



**Leslie Chong (Sydney, Australia)**

Chief Executive Officer

- Over 19 years of oncology experience in Phase I - III of clinical program development
- Leadership role involvement in 2 marketed oncology products
- Previously Senior Clinical Program Lead at Genentech, Inc., in San Francisco



**Prof Ursula Wiedermann (Vienna, Austria)**

Chief Scientific Officer

- Co-inventor of HER-Vaxx;
- Professor of Vaccinology at Medical University of Vienna



**Dr Axel Hoos (Philadelphia, U.S.A.)**

Non-Executive Director

- Currently Senior VP Oncology R&D at GlaxoSmithKline
- Previously Clinical Lead on Ipilimumab at Bristol-Myers Squibb
- Co-Director of the think-tank Cancer Immunotherapy Consortium



**Prof Christoph Zielinski (Vienna, Austria)**

Head of Scientific Advisory Board

- Chairman of the Comprehensive Cancer Centre in Vienna
- Chairman of the Centre for Eastern EU Organisation for Research and the Treatment of Cancer (CEEORTC)
- Editor in Chief and President Nominee of European Society of Medical Oncology (ESMO)



**Paul Hopper (Sydney, Australia)**

Executive Chairman

- International & ASX biotech capital markets experience particularly in immuno-oncology & vaccines
- Chairman of Viralytics, Founder & Director of Prescient, Founder of Polynoma LLC, former Director pSivida, Somnomed & Fibrocell Science



**Dr Anthony Good (Sydney, Australia)**

Clinical Program Manager

- Over 15 years oncology & immunology experience. Active in the development of Viagra, Revatio, Lipitor, Selzentry and Somavert.
- Ex Pfizer Global Research and Development

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**HER-Vaxx IS A PHASE 1B/2 STAGE MIMOTOPE  
IMMUNOTHERAPY BEING DEVELOPED FOR  
HER2+ GASTRIC CANCER**

# PHASE 1B/2, IN GASTRIC CANCER COMMENCED

## Phase 1b lead-in (FPI – 08/17)

- Open label
- ~Up to 18 patients in 3 cohorts of up to 6 pts per cohort
- Combination with chemo/cisplatin
- Endpoints:
  - Recommended Phase 2 Dose of HER-Vaxx
  - Safety: any HER-Vaxx toxicity
  - Immunogenicity (anti-HER-2 antibody titres)

## Phase 2

- Open label
- 68 patients from sites in Asia
- Combination with chemo
- Randomized
- Primary Endpoints:
  - TBD PFS and/or OS
  - (cont. on Ph1b results)
- Secondary endpoint:
  - Immune response



2H, 2017 :  
Patients Enrolled

2H, 2017: Early Patient  
Data Available

2H, 2017: Interim Ph1b  
Patient Data Available

1H, 2018: Final Ph1b  
Patient Data Available



We are here – patients  
dosed



# IMUGENE PIPELINE

HER-Vaxx (IMU-131)		Discovery	Pre-Clinical	Phase IB	Phase 2
Open Label Randomized, Controlled Study in Gastric Cancer	Chemotherapy + or - HER-Vaxx	[Progress bar spanning Discovery, Pre-Clinical, and Phase IB]			[Grey bar in Phase 2]
*Combination Study in breast cancer	HER-Vaxx + Herceptin	[Progress bar spanning Discovery and Pre-Clinical]			▲
*Herceptin Resistant/Failed Study	HER-Vaxx + Chemotherapy	[Progress bar in Discovery]	[Progress bar in Pre-Clinical]	▲	[Grey bar in Phase 2]
*HER2+ in bladder and ovarian, NSCLC etc.	HER-Vaxx + Chemotherapy	[Progress bar in Discovery]	[Progress bar in Pre-Clinical]	▲	[Grey bar in Phase 2]

\*(IST) Investigator Sponsored or Collaboration study

\*Christoph Zielinski, CECOG President, ESMO president nominee, engaged

\*\* Recommended Phase 2 dose

▲ = Initiated upon RP2D\*\*





# KEY MESSAGES FOR INVESTING

Phase Ib clinical trial  
underway with  
patients **successfully  
dosed**

Discovery Pipeline:  
**Mimotope** candidate  
selection to **new  
immuno-oncology  
targets**

Numerous  
**milestone  
announcements**  
over next 12  
months