# IMUGENE

**ASX: IMU** 





Proactive Investor Presentation, 10<sup>th</sup>-11<sup>th</sup> February 2015 Melbourne & Sydney, Australia



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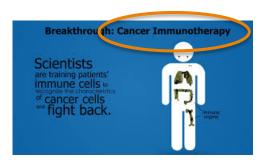
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Imugene is an immuno-oncology company developing B-cell based immunotherapies, known as HER-Vaxx, for HER-2 positive gastric and breast cancer, in the highest profile area of oncology today – immunotherapy.









### **Investment Summary**

Strong Scientific Provenance

Compelling science from one of Europe's leading cancer institutes developing next generation immuno-oncology therapy

**Low Valuation** 

Pronounced undervaluation anomaly compared with other immuno-oncology companies or ASX listed biotechnology companies at similar development stages

Proven Leadership and Management

The right, experienced, successful team on board to aggressively drive HER-Vaxx development

Significant Investment to Date

Approximately \$10 million invested to date

**News Flow** 

Numerous milestone announcements and valuation inflection points over next 12 months for investors

**Robust IP** 

Long-life patents up to 2030, granted in all major jurisdictions

**Strong Upside** 

Potential to improve on Roche's \$6.9bn drug, Herceptin

# Leadership – Experience and Track Record



Charles Walker CEO



Paul Hopper Executive Chairman



**Dr Axel Hoos**Non-Executive Director



Otto Buttula

Non-Executive Director



Dr Nick Ede Head of Manufacturing & Operations

- Former CEO and CFO of ASX-listed Alchemia, a late stage oncology biotech company
- 20+ years in the life science industry, including a decade in specialist corporate finance in London
- Executed ~50 capital markets transactions as principal and advisor
- Extensive international and ASX biotech capital markets experience particularly in cancer vaccines
- Head of Life Sciences Desk and Australia Desk at Los Angeles-based investment bank, Cappello Capital Corp
- Currently Vice President Oncology R&D at GlaxoSmithKline
- Previously Clinical Lead on Ipilumimab at Bristol-Myers Squibb
- Co-Director of the think-tank Cancer Immunotherapy Consortium; Imugene is his only Board seat world wide
- Extensive and successful experience in investment research and financial services management. Active and substantial investor in the biotechnology sector with a particular focus on oncology opportunities. Has built significant positions in several ASX listed companies including Imagene
- Former CTO Consegna, CEO Adistem Ltd, CEO Mimotopes P/L, COO EQiTX Ltd (ZingoTX & VacTX)
- VP Chemistry Chiron (now Novartis), Research Fellow CRC Vaccine Technology



### **HER-Vaxx**



HER-Vaxx is **one of the most advanced B-cell vaccines**, designed to stimulate a patient's own immune system to repeatedly attack the cancer



HER-Vaxx stimulates a patient's B cells to produce antibodies that target cells with high levels of HER-2 on their surface

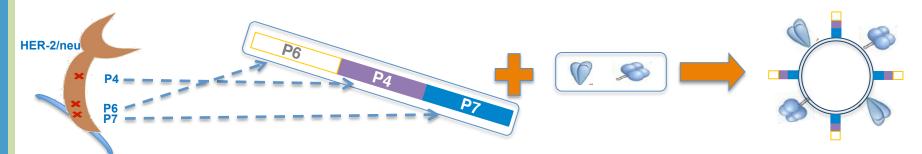


A Phase I study has shown:

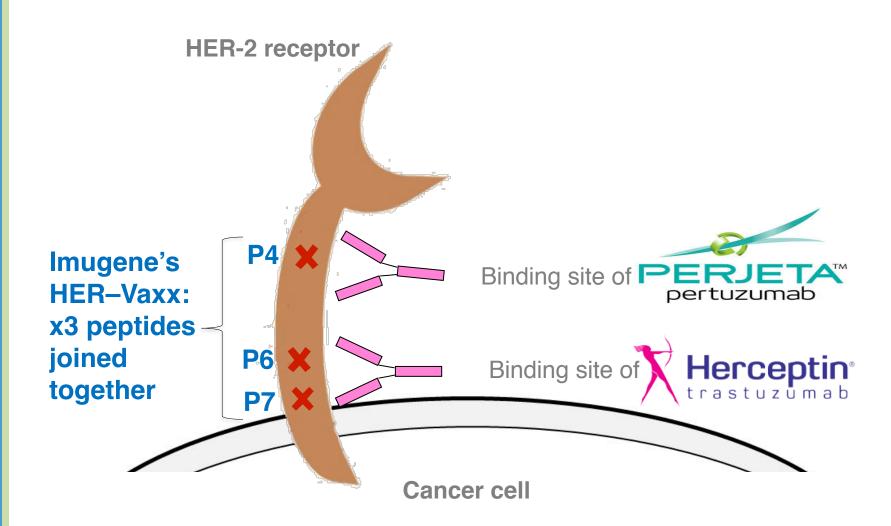
- Generation of anti HER-2 antibodies by patients
- Patient antibodies showed potent anti-tumour activity
- Patients generated immune responses



A Phase Ib/II clinical study is planned in patients with HER-2 overexpression with gastric cancer

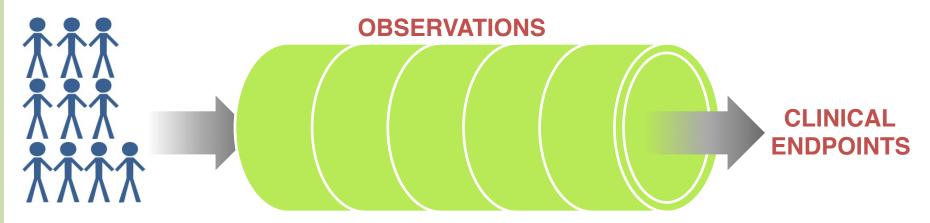


# **HER-2 Target**





### Clinical Status: Phase I Completed



- **1** n=10
- All metastatic breast cancer patients
- 3 HER-2 +/++
- 4 Endocrine dependent disease
- **5** Life expectancy > 4 months
- 6 Conducted at University of Vienna

- Patients developed anti-HER-2 antibodies
- Antibodies induced displayed potent antitumour activity
- Showed immune response

- Safety and Tolerability
- 2 Immunogenicity: antibodies/humoral and cellular responses

Phase I trial in patients with breast cancer published:
Wiedermann et al., Breast Cancer Res Treat (2010)119:673 - 683



### **Near Term Clinical Trial Program**

# Combined (single protocol) Phase Ib / II clinical trial: efficacy, safety and determination of optimal dosing

#### Phase Ib Lead in to Phase II Trial

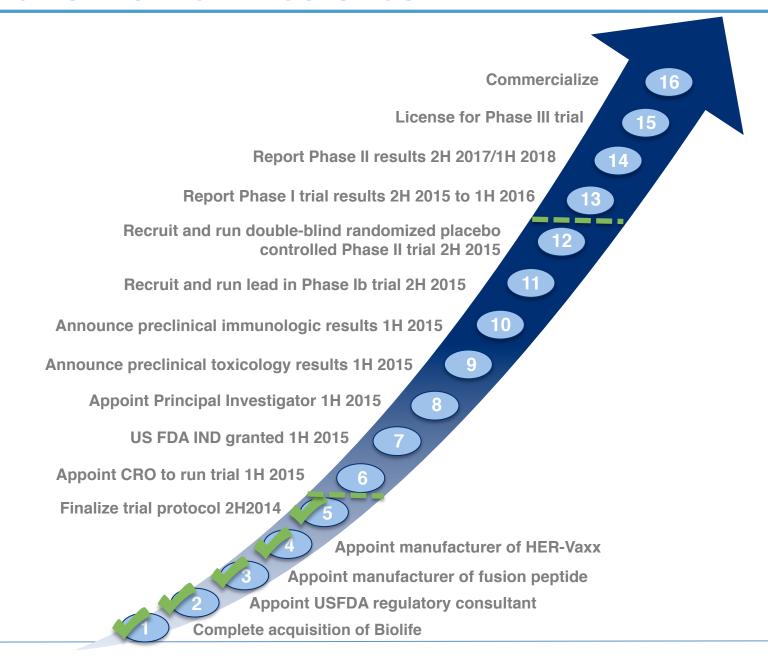
- Open label
- ❖ 18 patients, x3 groups of 6 patients
- Endpoints:
  - Dose of HER-Vaxx to use in Phase II part of study
  - Safety: any HER-Vaxx toxicity
  - Immunogenicity (anti-HER2/neu antibody titers)
  - Test booster schedule (q 4 weeks or 8 weeks)

#### Phase II Trial

- ~68 patients from Australia and Europe
- Efficacy, safety and immune response
- Randomised, blind, placebo controlled
- Primary endpoints:
  - Overall survival
  - Progression-free survival
- Secondary endpoint:
  - Immune response



### **News Flow & Milestones**





# **Pronounced Valuation Anomaly – Below US Peers**

Company	Market Cap (USDm)	Development Phase		
Agios Pharmaceuticals, Inc.	\$3,900	Phase I		
Karyopharm Therapeutics, Inc.	\$966	Phase I		
Dicerna Pharmaceuticals, Inc.	\$386	Phase I		
Immune Design Corp.	\$429	Phase I		
Heat Biologics, Inc.	\$32	Phase I		
Imugene Ltd.	\$12	Phase I		
Loxo Oncology, Inc.	\$214	Phase I		
Epizyme, Inc.	\$642	Phase I/II		
Kite Pharma, Inc.	\$2,560	Phase I/II		
Idera Pharmaceuticals, Inc.	\$330	Phase I/II		
Ignyta, Inc.	\$132	Phase I/II		
Inovio Pharmaceuticals, Inc.	\$515	Phase I/lia		
Five Prime Therapeutics, Inc.	\$590	Phase Ib		
OncoMed Pharmaceuticals, Inc.	\$727	Phase Ib/II		
Acceleron Pharma, Inc.	\$1,180	Phase II		
Innate Pharma S.A.	\$517	Phase II		
MacroGenics, Inc.	\$919	Phase II		
Array BioPharma, Inc.	\$1,000	Phase II		
TG Therapeutics, Inc.	\$610	Phase II		
ZIOPHARM Oncology, Inc.	\$919	Phase II		
Bionomics Ltd.	\$171	Phase II		
Verastem, Inc.	\$242	Phase II		
BIND Therapeutics, Inc.	\$107	Phase II		
MEI Pharma, Inc.	\$130	Phase II		
Fate Therapeutics, Inc.	\$105	Phase II		
TetraLogic Pharmaceuticals Corporation	\$113	Phase II		
Cerulean Pharma Inc.	\$168	Phase II		
Endocyte, Inc.	\$223	Phase IIb		
Stemline Therapeutics, Inc.	\$240	Phase IIb		

Source: Oppenheimer & Co.; Google Finance

As of 2pm AEST 9 February 2015



### **Pronounced Valuation Anomaly – Below ASX Peers**

Company	Market Cap (A\$m)	Development Phase		
Cellmid	\$20	Pre-clinical		
Phylogica	\$21	Pre-clinical		
Antisense Therapeutics	\$19	Phase I		
Benitec Biopharma	\$95	Phase I		
Circadian Technologies	\$23	Phase I		
Patrys	\$9	Phase I		
lmugene	\$12	Phase I/II		
Oncosil Medical	\$25	Phase II		
Viralytics	\$56	Phase II		
Innate Immuno Therapeutics	\$31	Phase II		
Bionomics	\$171	Phase II		
Neuren Pharmaceuticals	\$256	Phase II		

Source: Google Finance

As of 2.00pm AEST, 9 February 2015



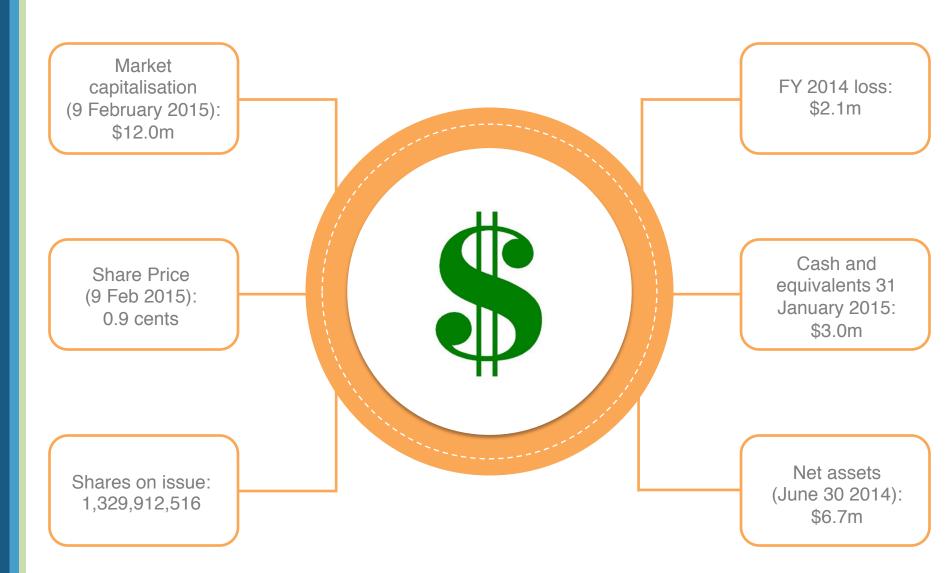
# **Recent Immuno-oncology Licensing Deals**

Date	Licensor	Licensee	Technology/ Product	Dev Status	Amount (USD)	
					Upfront	Total
Jan 15	Agenus	Incyte	Antibody to checkpoint regulators	Preclinical	\$60m	\$350m
Jan-15	Kite Pharma	Amgen	Platform technology	Preclinical	\$60m	\$525m
Dec-14	Spark	Pfizer	AAV targeting technology	Preclinical	\$20m	\$260m
Oct-14	Sutro	Celgene	PD-1 candidates	Preclinical	\$95m	\$1,000m
Oct-14	F-Star	BMS	FS-102 targeting HER-2	Phase I ready	~\$50m	\$475m
Oct-14	NewLink Genetics	Genentech	NLG919	Phase I	\$150m	\$1,150m
Oct-14	Aduro Biotech	Janssen	Several candidates	Discovery	\$30m	\$847m
Aug-14	Emergent Biosolutions	Morphosys	ES414	Preclinical	\$20m	\$183m
Jun-14	Cellectis	Pfizer	CAR-T therapy program	Preclinical	\$80m	\$299m
May-14	CytomX	BMS	Probody platform	Discovery	\$50m	\$348m
Mar-14	Five Prime Therapeutics	BMS	Immuno-oncology therapies	Discovery	\$20m	\$351m
				Average	\$57m	\$526m

Source: Oppenheimer & Co., Company news, internet



### **Financial Information**



Where applicable, currency in A\$



### **Investment Summary**

**High Quality Science** 

- > The subject of numerous peer reviewed published journals
- Medical University of Vienna, one of Europe's leading cancer institutes
- Technology developed over 10 years

Superior Approach Against a Validated Target Unlike many immunotherapies, <u>HER-Vaxx is directed against a validated target</u>, HER-2

- HER-Vaxx addresses the targets of Herceptin and Perjeta combined
- Herceptin and Perjeta have proven synergy
- Herceptin sales of \$6.9bn in 2013

**Robust IP** 

➤ IP portfolio 100% owned with 2030 horizon

Leadership

Leading clinical and scientific experts; experienced and well incentivised management. Board has significant shareholdings, aligning it with shareholders

High Quality Phase II
Trial

➤ HER-Vaxx FDA <u>Phase II trial designed to be robust</u> and big pharma orientated, to support potential future partnership

**News Flow** 

Focused 24 month program to deliver results/value inflection

Competitive Valuation

Attractively priced and heavily discounted to ASX and international peers



## IMUGENE

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