PRIMA BIOMED

NASDAQ: PBMD, ASX: PRR

JANUARY 2017

CORPORATE PRESENTATION

Notice: Forward Looking Statements

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PRIMA BIOMED

Company Overview

- Biopharmaceutical company developing novel immunotherapeutic products for cancer and autoimmune diseases
- Deep expertise and understanding of the LAG-3 immune control mechanism:
  - Prof. Frédéric Triebel (Prima‘s CSO & CMO) discovered LAG-3 in 1990 and is a leading LAG-3 thought leader
  - LAG-3 plays a vital role in the regulation of T cell immune response and is one of the four primary checkpoint inhibitor targets
- Lead product candidate, IMP321 is in ongoing clinical development (Phase IIb + I studies)
  - IMP321 is an antigen presenting cell (APC) activator and fusion protein and is a soluble dimeric form of LAG-3
- Multiple industry partnerships including, GSK and Novartis
- Poised for meaningful news and data flow in 2017

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Directors & Officers

Lucy Turnbull, AO, Non-executive Chairman
Businesswoman and philanthropist; previously on the boards of the Cancer Institute of NSW and Australian Technology Park

Albert Wong, Non-executive Deputy Chairman
Australian investment banker; several directorships

Marc Voigt, Executive Director & Chief Executive Officer
17+ years in leading positions in finance, venture capital and biotech industry

Prof. Frédéric Triebel, MD PhD, CSO & CMO/Immutep S.A.S.
Clinical haematologist, and PhD in immunology (Paris University) and successfully developed several research programs in immunogenetics and immunotherapy, leading to 144 publications and 16 patents

Pete A Meyers, Non-executive Director
CFO of Motif Bio; previous Co-Head of Global Health Care Investment Banking at Deutsche Bank

Russell J. Howard, PhD, Non-executive Director
Scientist entrepreneur; previously CEO of Maxygen & Oakbio, positions at NIH, DNAX, Affymax

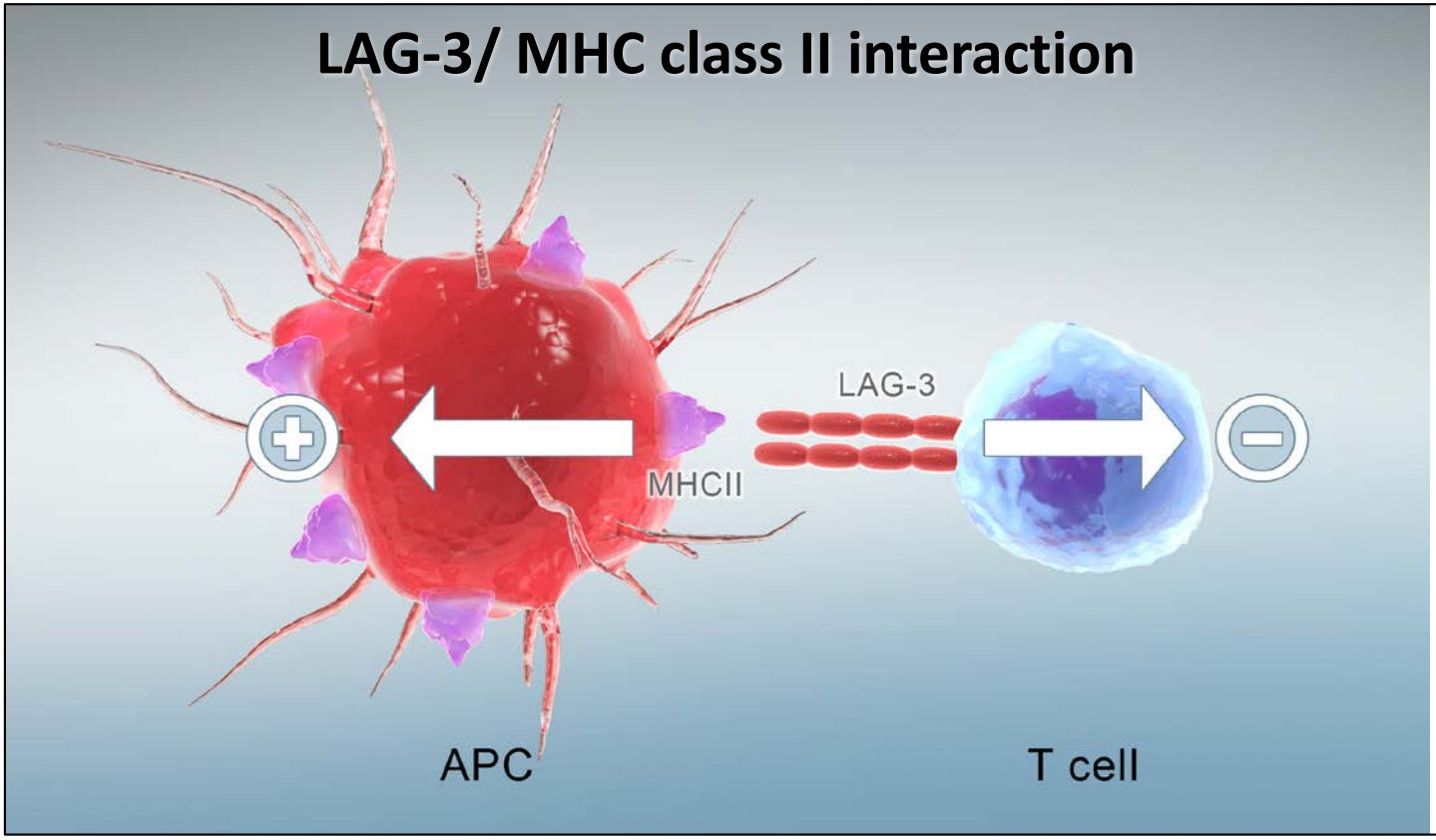
Deanne Miller, General Counsel, Company Secretary & COO
Lawyer; previous positions at RBC Investor Services, Westpac, Macquarie and ASIC

LAG-3 As a Therapeutic Target

- LAG-3 is widely expressed on tumor infiltrating lymphocytes (TILs) and cytotoxic T cells

  → Prime target for an immune checkpoint blocker (such as PD-1)

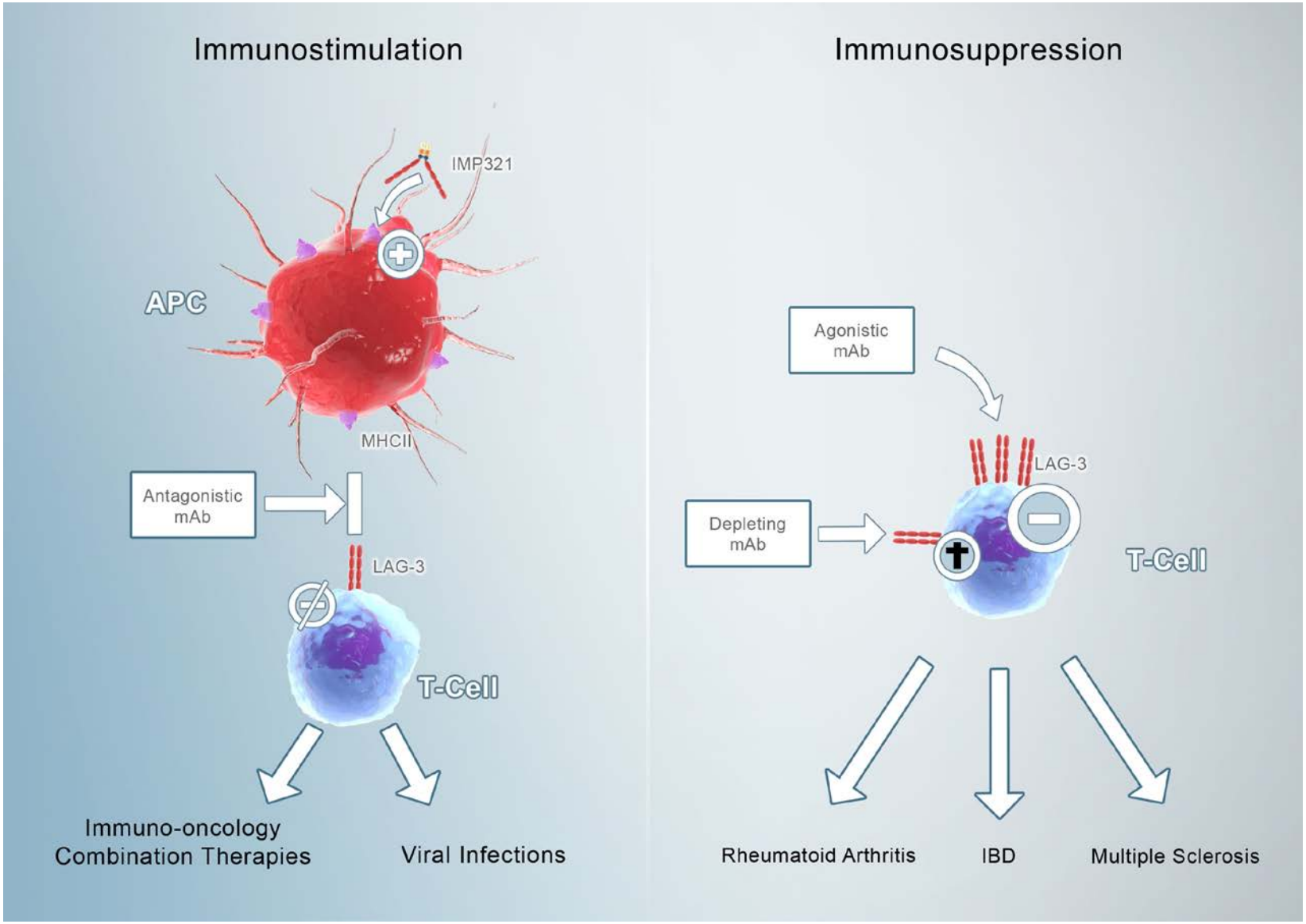
- Functionally similar to CTLA-4 (targeted by Yervoy®) and PD-1 (Keytruda®)



→ **Positive regulation** of antigen presenting cells (APC) → increase in antigen presentation to cytotoxic $CD8^+$ T cells (primary MoA)

→ **Negative regulation** of $LAG\text{-}3^+$ T cells (Secondary MoA)

Targeting LAG-3 May Lead to Multiple Therapeutics in Numerous Indications



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LAG-3 is an Important I-O Target

- In 1990 **Prof. Triebel discovered LAG-3** and subsequently also discovered the LAG-3 ligand MHC class II and its importance in the immune system

- LAG-3 is the subject of 363 PubMed publications:
  - 102 publications of LAG-3 in immune system
  - 141 publications of LAG-3 in context of I-O
  - 16 publications of promising pre-clinical data on LAG-3 and cancer immunotherapy[1]

- Multiple companies developing anti-LAG-3 mAb in pre-clinical and clinical studies (including Prima BioMed and partners)

- LAG-3‘s potential synergistic function with PD-1 and PD-L1 is very promising[1]: *“Simultaneous blockade of LAG-3 and PD-1 synergistically enhance T-cell activity and antitumor immunity in mouse models”*[2]

1 He Y. et al. Lymphocyte-activation gene-3, an important immune checkpoint in cancer. Cancer Sci. 2016 Sep
2 Woo et al. Immune inhibitory molecules LAG-3 and PD-1 synergistically regulate T-cell function to promote tumoral immune escape. Cancer Res. 2012

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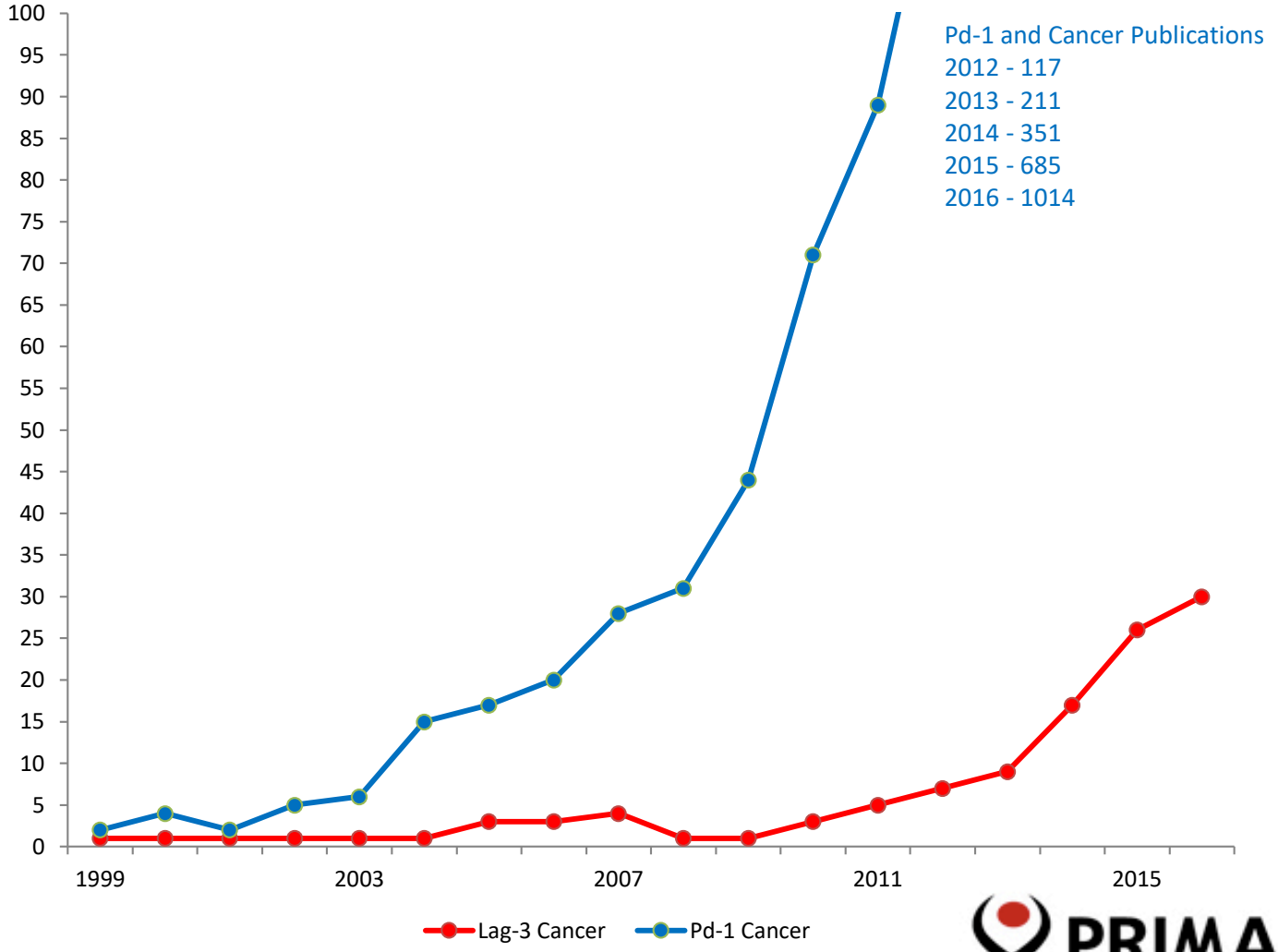
Growing Interest in LAG-3

- Overall understanding and appreciation of the importance of LAG-3‘s role in the immune system continues to grow
- Trajectory of the PubMed articles on LAG-3 cancer is similar to that of PD-1 cancer



PubMed searches of “Lag-3 Cancer“ and “Pd-1 Cancer“ from January 1, 1999 – December 6, 2016

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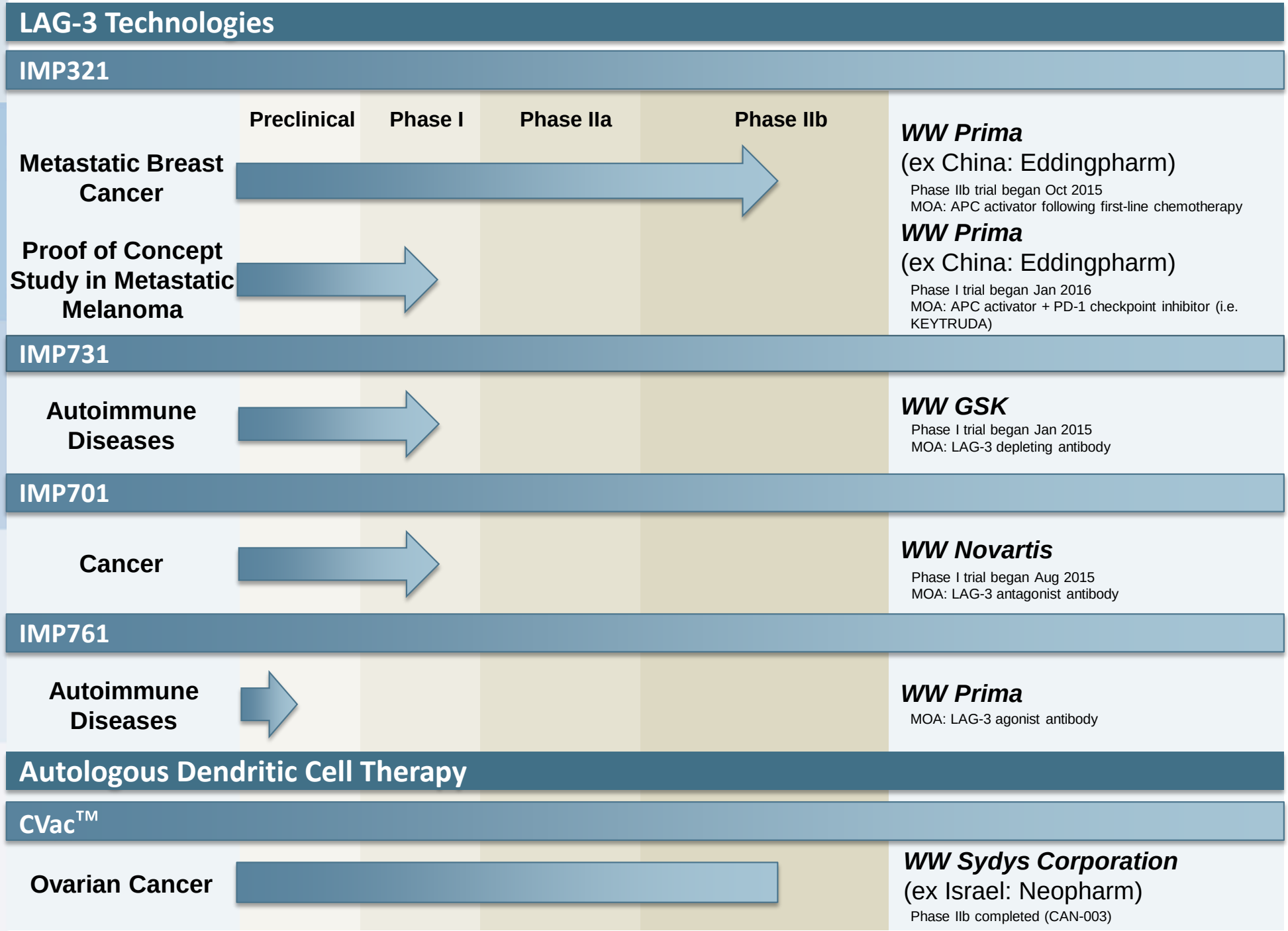
Pipeline


LAG-3 Technologies
IMP321
Preclinical
Phase I
Phase IIa
Phase IIb
Metastatic Breast Cancer
WW Prima
(ex China: Eddingpharm)
Phase IIb trial began Oct 2015
MOA: APC activator following first-line chemotherapy
Proof of Concept Study in Metastatic Melanoma
WW Prima
(ex China: Eddingpharm)
Phase I trial began Jan 2016
MOA: APC activator + PD-1 checkpoint inhibitor (i.e. KEYTRUDA)
IMP731
Autoimmune Diseases
WW GSK
Phase I trial began Jan 2015
MOA: LAG-3 depleting antibody
IMP701
Cancer
WW Novartis
Phase I trial began Aug 2015
MOA: LAG-3 antagonist antibody
IMP761
Autoimmune Diseases
WW Prima
MOA: LAG-3 agonist antibody
Autologous Dendritic Cell Therapy
CVac™
Ovarian Cancer
WW Sydys Corporation
(ex Israel: Neopharm)
Phase IIb completed (CAN-003)

LEAD PRODUCT IMP321

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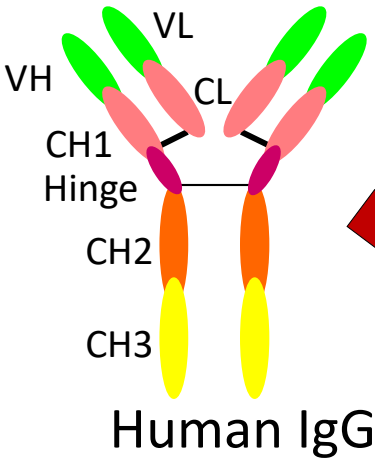
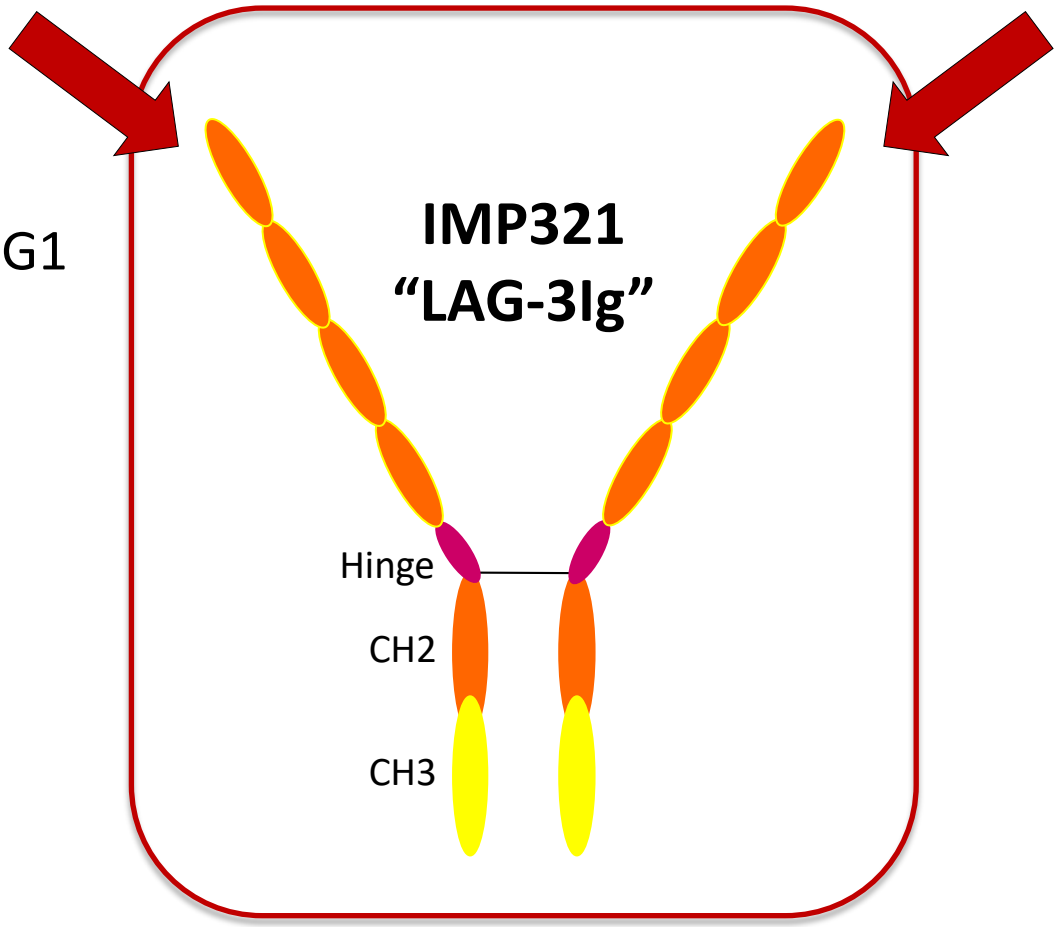
IMP321



Human IgG1

Soluble LAG-3



- **Soluble recombinant form of LAG-3**
- Human fusion protein
- Dimeric, very stable, high affinity for DC
- Antigen presenting cell (APC) activator
- **Unique and first-in-class**

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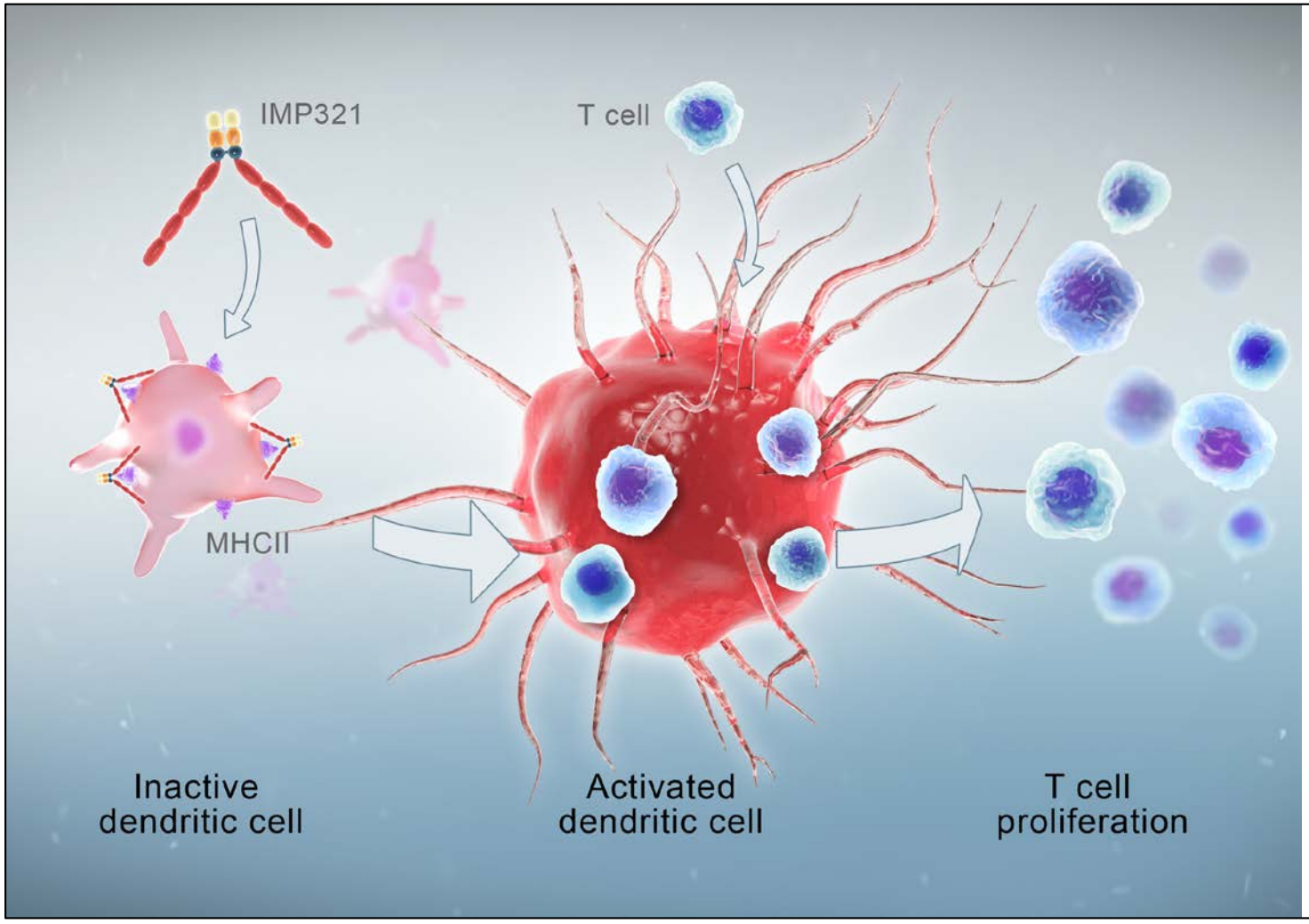
IMP321

Soluble dimeric recombinant form of LAG-3Ig (fusion protein)



→ IMP321 binds to MHC class II on monocytes

→ DC/ monocyte activation induced

→ Leads to T cell expansion and proliferation

- Highly efficacious in multiple animal models of cancer and infectious disease
- Shown to be safe, non-immunogenic and efficacious in humans

(Clin Cancer Res. 2008 Jun 1;14(11):3545-54)

IMP321 – Potential Applications

Potential combination therapy strategies:

- **Chemo-immunotherapy** in various cancer indications
  - Combination therapy with active agents such as Taxanes (e.g. Paclitaxel), anthracyclines, alkylating agents, anti-metabolites, vincas…
- **I-O combination** in various cancer indications
  - With PD-1, PDL-1 or CTLA-4 antagonists…
- **Cancer vaccine**
  - To locally stimulate the immune system

IMP321 - CLINICAL DEVELOPMENT

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IMP321 – Clinical Development

1. Chemo-immunotherapy:

- IMP321 in combination with paclitaxel (immunogenic chemotherapy) in metastatic breast cancer → potentially pivotal trial in Europe ongoing (**AIPAC**)

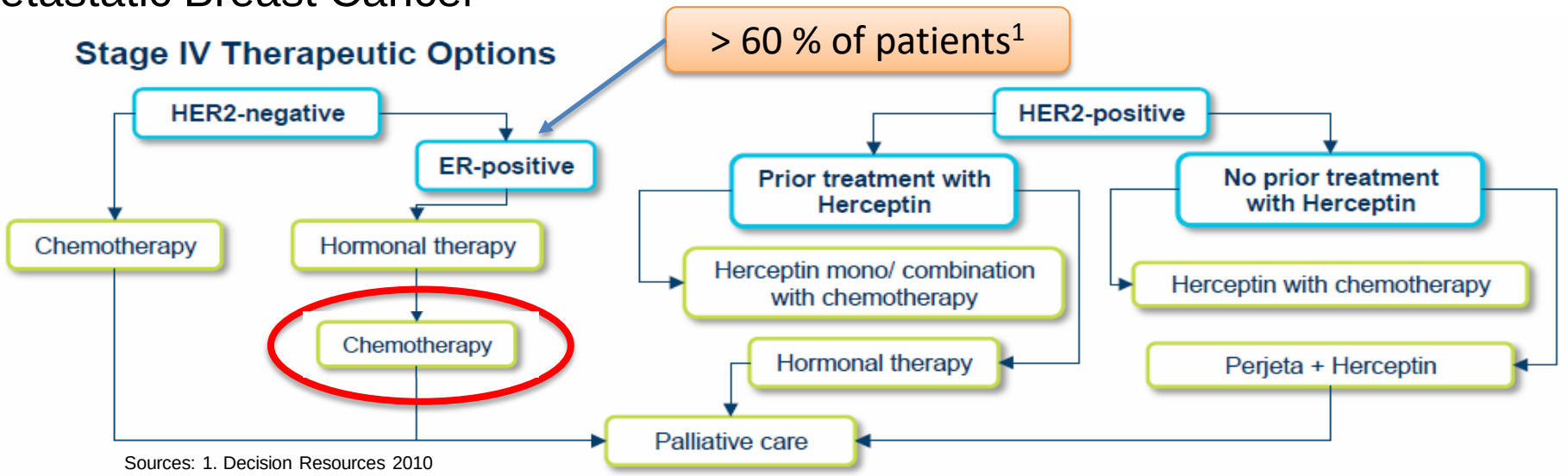
2. I-O Combination:

- IMP321 in combination with pembrolizumab as a treatment for melanoma → phase I dose escalation trial ongoing (**TACTI-mel**)

IMP321 in Metastatic Breast Cancer (MBC)

Potential Approval Pathway

Metastatic Breast Cancer



→ **<u>Primary target population for IMP321 is HR^{+}/HER2neu^{-} MBC</u>**

- After hormone therapy → taxane/anthracycline based chemotherapy
- Median PFS/OS at the start of chemotherapy is between 5-9 months/~24 months

→ Unmet medical need with no major improvements in recent years

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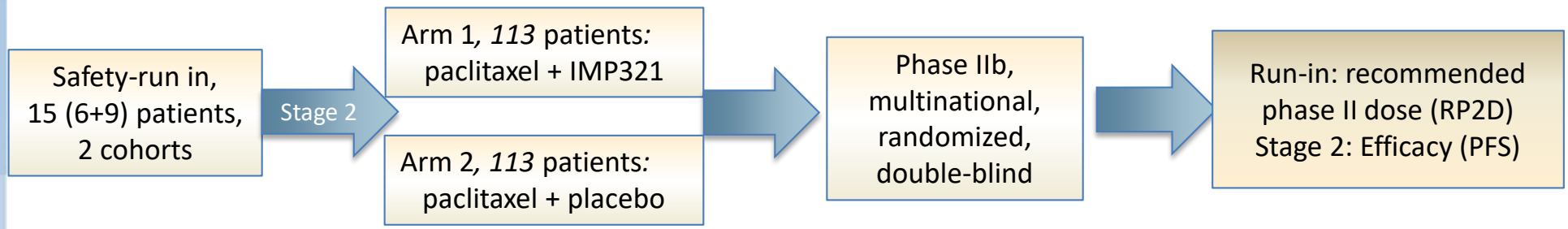
IMP321 in MBC

AIPAC (chemo-immunotherapy)

AIPAC trial (phase IIb): Active Immunotherapy PAClitaxel, MBC patients, different EU countries



Primary Objective	Run-In: Recommended phase II dose Stage 2: Efficacy (PFS) of paclitaxel + IMP321 vs. paclitaxel + placebo
Other Objectives	Anti-tumour activity of IMP321, safety and tolerability of IMP321, pharmacokinetic and immunogenic properties of IMP321, quality of life
Patient Population	Advanced MBC indicated to receive first line chemotherapy with weekly paclitaxel
Treatment	Run-in: IMP321 (6 or 30 mg) + Paclitaxel Arm 1: Paclitaxel + IMP321 Arm 2: Paclitaxel + Placebo
Countries	NL, BE, HU, UK → overall 30-35 sites in 5 -7 countries planned

Status report

✓Safety run-in completed successfully

✓Both dose levels (6 + 30 mg) of IMP321 confirmed to be safe w/o DLTs by DEC at 30th Dec 2016

- Randomized phase to start early 2017
- Interim-data of safety run-in expected mid of 2017

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AIPAC – Initial Data

Safety as of Dec 2016:

- **6 mg IMP321 + Paclitaxel (n=6):**
  - No DLTs, well tolerated and safe; increase of CD8 T-cell and monocyte count after treatment with IMP321

- **30 mg IMP321 + Paclitaxel (n=9)**
  - No DLTs, well tolerated and safe; increase of CD8 T-cell and monocyte count after treatment with IMP321

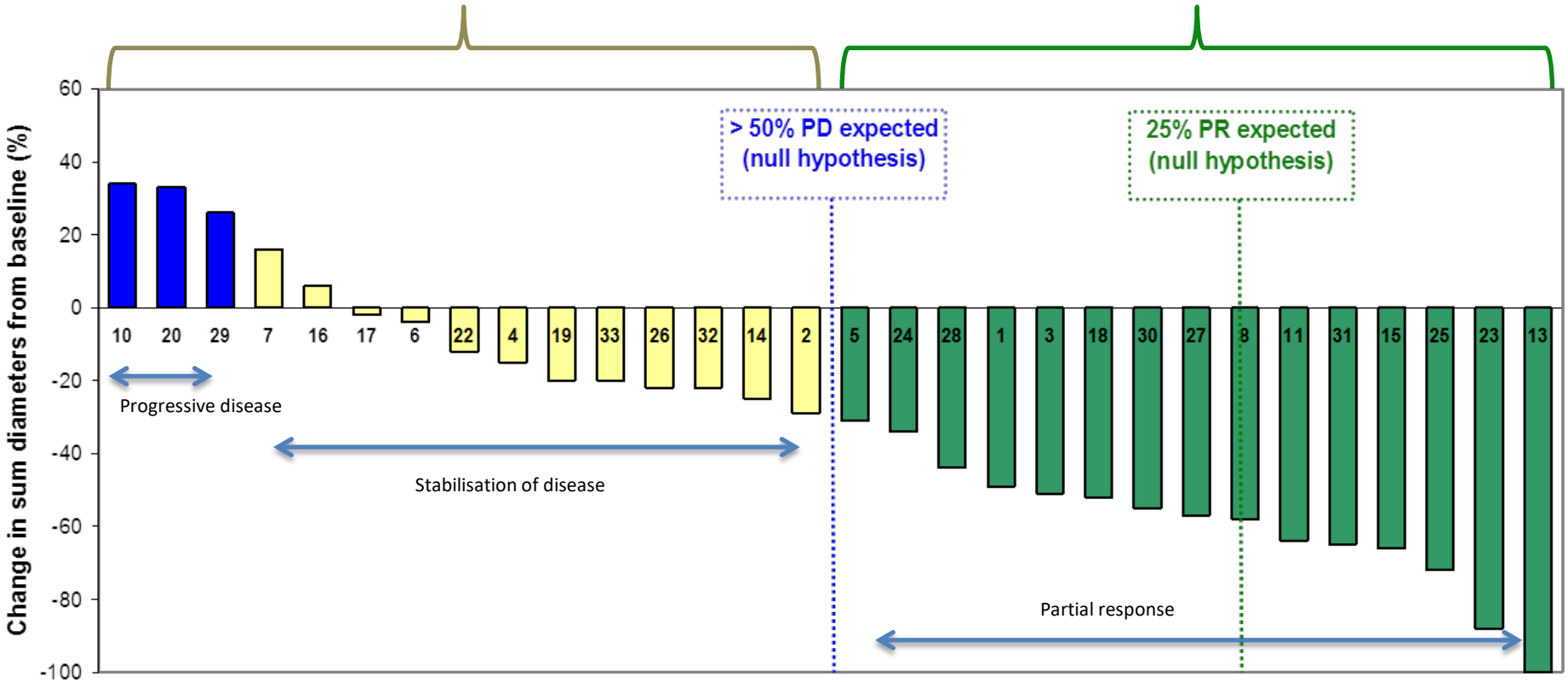
IMP321 in MBC

Completed Studies - Efficacy

Efficacy results of a phase I trial of IMP321 + paclitaxel in MBC compared to historical paclitaxel monotherapy*

Clinical benefit: Only 10 % of IMP321 patients progressed in contrast to more than 50% of patients in the historical control group

A 50% response rate was observed in IMP321 patients versus 25% in the historical control group receiving chemotherapy alone



* 254 patients with measurable disease at baseline on weekly, 3 weeks out of 4, paclitaxel (ECOG 2100 study); J Clin Oncol. 2009 Oct 20;27(30):4966-72.

Brignone *et al. Journal of Translational Medicine* 2010, **8**:71
http://www.translational-medicine.com/content/8/1/71

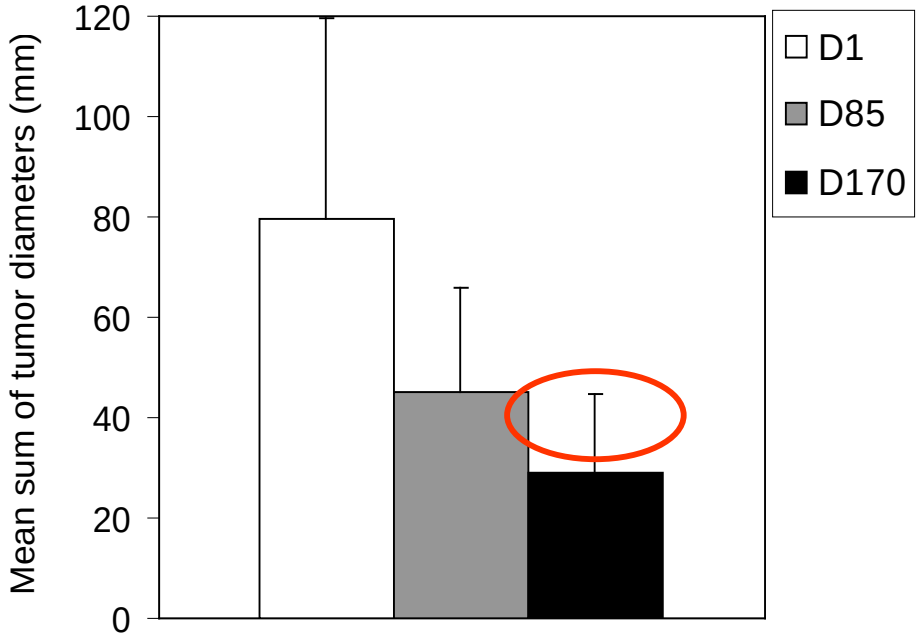
IMP321 in MBC

Completed studies - Efficacy

Efficacy results of a phase I trial of IMP321 + paclitaxel in MBC "Late response effect"

→ Clear evidence of immune involvement

- Further tumor regression between day 85 and day 170 *which is not seen with chemo alone*
- Such late responses are *characteristic of immunotherapy*



Brignone *et al. Journal of Translational Medicine* 2010, **8**:71
http://www.translational-medicine.com/content/8/1/71

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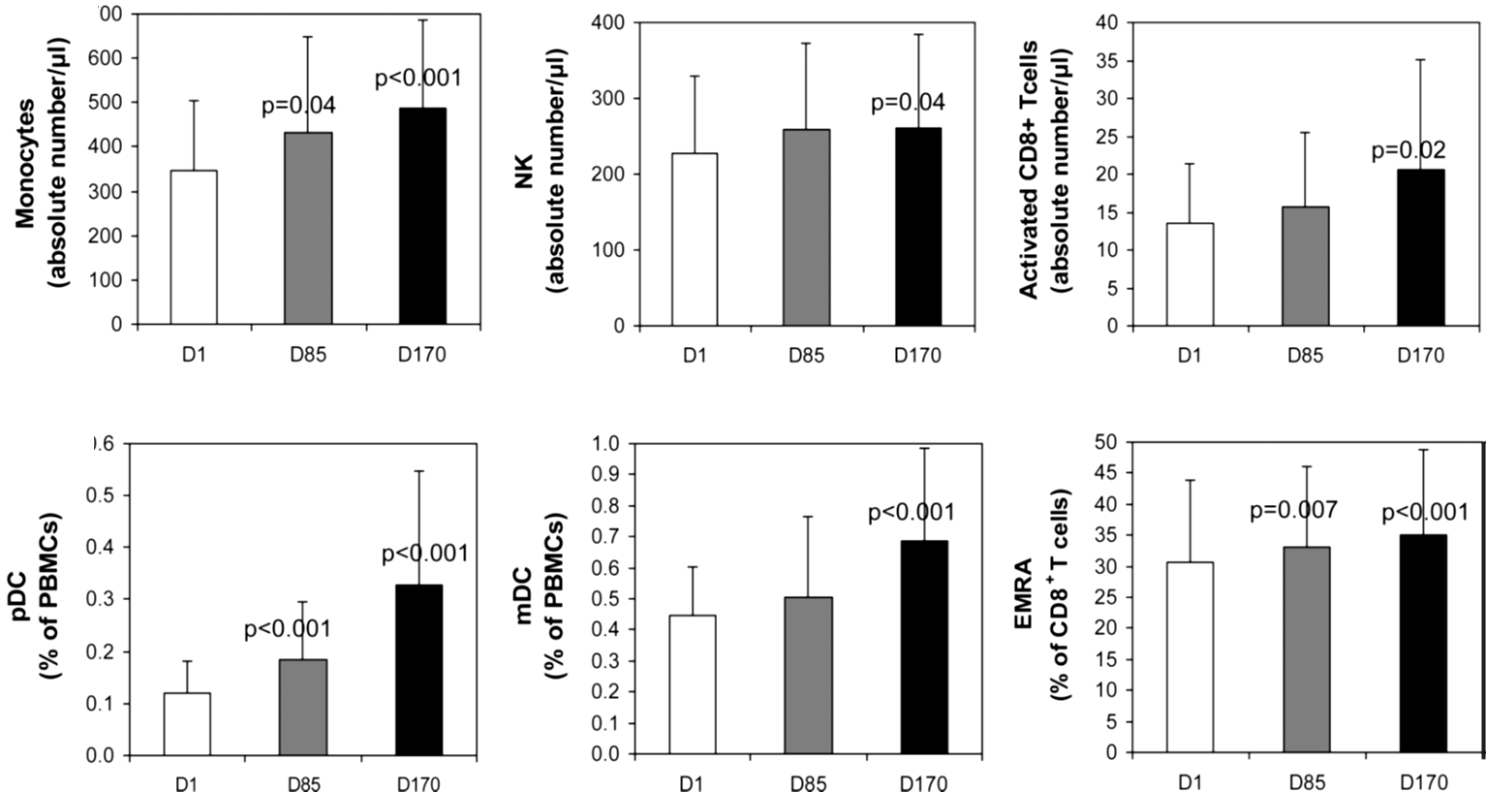
IMP321 in MBC

Completed studies –"Proof of principle"

- Increased primary (monocytes and dendritic cells (DC)) and secondary target (Natural killer (NK) cells and activated CD8 and memory CD8 T cells) cell counts
- **Sustained for ≥ 6 months** (analyzed 13 days after the last injection and before the next IMP321 injection)



Brignone *et al. Journal of Translational Medicine* 2010, **8**:71
http://www.translational-medicine.com/content/8/1/71

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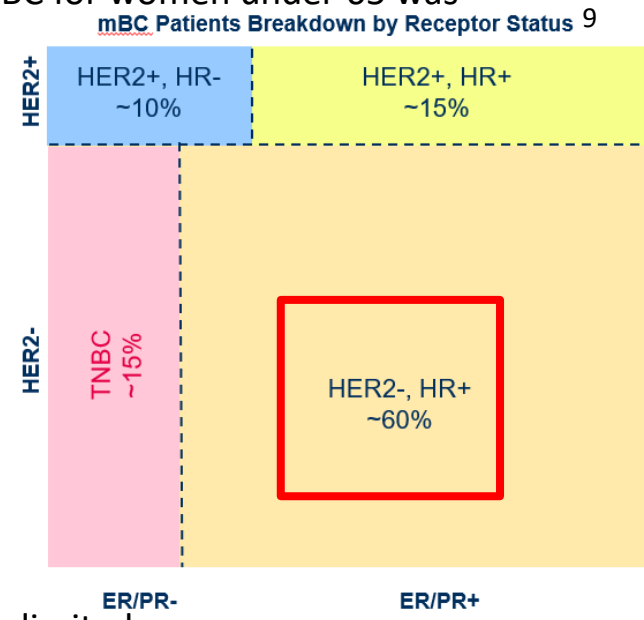
IMP321 MBC Market Opportunity

- **30%** of breast cancer patients are metastatic (at diagnosis or more frequently through recurrence)[1] and 2 out of 3 are HR positive[2]
- Metastatic breast cancer (MBC) patients have a **median survival** of **2-4 years**[3]
- **5-year relative survival rate** is only approximately **22%**[4,5]
- MBC currently remains almost **incurable**[6]
- In the U.S., **annual indirect cost to society** attributable to MBC for women under 65 was estimated to be **over US$ 572 million** including[7]:

US$ 270 million	Premature deaths
US$ 253 million	Lost productivity
US$ 50 million	Caregiving

The global breast cancer treatment market will reach **US$17.2 billion** by 2021.[8]



Primary target patients

- $HER2^{-}$ HR^{+} patient group is our primary target: currently only hormone therapy followed by chemotherapy is applied with limited outcome improvement[9]

Other fields will follow → label extension

1. O'Shaughnessy J. Extending survival with chemotherapy in metastatic breast cancer. The Oncologist. 2005
2. American Cancer Society. (2014). Hormone therapy for breast cancer. Breast Cancer. Accessed on September 30, 2014 from http://www.cancer.org/cancer/breastcancer/detailedguide/breast-cancer-treating-hormone-therapy.
3. Mosher, C. E., Johnson, C., Dickler, M., Norton, L., Massie, M. J., DuHamel, K. (2013). Living with metastatic breast cancer: A qualitative analysis of physical, psychological, and social sequelae. Breast J, 19, 3, 285-92.
4. http://www.cancer.org/cancer/breastcancer/detailedguide/breast-cancer-survival-by-stage
5. Madell, R. Metastatic breast cancer: Life expectancy and prognosis. Healthline. 2014 at http://www.healthline.com/health/breast-cancer/metastatic-prognosisF# Overview1.
6. American Cancer Society. (2013). Detailed Guide: Breast cancer. American Cancer Society. Accessed on September 6, 2014 at http://www.cancer.org/acs/groups/cid/documents/webcontent/003090-pdf.pdf.
7. Sorensen , S. V. et al. (2012). Incidence-Based Cost-Of-Illness model for metastatic breast cancer in the United States. International Journal of Technology Assessment in Health Care, 28, 1,http://dx.doi.org.proxy1.athensams.net/10.1017/S026646231100064X.
8. http://www.researchandmarkets.com/research/mg3gms/breast_cancer
9. Decision Resources 2010

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IMP321 in Melanoma

TACTI-mel (I-O combination)

TACTI-mel trial: Two ACTive Immunotherapeutics in melanoma

18 patients, 3 cohorts of 6 patients → IMP321 + anti-PD-1 (Keytruda®) → Phase I, multicenter, open label, dose escalation → Recommended phase II dose Safety and tolerability

Primary Objective	Recommended dose for phase II (RP2D) with IMP321 + pembrolizumab Safety + tolerability
Other Objectives	PK and PD of IMP321, response rate, time to next treatment, PFS
Patient Population	Unresectable or metastatic melanoma with asymptomatic or suboptimal response after 3 cycles of pembrolizumab
Treatment	3 cohorts: 1/6/30 mg IMP321; s.c. q2w + pembrolizumab; starting with the 5th cycle of pembrolizumab

Status report

✓First dose escalation (1 → 6 mg) successfully confirmed by DSMB in Dec 2016

• Start of cohort 2 (6 mg) in Jan 2017

• Enrolment completion expected in 2017

6 sites in Australia

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IMP321: COMPETITIVE LANDSCAPE

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Competitive Landscape: APC Activators

- Agonist anti-CD40 mAb: in development with anti-PDL-1 antibody by F. Hoffmann-La Roche Ltd

  Phase Ib, 135 patients with locally advanced and/or metastatic solid tumors, estimated completion in Dec. 2017

- Toll-Like Receptors
  - Dynavax (DVAX) – TLR9 agonist SD101 (in trials with Keytruda)
  - Immune Design (IMDZ) – TLR4 agonist
  - Celgene (CELG) partnered with VentiRx (private) for TLR8 agonist

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LAG-3 Competitive Landscape (Blocking mAbs)

Clinical Programs							Estimated	
Product Candid	Company	Condition	Combination	Phase	Status	Start Date	Enrollment	Study Completion
BMS 986016	BMS	Glioblastoma; Gliosarcoma; Recurrent Brain	Nivolumab	1	Recruiting	August 2016	68	December 2019
BMS 986016	BMS	Neoplasms by Site	Nivolumab	1	Recruiting	October 2013	360	October 2019
BMS 986016	BMS	Hematologic Neoplasms	Nivolumab	1/2a	Recruiting	February 2014	132	January 2020
BMS 986016	BMS	Advanced Gastric Cancer	Nivo/ Ipi	2	Recruiting	November 2016	910	November 2021
BMS 986016	BMS	Advanced Cancer	Nivo/ Ipi/ Dasatinib	2	Recruiting	May 2016	504	April 2021
BMS 986016	BMS/Ono	Cancer	Nivolumab	1	Recruiting	November 2016	27	July 2020
BMS 986016	BMS	Advanced Renal Cell Carcinoma	Nivo/ Ipi	2	Not Open	January 2017	650	January 2022
MK4280	Merck & Co. Inc.	Advanced Cancer	Pembrolizumab	1	Recruiting	May 2016	70	August 2020
REGN3767	Regeneron/ Sanofi	Malignancies	REGN2810	1	Recruiting	November 2016	283	July 2020
GSK2831781	GSK*/ Parexel	Psoriasis	---	1	Recruiting	July 2014	67	July 2018
LAG525	Novartis*	Advanced Solid Tumors	PDR001	1/2	Recruiting	June 2015	416	October 2016

Preclinical Programs		
Company (program)	Program	Condition
Agenus/ Incyte		Cancer
Boehringer Ingelheim/ Sarah Cannon Research Institute	754091(anti- PD-1) and BI 754111 (anti-LAG 3)	Cancer
Macrogenics	(MGD013)	Cancer
Peregrine Pharmaceuticals		Cancer
RXi Pharmaceuticals/ MirImmune		Cancer
Tesaro	(TSR-033)	Cancer

* Prima partner

Sources: company websites, clinical trials.gov, Biomedtracker, Medtrack, Datamonitor, and sec.gov

As of January 3, 2017

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PARTNERED PROGRAMS

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IMP731 for Autoimmune Diseases

GSK's investigational product, GSK2831781, which is derived from IMP731 antibody, aims to kill the few activated LAG-3^{+} T cells that are auto-reactive in autoimmune disease leading to long term disease control without generalized immune suppression

- GlaxoSmithKline holds exclusive WW rights to IMP731
- Jan 2015: Prima announced a single-digit million US$ milestone
- Up to £64m in total upfront and potential milestones + royalties
- Study completion date: April 2018 with 63 pts. (see http://www.gsk-clinicalstudyregister.com/study/200630#ps)
- GSK2831781 in Phase I trials with potential regulatory filing expected within 2021-2025 timeframe (See from slide 108 of GSK investor presentation, 11/03/15)
- European Patent grants with patent number 142210 in August 2016

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IMP701: Antagonist mAb for cancer

IMP701 is an anti-LAG-3 mAb that blocks LAG-3-mediated immune down-regulation

LAG-3 is a prime target for immune checkpoint blockade as it is readily expressed at a high level in many human tumors.

- Novartis holds exclusive WW rights
- Aug 2015: Start of Phase I study by Novartis
- 13 different indications
- Estimated study completion date is October 2018
- Enlarged enrollment from 240 up to 416 pts.
- LAG-525 is used in combination with PD-1 in solid tumors

IMP761

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IMP761: Key Properties

- IMP761: humanized IgG4 monoclonal antibody
- First ever agonist of LAG-3
- Pre clinical stage:
  - In vitro: √
  - In vivo: during 2017
- Supposed MoA: temporarily switching off activated LAG-3+ T cells

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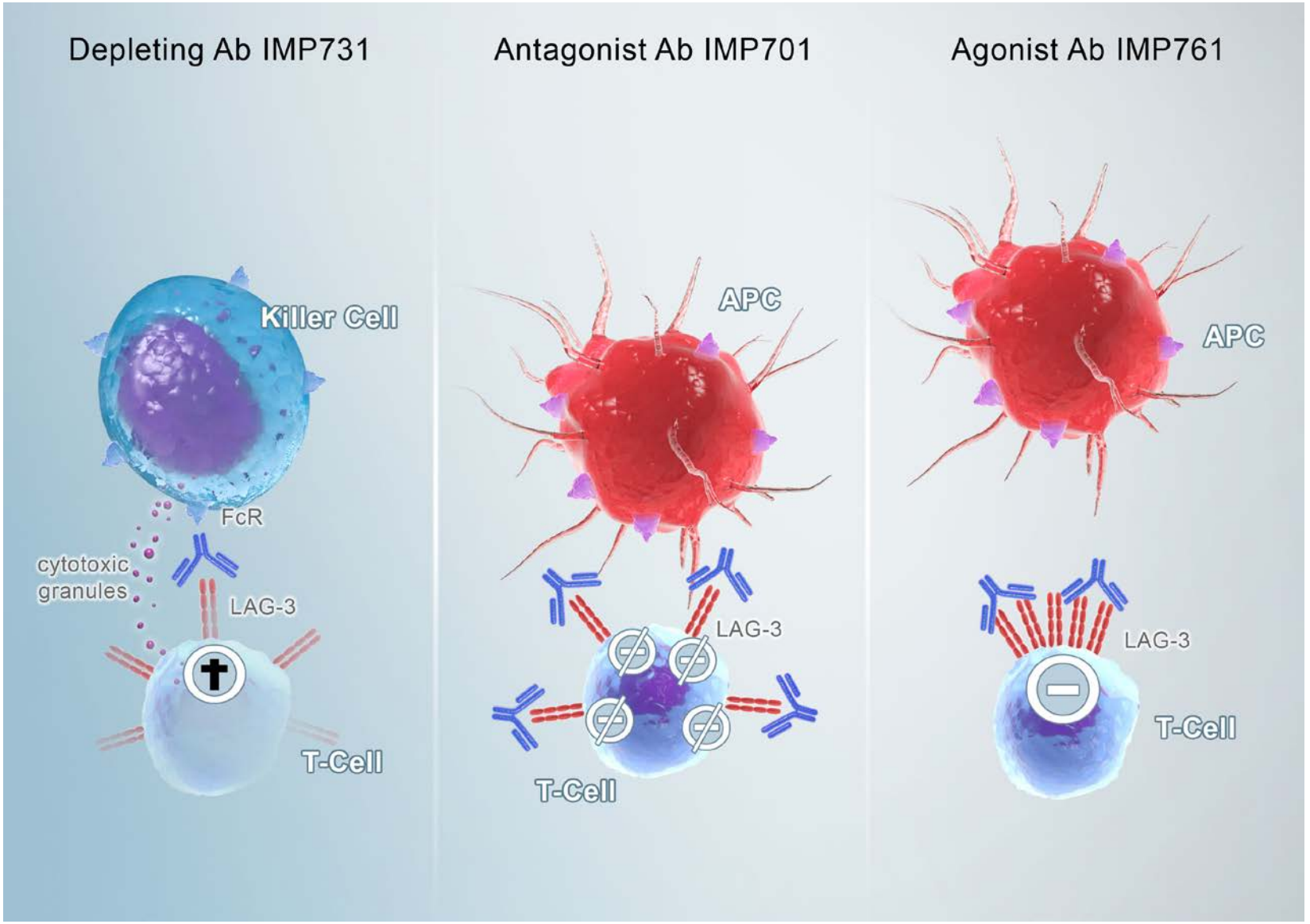
IMP761: a different MoA



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POTENTIAL MILESTONES

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Expected LAG-3 data (2017)

- IMP321
  - AIPAC: immune monitoring and activity data (safety run-in phase), mid 2017
  - TACTI-mel: further dose escalation, safety and activity data throughout 2017
- IMP761: preclinical data
- IMP701: program updates
- IMP731: program updates

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Corporate Snapshot

Ticker symbol	PBMD (NASDAQ - ADRs) PRR (Australian Securities Exchange)
Securities on issue*	2.07 billion ordinary shares 77.38 million listed options @ A$0.20 6.3 million issued ADRs***
Cash & Term Deposits**	~A$16.57 million
Market Cap*	A$74.63 million (US$54 million)
Avg. Vol. (3 m)*	1,122,580 ordinary shares on ASX 156,890 ADRs on NASDAQ
Grant Support:	Australian tax credit (43.5% of eligible R&D spent) French tax credit (30% of eligible R&D spent)

**Market references as of 2nd Jan 2017 summarizing listed securities on issue. For a detailed summary of all securities on issue refer to latest Appendix 3B released on ASX.*

*** As of 31st of Dec 2016*

**** As of 28th December 2016 (i.e. the effective date of the announced ADR ratio change) each ADR represents 100 ordinary shares. Previously 1 ADR represented 30 ordinary shares.*

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Thank you!