Developing personalized bio-therapeutics

Investor Presentation
October 2012

ASX:PRR; NASDAQ:PBMD; ISIN:US74154B2034

PRIMA BIOMED LTD
Australian Cancer Treatment Company

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Prima Biomed: Snapshot

Key metrics

ASX Code:	PRR (Australian Stock Exchange)
Shares on issue*:	1,066.1 million
Share Price*:	A$0.145
Market Capitalization*:	~A$155m
Cash Position:	A$38.0m (as at 30 June 2012)
Avg Daily Trading Volume*:	~A$0.8m

Board of Directors

Ms. Lucy Turnbull AO	Chairman
Mr. Albert Wong	Deputy Chairman
Mr. Matthew Lehman	Managing Director and Chief Executive Officer
Mr. Martin Rogers	Non-Executive Director
Dr. Richard Hammel	Non-Executive Director

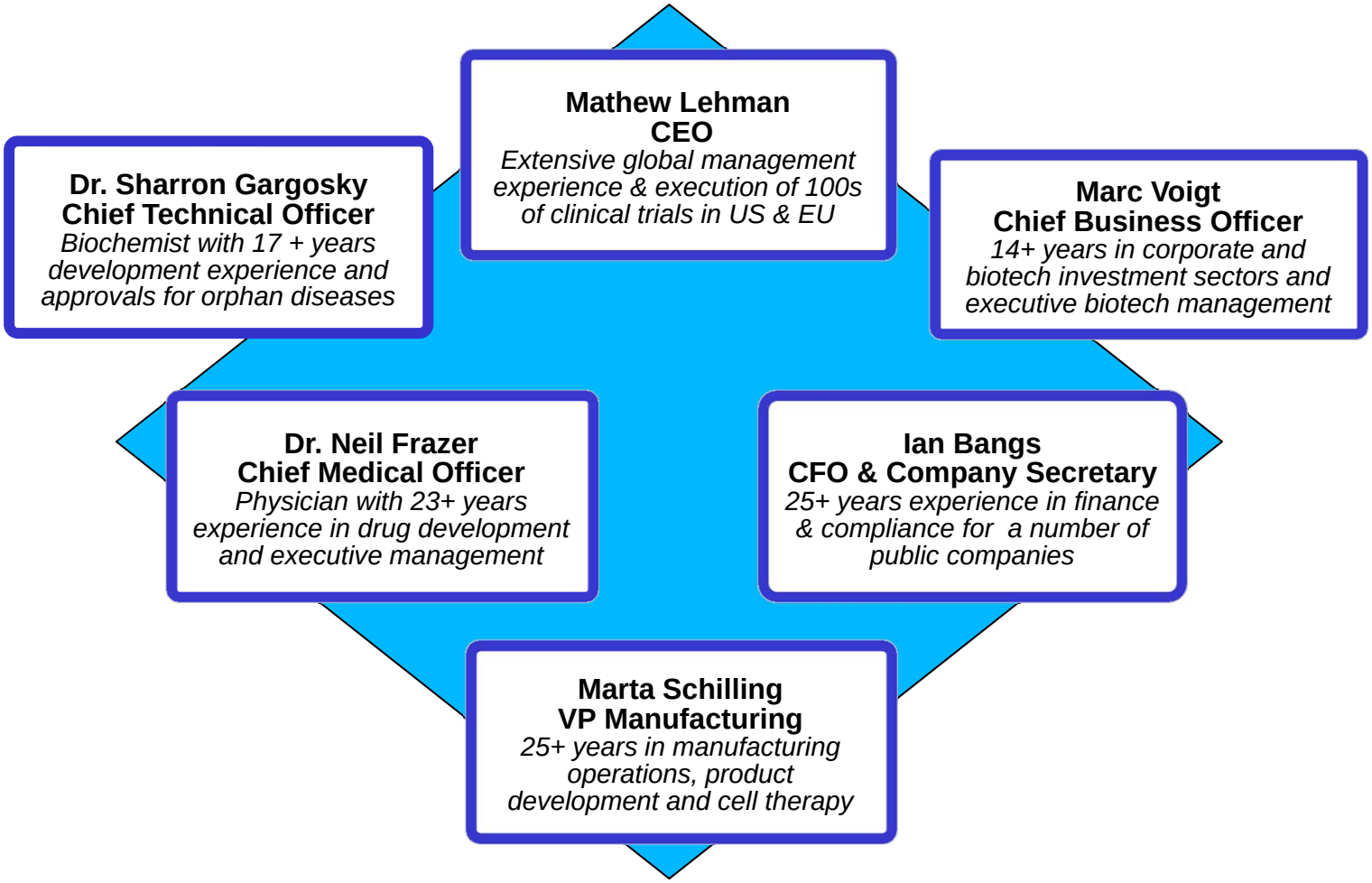
**All market references as at 15 October*

Prima BioMed: Mission

- Mission: Develop **novel** and **high-value personalized bio-therapeutic** products with a focus in immune cell therapy for oncology.
- Lead product: **CVac™** is made of autologous dendritic cells pulsed with mannan-mucin-1 fusion protein. In advanced clinical development for **ovarian cancer**.
- CVac potential: **overexpressed** protein **Mucin-1** is also present in other cancers such as breast, renal, bladder, colon, pancreas, lung and stomach.
- Background: Intellectual property and early research developed by the Austin Research Institute (now Burnet Institute) in Melbourne, Australia
- Technology: **Global platform** (formulation, manufacturing, regulatory, distribution) for development of personalized bio-therapeutics

Prima BioMed is a world leader in the development of personalized bio-therapeutics

Prima BioMed: Leadership



General Cancer Market

- Estimated **24.6 million** people in the world living with cancer
- World Health Organization (WHO) has predicted: global cancer incidence will increase by **50% between 2000 and 2020**
- Cancer becomes increasingly common in both developed and developing countries due to **the increasing age** of the population, **unhealthy lifestyles** as well as better and earlier diagnostics and detection, there is a significant need for new, innovative therapies
- Cancer is one of the largest, most rapidly growing markets in the pharmaceutical industry
- World oncology market expected to surpass $78 billion by 2012

Ovarian cancer – an unmet medical need

- Annual incidence of epithelial ovarian cancer in Australia & “major markets” (USA, Japan, UK, Germany, France, Italy, Spain) ~ 61,283 p.a. (2010)
- 70-75% diagnosed in late stage ~ 44,400 p.a.
- 70-80% of those achieve remission ~ 33,300 p.a.
- Since ovarian cancer is generally diagnosed at a late stage, only 20-30% of patients with late stage disease survive for 5 years*
- A maintenance treatment like **CVac™** would be the first of its type in this **new market** and the company has potential to achieve market penetration within the first year
- The global market size for ovarian cancer therapy expected to surpass **$US1.2bn in 2012**

** Thomson Business Intelligence, Ovarian Cancer Therapeutics Industry Analysis 2007*

Immunotherapy for cancer

- Induce and/or enhance a body's immune response to target and kill cells that express certain antigens
- Immunotherapy has the potential to be highly ***potent*** and ***specific*** against tumor cells with an ***excellent safety and toxicity*** profile
- Research into cancer immunotherapy has led to recent regulatory approval success:
  - Dendreon's Provenge® approval in 2010 (FDA)
  - Bristol-Myers Squibb's Yervoy® approval in 2012 (FDA)
- Key concepts for development:
  - ❖ *Selection of antigen(s) target*
  - ❖ *Management of manufacturing and logistics*
  - ❖ *Choosing the patients most likely to benefit*

Prima's Technology & Platform

- ***Cryopreserved cell formulation***
  → minimizes cell collections (leukapheresis procedures) from patients and reduces cost

- ***Intradermal injections***
  → maximizes delivery of maturing dendritic cells to drain to lymph nodes and migrate to tumor cells

- ***Automated logistics***
  → labeling with bar codes and digital management of the entire supply chain minimizes errors and optimizes use of human resources and facilities

Prima's Technology & Platform

- ***Cell collection expertise***
  → 40+ qualified and trained cell collection centers worldwide to provide material for high-quality products

- ***Global breadth***
  → experience in tech transfers, comparability protocols, and regulatory licensing of manufacturing facilities in Australia, USA and Germany

- ***Mucin-1 multiple opportunities***
  → mucin-1 is overexpressed on numerous other cancer types; Prima has a unique immunogenic sequence and companion diagnostic to move in other indications

- ***New product opportunities***
  → ability to grow the pipeline based on company strengths

CVac™
Targeting Ovarian Cancer

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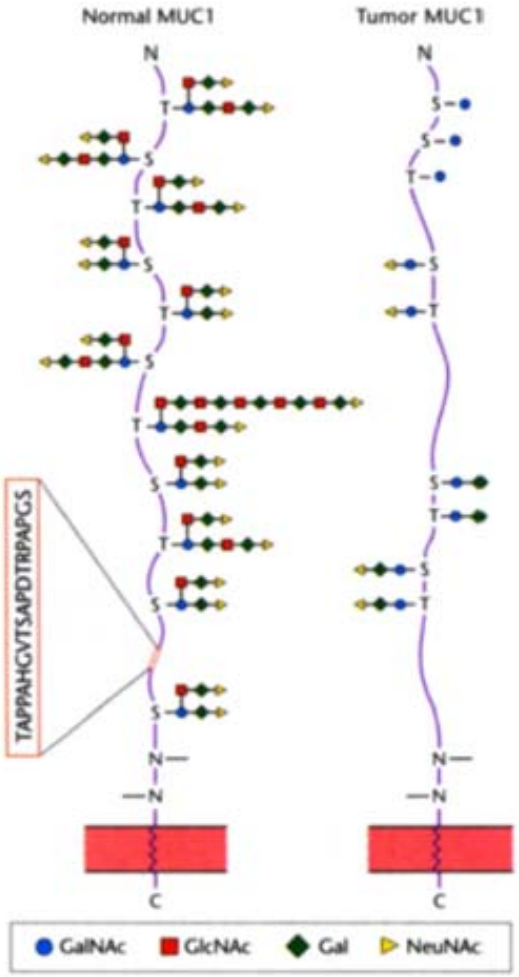
CVac - Prima's Lead Product

- **Autologous dendritic cells (DC)** pulsed with recombinant human fusion protein (mucin-1–glutathione-S-transferase) coupled to oxidized polymannose (mannan)
- In development to treat epithelial **ovarian cancer** patients in complete remission after first-line surgery and chemotherapy
- Excellent safety profile to date **(3 clinical trials)**
- Global, well-designed Phase II/III trial **("CANVAS")** underway
- Recently released data yields important positive trends
  - Mucin 1 specific cellular response
  - Increasing time in remission for ovarian cancer patients

Antigen Target: Mucin-1

Normal MUC1

- more complex O-linked sugar chains
- glycosylated
- tandem repeat sequence (VNTR-variable number tandem repeat)

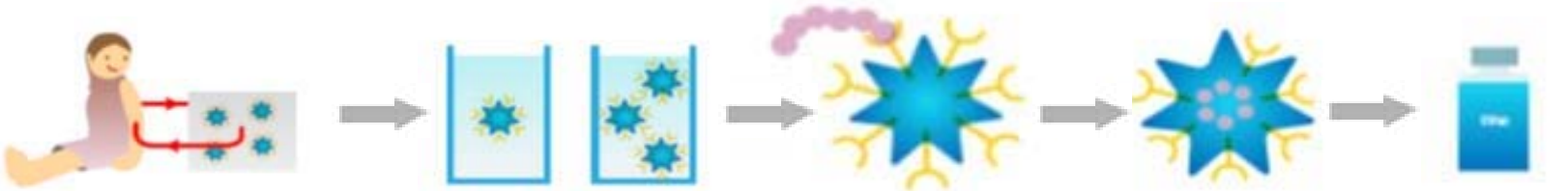


Tumor MUC1

- simpler and fewer sugar chains
- underglycosylated
- “naked“ structure carbohydrate and peptide epitopes are exposed

CVac Overview

Manufacturing of CVac



MNCs (white blood cells) taken from the patient by apheresis and sent to lab

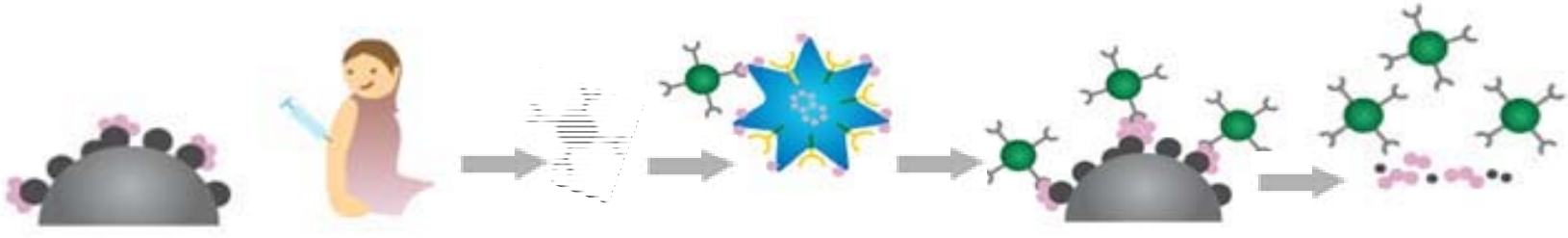
MNCs separated and matured to decdritic cells (DCs) with growth factors

DCs are pulsed with the antigen Mannan-Mucin-1 Fusion Protein (MFP)

Mucin-1-antigen is internalized by the DCs

The DCs washed, formulated, and frozen as 1ml vials

Mechanism after injection



Mucin-1 is overexpressed on ovarian cancer cells

Cvac administered as 4 intradermal injections at each dose

CVac activates CD8+ T-cells specific to mucin 1

T cells target mucin 1 overexpressed on cancer cells

T cells kill cancer cells

Cell Therapy - A new paradigm for the treatment of cancer

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Clinical development

Phase	Name	Indication	Patients
I	CAN-001	Terminal cancer adenocarcinoma (breast, ovarian, fallopian tube, colon, lung, oesophageal)	10
II	CAN-002	**Ovarian cancer** patients with no further treatment options	28
II	CAN-003	**Ovarian cancer** patients in remission after 1st or 2nd line therapy	63
II	CAN-003x	**Ovarian cancer** patients who have progressed on CAN-003	~20 (est)
II/III	CAN-004	**Ovarian cancer** patients in remission after 1st line surgery and chemotherapy	800 (est)

CAN-003 Study Overview

- Protocol:
  - 63 epithelial ovarian cancer patients enrolled in complete remission after successful 1st or 2nd line chemotherapy
  - 7 non randomized CVac; 29 randomized to CVac; 27 to observation standard of care
- Objectives:
  - Primary: progression free survival (PFS) as defined by CA-125
  - Overall survival (OS)
  - Prove biological activity by intracellular cytokine staining (ICS)
  - Establish comparability between 2 global manufacturing sites
  - Confirm safety of CVac™ in patients in remission
- Results:
  - Manufacturing comparability established
  - CVac™ well tolerated to date; no therapy-related toxicity
  - Dosing complete for all patients in 4th quarter 2012

CAN-003 Interim Safety Data

CVac is very well tolerated

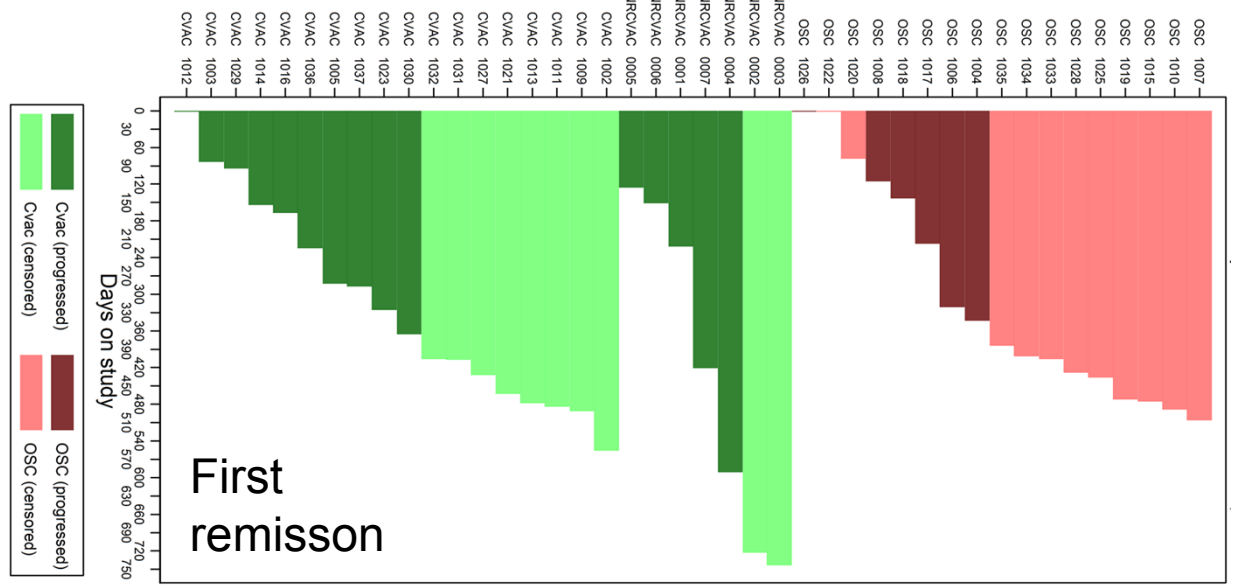
- Only 1 SAE ***possibly*** related to CVac treatment
- Total of 5 serious adverse events (SAE) in the CVac arm (2 disease progression, abdominal pain, small bowel obstruction and febrile neutropenia) compared to 2 SAE in control arm (abdominal pain; hematoma/respiratory failure leading to death)
- 7 severe adverse events noted (bunion, headache, cough, itch , flu-like symptoms and urinary tract infection)

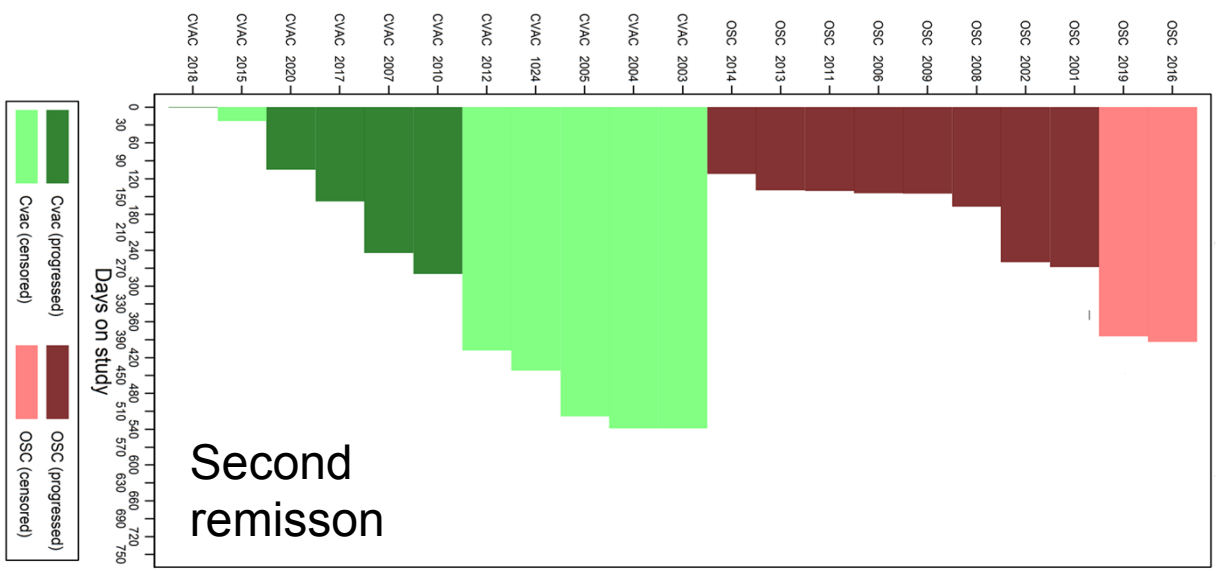
	NRCVAC & CVAC (N=36)			OSC (N=27)			Total (N=63)		
Adverse event severity	**# Pats**	**%**	**# AEs**	**# Pats**	**%**	**# AEs**	**# Pats**	**%**	**# AEs**
Mild	29	80.6	218	20	74.1	129	49	77.8	347
Moderate	16	44.4	57	6	22.2	14	22	34.9	71
Severe	6	16.7	14	1	3.7	2	7	11.1	16
Death	0	0	0	1	3.7	1	1	1.8	1

CAN-003 Interim Efficacy Data

Promising trend in PFS data

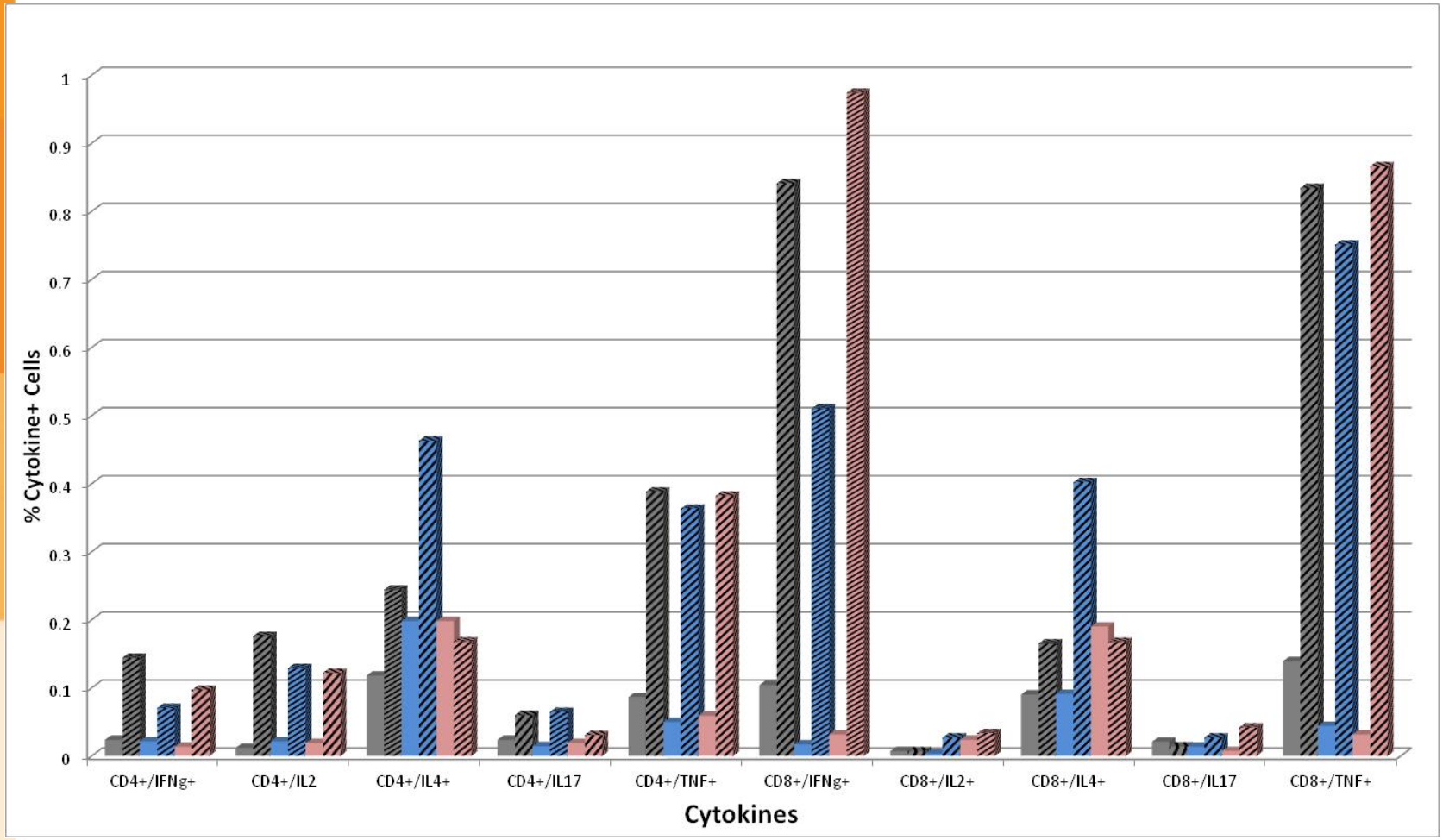
Median PFS (as of Aug 2012)
NRCVac: 421 D
CVac: 365 D
Control: 321 D





CAN-003 Immune Monitoring Data

Inital 3 patients analyzed by intracellular cytokine staining (ICS) – demonstrate significant increase in mucin 1 specific cytotoxic T cell activity after first 3 doses of Cvac



Understanding Immunotherapy

Summary data from ipilimumab phase III trial of patients with previously treated, unresectable stage III or IV melanoma

S. O'Day et. al. J Clin Oncol 28:18s, 2010 (suppl; abstr 4)

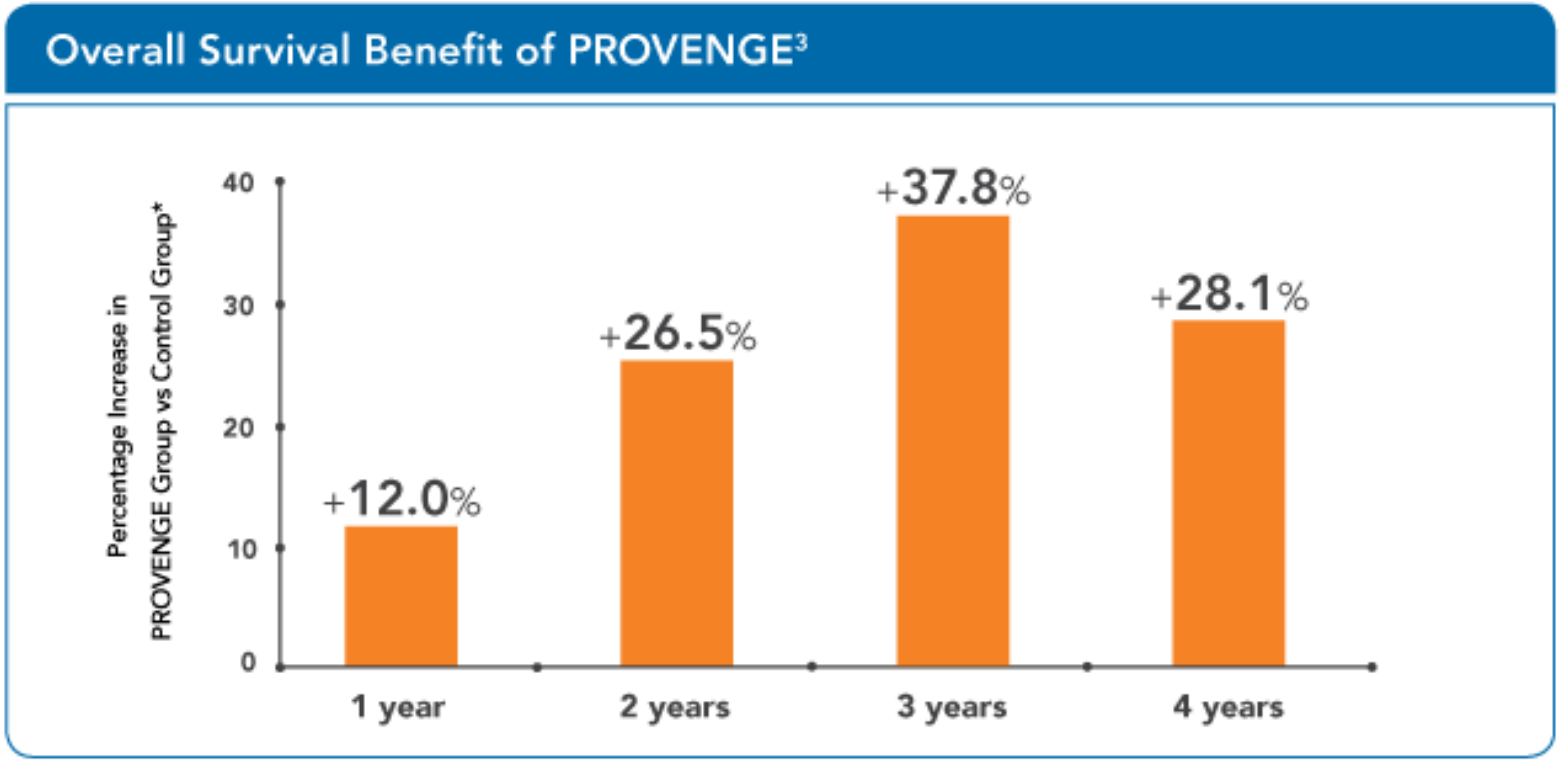
				Comparison		
	Ipilimumab	**Ipilimumab + gp100**	**gp100**	**Ipilimumab vs. gp100**	**Ipilimumab + gp100 vs. gp100**	**Ipilimumab + GP100 vs. ipilimumab**
OS rate, %						
12 mo	46	44	25	—	—	—
24 mo	24	22	14			
OS, median, mos	10.1	10	6.4	HR = 0.66 p = 0.0026	HR = 0.68 p = 0.0004	HR = 1.04 p = 0.7575
PFS, median, mos*	2.9	2.8	2.8	HR = 0.64 p = 0.0007	HR = 0.81 p = 0.0464	HR =1.25 p = 0.0371

Medians are similar; however, PFS curves part after the median as reflected in HR.

Understanding Immunotherapy (2)

PROVENGE provided a survival benefit for every year studied in the IMPACT phase III trial

http://www.provenge.com/hcp/survival-rate.aspx



*(Percent PROVENGE–percent control)/percent control.

Phase II/III – CANVAS

CANVAS (***CAN***cer ***VA***ccine ***S***tudy) is multinational, multi-center, randomized, double-blinded, placebo-controlled for a robust analysis, started in Feb 2012

- Stage III/IV patients eligible after optimal debulking surgery
- 800 patients randomized 1:1 CVac : placebo
- Patients must be in complete clinical and radiologic remission after chemotherapy to continue dosing
- 6 doses in 44 weeks
- Dosing starts as soon as possible (~2-3 weeks after chemotherapy)
- About 120 centers globally (USA, Australasia, Europe)

CANVAS goals

- ✓ Validate and plan for a commercial-ready manufacturing process in 3 global regions
- ✓ Validate a companion Mucin-1 diagnostic test
- ✓ Confirm acute and longer-term safety and tolerability of CVac™ in a larger patient population
- ✓ Establish CVac efficacy by PFS and/ or OS
- ✓ Investigate CVac impact on quality of life factors
- ✓ Exploration of biomarkers and cellular activity

Significant progress: key milestones

- ✓ Phase I CAN-001 Trial completed
- ✓ Phase II CAN-002 Trial completed
- ✓ NASDAQ Listing
- ✓ Development of manufacturing, logistics and quality control procedures (three manufacturing centers)
- ✓ Phase II/III Trial design regulatory approval in Australia and U.S and different European nations
- ✓ Phase II/III Trial enrollment commenced
- ✓ Interim Phase II CAN-003 Trial data released

Outlook

- Key milestones (all subject to exact timing of patient outcomes)
  - ICS (immune) data for next cohort of 7 patients (4Q 2012)
  - Initiation of exploratory trial in new cancer indication(s) – pending ICS data (~2Q 2013)
  - Final CAN-003 ICS data (3Q 2013)
  - Final CAN-003 efficacy data (4Q 2013)
  - Phase II/III CANVAS data (~2015)
- Other catalysts in the next 12 months
  - Comparability with 3rd manufacturing center (Europe)
  - All blood collection centers globally qualified and approved
  - All CANVAS sites globally initiated

Conclusion

- Ovarian cancer presents a significant unmet medical need
- **CVac** would be the first of its type in the market, with potential to achieve rapid market penetration
- Positive data from CAN-003 demonstrate a favorable safety profile and provide indication of CVac's efficacy
- Phase II/III Trial CANVAS underway across multiple sites with patient enrolment to accelerate in 2013
- Manufacturing and logistical capabilities have been developed and provide a platform for development to scale
- Significant milestones anticipated through 2013 – 2014