

# Business Update and Full-Year Results for FY17

Sydney  
22 August 2017

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- Business Overview
- Business Update and Key Achievements for FY17
  - Progenza
    - AGC Collaboration
    - STEP Phase I Trial Results
  - RGS4K
  - Sygenus
  - CryoShot
  - Kvax
  - IP update
- Financial Highlights for FY17
- Outlook for FY18

# Overview



# Overview

## 3 world class-technology platforms

- Allogeneic adult stem cells (MSCs) from adipose tissue for osteoarthritis and other inflammatory conditions (Progenza, CryoShot)
- Immuno-therapy for oncology (RGSH4K, Kvax)
- Cell-free secretions from MSCs focused on inflammatory skin conditions (Sygenus)

## Diversified portfolio of clinical-stage products

- Human and animal health markets
- Multiple product opportunities addressing multiple significant unmet medical needs – many shots on goal
- Technology supported by emerging positive clinical data
- Scalable manufacturing for allogeneic stem cells
- IP portfolio underpins technology and product pipeline for wide range of inflammatory indications
- Licence driven business model

## Driven by innovation and collaboration

- Track record of technology innovation and rapid translation to the clinic
- Successful technology and clinical collaborations (AGC, Kolling Institute, Macquarie and Adelaide Unis)
- Experienced and commercially focused management team and Board
- Well positioned to unlock significant value over next 12 months

# Development pipeline summary

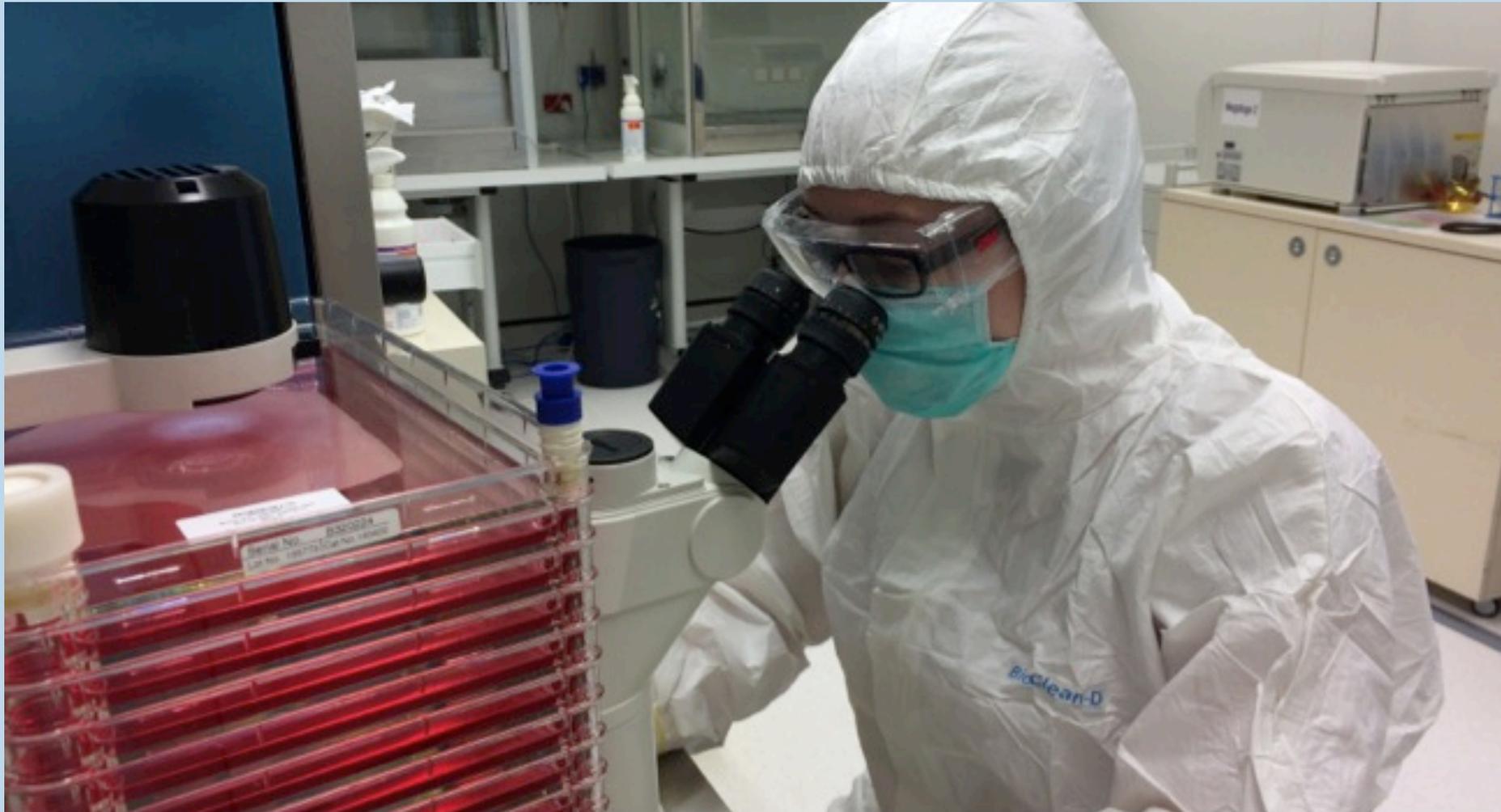
## Human Health Development Pipeline

Program	Technology platform	Pre-clinical	Phase 1	Phase 2	Phase 3	Filing	Approval
Progenza	Allogeneic adipose MSCs & secretions	Osteoarthritis					
RGSH4K	Immunotherapy for oncology	Solid Tumours					
Sygenus	Allogeneic adipose MSC secretions	Derm / Wound					

## Animal Health Development Pipeline

Program	Technology platform	Manufacturing & process development	Safety & efficacy studies	Pivotal trial	Market approval
CryoShot Canine	Allogeneic adipose MSCs	Osteoarthritis			
CryoShot Equine	Allogeneic adipose MSCs	Osteoarthritis			
Kvax	Immunotherapy for oncology	Naturally occurring advanced cancers (conditional approval)			

# Business update and key achievements for FY17



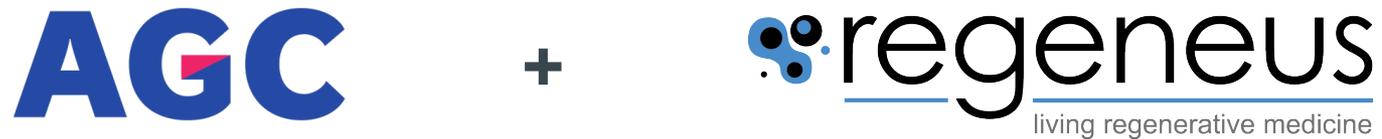
# Overview of AGC collaboration for Progenza



**Regeneus and AGC, a leading Japanese manufacturer of biopharmaceutical products, enter into collaboration and licence agreement for the manufacture and licensing of the clinical development of its off-the-shelf stem cell therapy platform, Progenza, in Japan**

	<p>Received <b>US\$5.5m</b> upfront licence fee in January 17 and <b>US\$1m</b> in June 17 for successful STEP trial results</p>	<p>Entitled to further <b>2x US\$5m</b> payments on meeting specific milestones</p>	<p>AGC acquires 50% of RGS Japan which has exclusive rights for licensing clinical development and marketing rights of Progenza for OA and all other indications in Japan</p>	<p>Entitled to 50% of Progenza clinical licensing, milestone payments and sales royalties</p>
	<p>Exclusive manufacturer of Progenza in Japan</p>	<p>Funds product development for GMP manufacture for Phase 2 Progenza trial</p>		

# Benefits of AGC collaboration



- **Leading Japanese biopharma manufacturer with global capability and aligned goals**
  - Leading biopharmaceutical contract manufacturer in Japan – expanded global capability with recent acquisitions of Biomeva in Germany and CMC Biologics in EU and USA
  - Strategic commitment to grow life sciences business
  - Targeting accelerated entry into cell-based therapeutics manufacture
  - Ambition and resources dedicated to supply global market
- **Existing and ongoing relationships with**
  - Regulators in biopharmaceuticals manufacturing
  - Major pharmaceutical businesses
- **Increased impetus of Progenza development**
  - Takes advantage of new Japanese regenerative medicine laws
  - Initial osteoarthritis development
  - Other inflammatory indication areas



# Japan is at the forefront of Regenerative Medicine

- Prime Minister Abe made Regenerative Medicine a key part of its strategy for revitalising the economy
  - **New laws** passed in Nov 2013 (took effect in Nov '14) positioned Japan at the forefront for regenerative products and services
  - New **accelerated pathway** for industry sponsored clinical trials



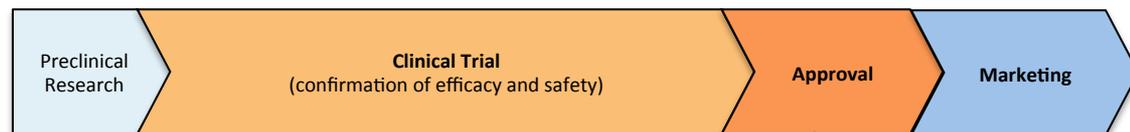
**Second largest healthcare market in the world**



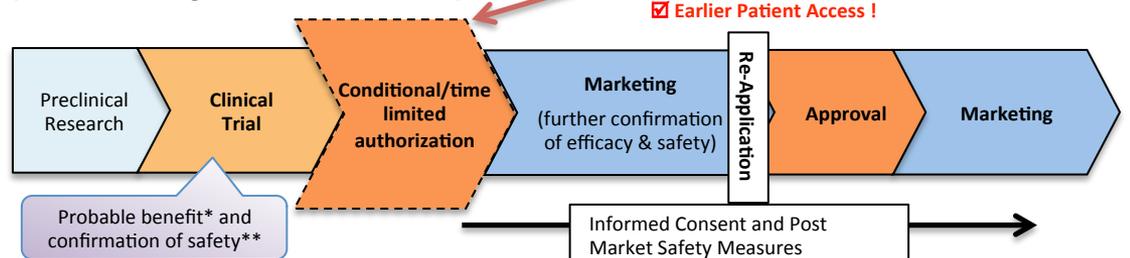
**Regen Med sector projected to grow to US\$5.5b by 2030**

- Allows for **conditional approval** of new cell therapy after confirmation of safety and “predicted efficacy”
- **5-7 years** to gain clinical data
- **70% Government reimbursement**

[Traditional Approval Process]



[New Scheme for Regenerative Medicinal Products]



\*Probable benefit\*: Confirmation of efficacy with small population

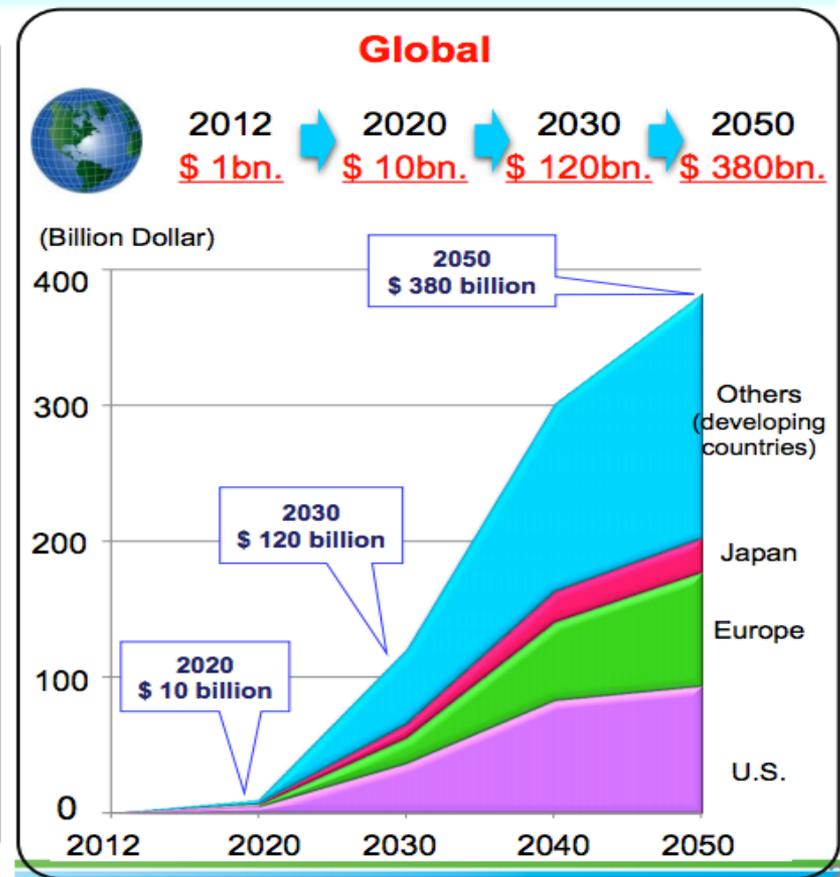
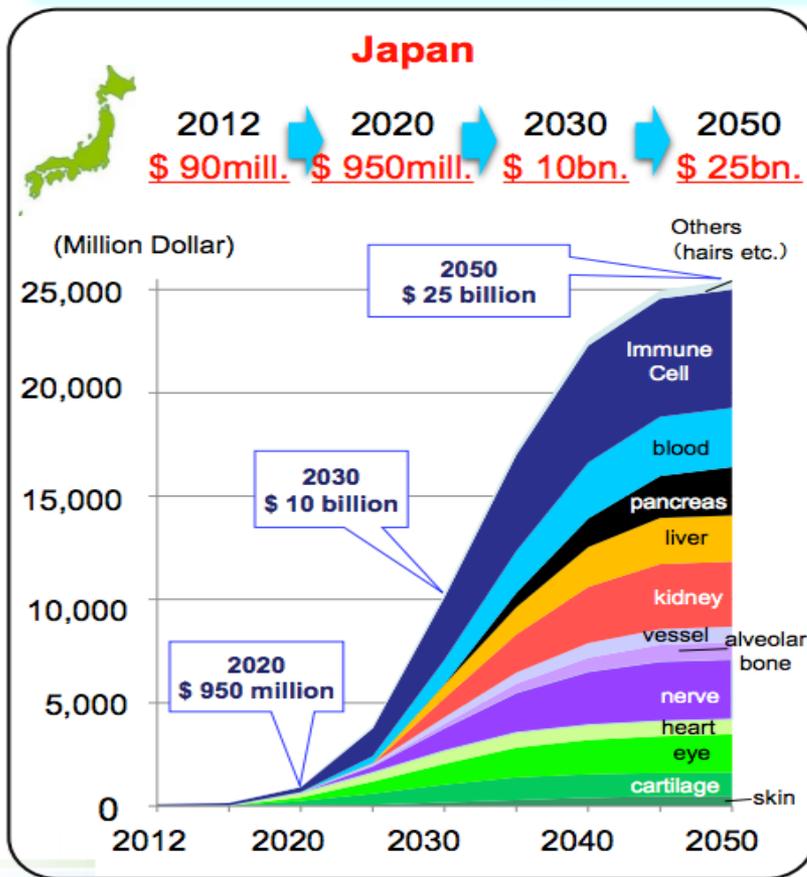
\*\*Safety: Evaluation of acute adverse events etc.



# Regenerative Medicine markets are large and growing rapidly

## Market Forecasts for Regenerative Medicine

○ METI estimates the market size for regenerative medicine at about **\$ 25 billion** in 2050 (Japan), and **\$ 380 billion** (global), which promises enormous economic benefits.



# Progenza – Phase 1 for OA

## safe and tolerable

### Primary Endpoints Met

- Progenza at both doses was found to be safe and tolerable
- No serious adverse events occurred
- The majority of adverse events (AEs) were of mild severity
- No meaningful differences between placebo and PRG groups in incidence and nature of adverse events
- No trends or findings of concern were identified
  - from patients' vital signs, laboratory tests, physical examination, ECGs or other safety measurements

### Trial Design

- Double-blind, placebo controlled and randomised 20 patient trial
  - Sydney - late 2015 through April 2017 (reported May'17)
- Single intra-articular injection and monitored for 12 months for safety
  - 2 cohorts, placebo (4:1)
- Mean age 53 years (40-64 years)
- Diagnosed with knee OA
  - mild OA 25% Moderate OA 75%

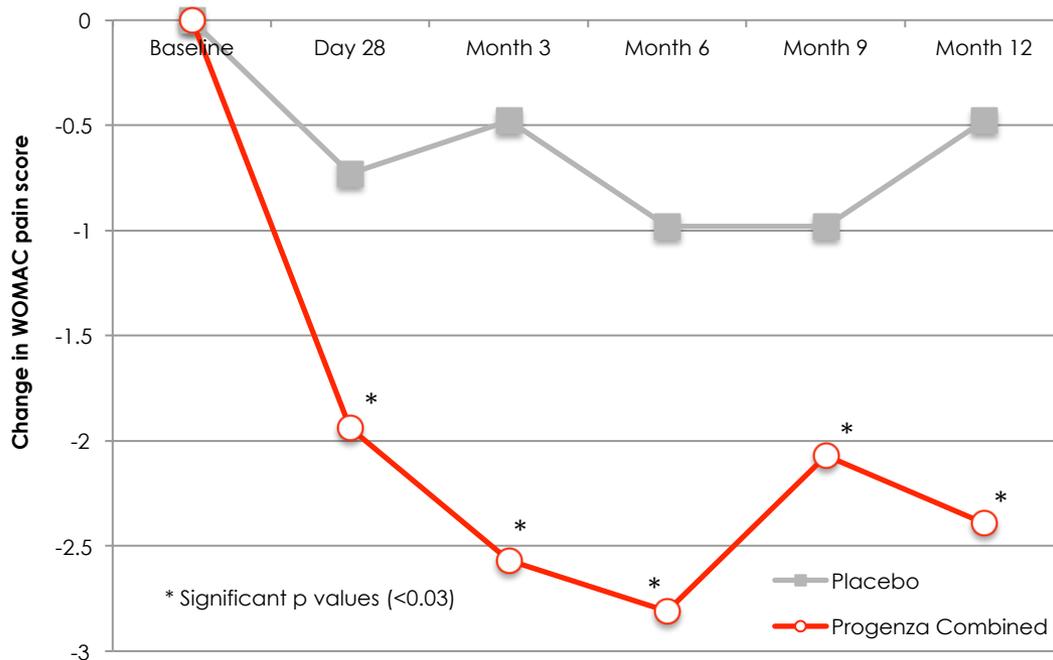
# Progenza – Phase 1 for OA

## significant secondary endpoints

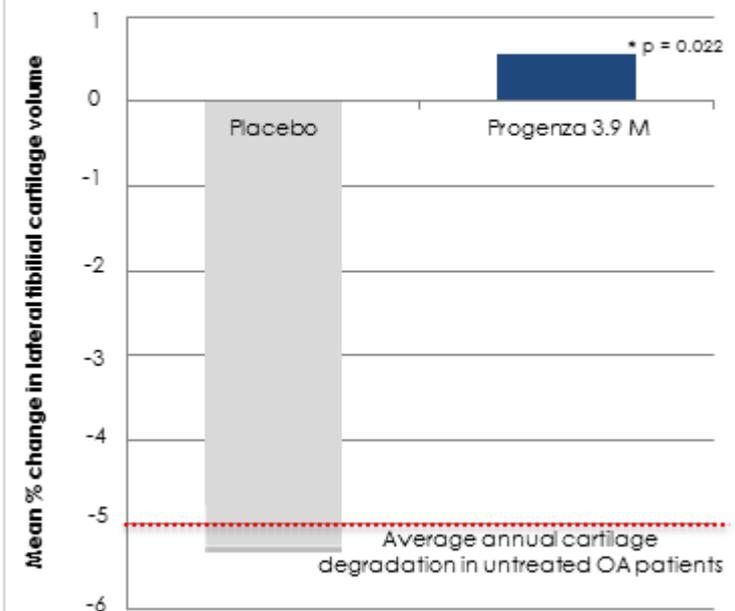
### Significant Secondary Endpoints

- Significant reduction in knee pain in Progenza groups - rapid and sustained
- Significant improvement in cartilage volume compared to placebo in target dose
- Positive signs of disease modification

**Progenza-treated patients showed rapid and sustained pain reduction**



**Progenza 3.9m treated patients showed significant stabilisation in cartilage loss vs. placebo**



Untreated OA is estimated to lose 5% of Lateral Tibial Cartilage Volume per year

# Progenza - STEP data aligns with preclinical results

## Safe and tolerable

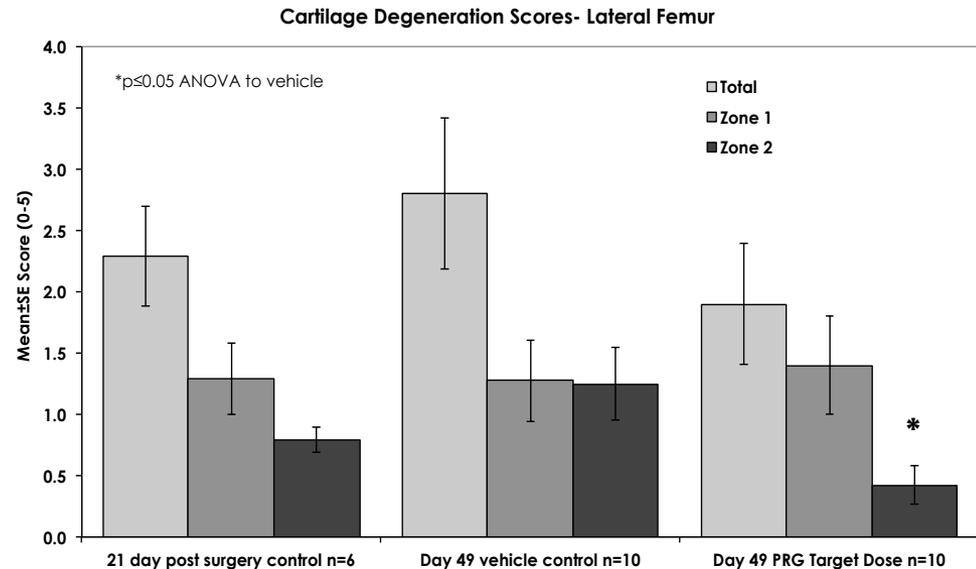
- No Progenza-related systemic or local toxicities or dose related adverse effects

## Significant Secondary Endpoints

- Significant reduction in cartilage degeneration scores with target dose in middle load bearing femur zone (zone 2)
- Significant, rapid and sustained reduction in knee pain in both cohorts
- Positive signs of disease modification consistent with preclinical results

## Rabbit Osteoarthritis Model - partial meniscectomy

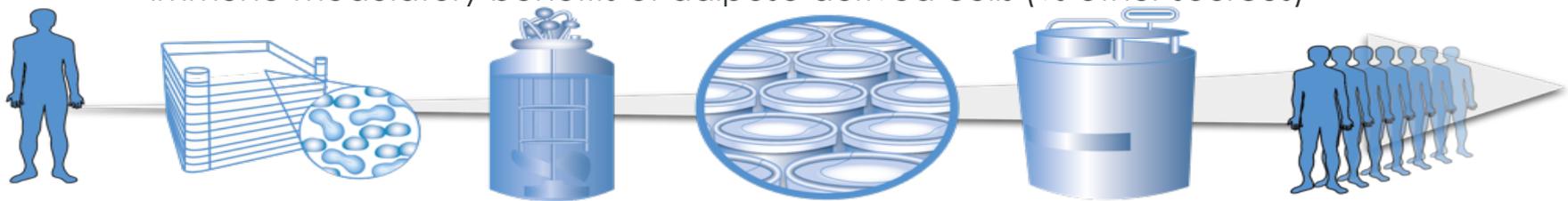
- Single Progenza intra-articular injection 21 days post-surgery



Conducted by US-based Pre-clinical Research Services, a degenerative OA model (partial meniscectomy) in rabbits (n=46; 23M, 23F)

# Progenza – Leading stem cell platform

- Progenza is a patented, scalable, off-the-shelf stem cell technology platform **to treat a range of inflammatory conditions**
- Allogeneic mesenchymal stem cells (MSCs) are sourced from a healthy adult donor
  - no reprogramming of cells = **safety benefits** → **lower regulatory risk**
  - no need for expensive growth factors in production process
- Adipose (fat) tissue is the source of cells
  - large starting volume, and large number of MSCs in adipose vs. other tissue sources
    - Optimised production using proprietary IP → production of millions of doses from one donor = **scalable technology**
  - immuno-modulatory benefits of adipose derived cells (vs other sources)



A single adult healthy lipoaspirate

Isolation and expansion of MSCs into two tiered cell bank

Further 3D cell expansion

Expansion of cells to manufacture millions of doses from a single donor

Long term cryostorage

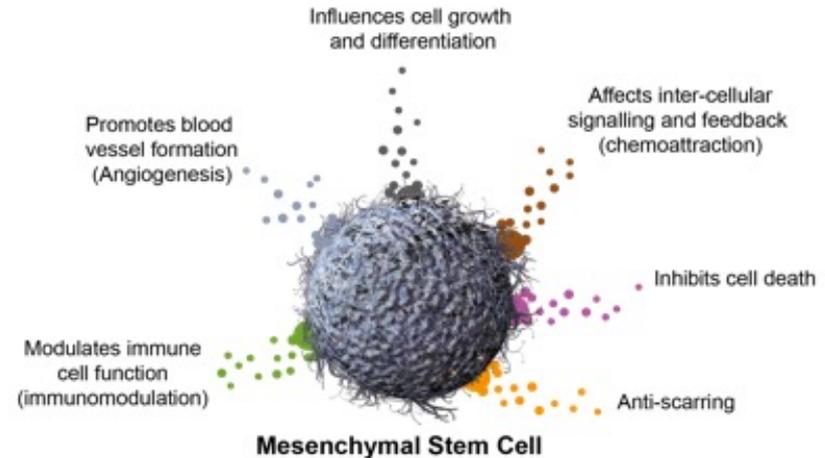
Millions of therapeutic doses from a single donor

# Progenza - Advantages of secretions

*MSCs secrete a diverse variety of bioactive factors including cytokines, growth factors, extracellular vesicles and exosomes*

*Secretions respond to the local environment and are the driving force for reducing inflammation, promoting tissue repair and reducing scarring*

- Progenza is different from other MSC products as it includes secretions with cells which:
  - **improves functionality of cells**
    - ability to secrete and proliferate post thawing
  - **improves therapeutic effect**
    - e.g. rheumatoid arthritis model (CAIA) in mice tested MSC cells alone and MSC cells frozen in cell supernatant
      - Average Clinical Arthritis score were significantly lower with cells frozen in cell supernatant compared to cells alone



# RGSH4K - Update on Phase 1 Trial



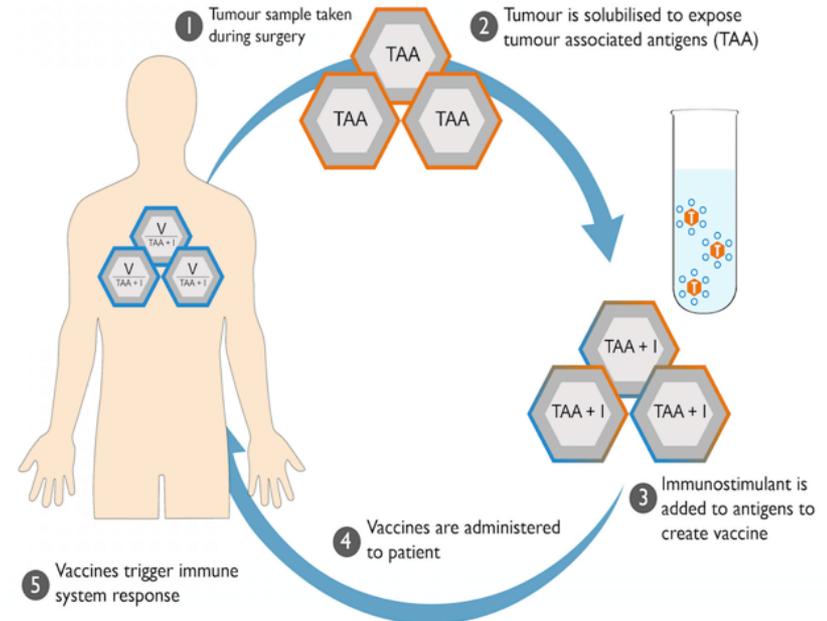
- Phase 1 Study for solid cancers (ACTIVATE Trial)
  - Multiple solid tumour types accepted
  - Patients with terminal cancer for which no other therapy exists
  - Varying levels of streptavidin to identify biologically active dose

Activity / Milestone	
ACTIVATE trial open for recruitment	<input checked="" type="checkbox"/>
HREC approved tumour bank	<input checked="" type="checkbox"/>
Positive safety profile across all dose levels	<input checked="" type="checkbox"/>
Patent granted	<input checked="" type="checkbox"/>
Last patient last visit	<input type="checkbox"/>
Analysis and final report	<input type="checkbox"/>

**Pursuing early partnering opportunities**

# RGSH4K – Cancer immunotherapy platform

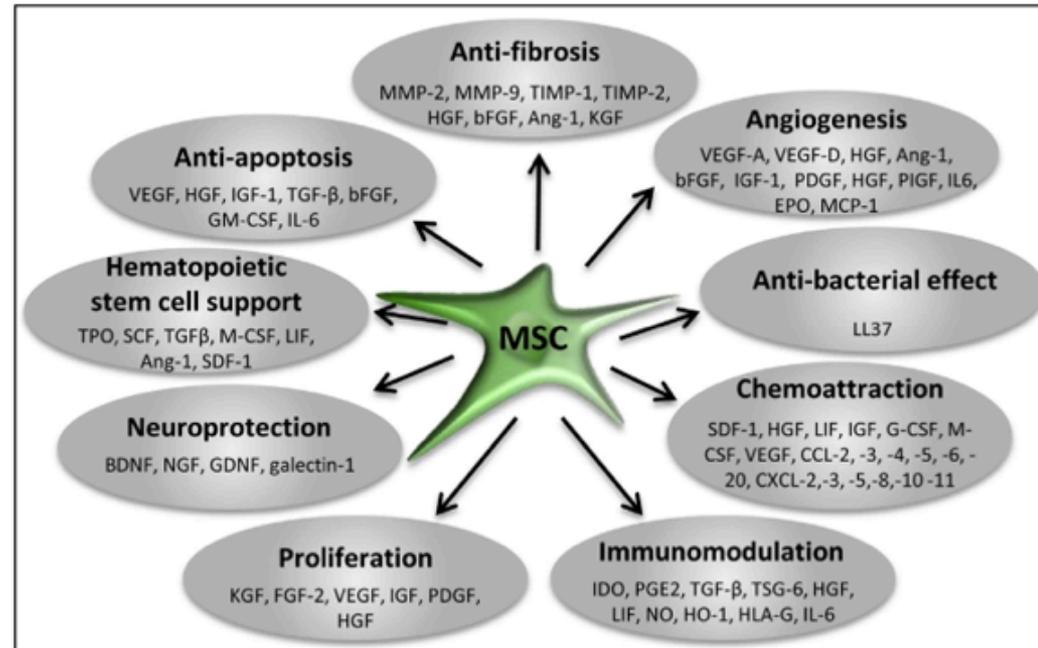
- Autologous cancer immunotherapy which uses a patient's own tumour as source coupled with a bacterial adjuvant
- Addresses tumour heterogeneity as all relevant tumour associated antigens are included
- Immune memory may be effective in reducing risk of tumour recurrence
- Straightforward and rapid manufacturing process
- Multi-tumour type potential



	Multiple Relevant Antigens	Potent Immunological Response	Ease of manufacture	Safety Profile	Ease of Use	Low COGS
<b>AUTOLOGOUS THERAPIES</b>						
RGSH4K tumour cell vaccine	✓	✓	✓	✓	✓	✓
Dendritic cell vaccine		✓		✓		
Peptide vaccine			✓	✓	✓	
<b>ALLOGENEIC THERAPIES</b>						
Peptide / HSP vaccine				✓	✓	
Oncolytic virus		✓	✓	✓		
Gene transfer		✓	✓		✓	

# Sygenus – MSC secretions technology platform

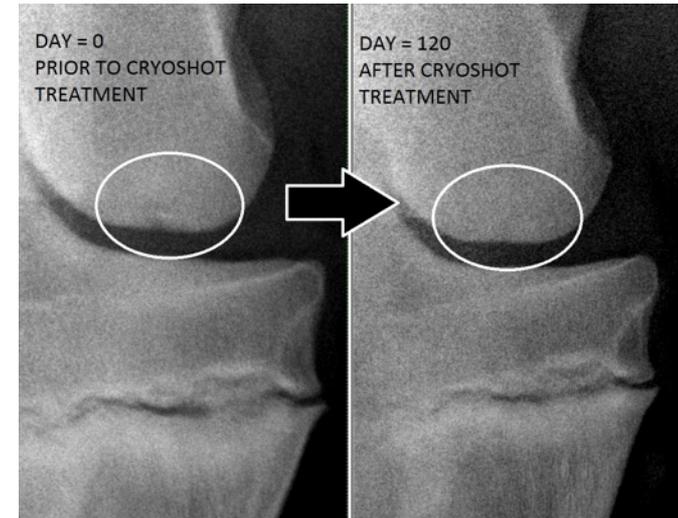
- Sygenus shows great promise as a stand alone allogeneic scalable technology that has potential to treat a wide range of inflammatory conditions
- Secretions can be used for various forms of administration such as topical, and injectable, aerosol
- Initial focus on topical applications for the management of acne and other inflammatory skin conditions
- We are conducting acne safety and tolerability studies with Sygenus in a gel format



- **MSCs secrete a diverse variety of bioactive factors including cytokines, growth factors, extracellular vesicles and exosomes**
- **Secretions respond to the local environment reducing inflammation and scarring, and promoting tissue repair**

# CryoShot – Allogeneic stem cell platform

- Leading in-field, practical experience with allogeneic MSCs in the veterinary field globally with >90 vet practices involved and 5,000+ field trial treatments
- Better pain relief than NSAIDs in uncontrolled studies for osteoarthritis in dogs
- Improved interim clinical results on early orthopaedic developmental disease in yearling thoroughbreds



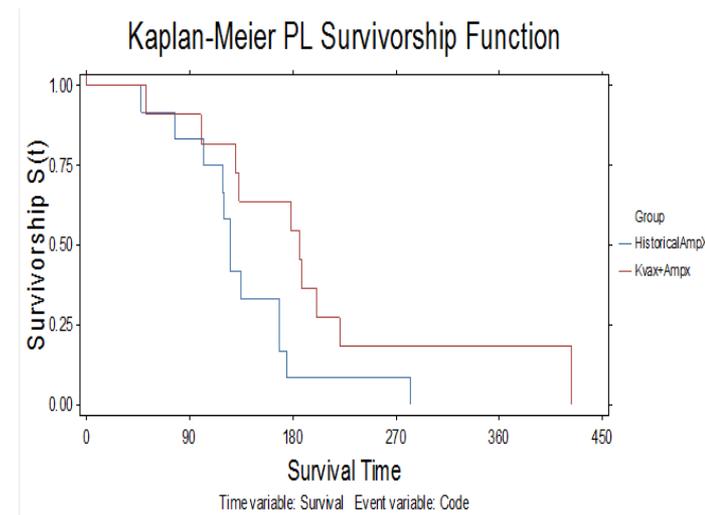
Activity / Milestone	
Signed collaboration with top Animal Health Pharma to partner development and commercialisation of CryoShot Canine	<input checked="" type="checkbox"/>
Commenced pre pivotal dog trial at University of Pennsylvania for osteoarthritis (currently >50% complete)	<input checked="" type="checkbox"/>
Last patient last visit	<input type="checkbox"/>
Analysis and final report	<input type="checkbox"/>

# Kvax – Canine cancer vaccine

- Safety Study results
  - >100 dogs treated & 17 different tumour types
  - No safety concerns
  - At census (25 dogs) - 71% exceeded survival time up to 22 months
- Osteosarcoma study results
  - Completed canine clinical trial with Dr Bergman of VCA, largest US vet services group
  - Single arm, Kvax only

*“Kvax after amputation is well tolerated and appears to confer increased PFI and survival compared to historically reported dogs with osteosarcoma treated with limb amputation only”*

- B-cell lymphoma study ongoing
  - Study initiated at the Small Animal Specialist Hospital in Sydney
  - Placebo controlled, conjunction with standard of care chemotherapy



# Patent Portfolio Update

## Overview

- 56 patents or patent applications across 14 patent families
- 11 patents granted in Australia; 2 in NZ; 1 in US, EU, Japan, China and Singapore
- Patents cover: methods of manufacture; compositions and delivery; use of products for treatment of a broad range of indications

## Key patents granted

- Patent granted in Australia, NZ, Japan covering Progenza technology – allogeneic stem cells and secretions for the treatment of osteoarthritis and other inflammatory conditions in humans and animals
- Patent allowed in EU, USA and China covering Sygenus stem cell secretions for topical treatment of acne
- Patent granted in Australia covering cancer vaccine technology for the treatment of cancers in humans (RGSH4K) and animals (Kvax)

# Financial Highlights for FY17



# FY17 financial results overview

	\$'000's	2017	2016	Change
Revenue		<b>10,169</b>	1,878	8,291
Cost of Sales		(55)	(292)	237
Gross Profit		10,114	1,586	8,528
Other income		2,608	2,747	(139)
R & D expenses		(4,456)	(4,309)	(147)
Selling expenses		(238)	(375)	137
Occupancy expenses		(420)	(473)	53
Corporate expenses		(2,912)	(2,730)	(182)
Finance Costs		(16)	(20)	4
Other expenses		(1,300)	-	(1,300)
Share of loss on investment		(9)	-	(9)
Net Expenses		(6,743)	(5,160)	(1,583)
<b>Profit / (Loss) for half year</b>		<b>3,371</b>	<b>(3,574)</b>	6,945

- Revenue includes \$8.9m from AGC licence fees
- R&D tax incentive of \$2.6m included in other income, consistent with 2016: \$2.7m
- Other expenses are individually significant expenses associated with securing licence to AGC including; withholding tax, legal fees and other professional fees

# Forecast operating cashflows

	\$'000's
<b>Cash at 30/06/2017</b>	<b>4,135</b>
Material cash inflows	
• R&D incentive receipt October '17	2,608
• Shareholder loan repayment June '18	1,251
Cash available FY18	7,994
monthly cash burn (estimate)	650
Cash available	12+ months

- Prior year quarterly cash outflow from operations was maintained at \$1.7 million up from 2016 \$1.5 million
- Future quarterly cash burn to progressively increase to up to \$2 million per quarter
- Incremental cash receipts not in forecast include:
  - AGC milestone payments – potential US\$5m
  - Share of licence fees from licensing clinical development and marketing rights of Progenza for OA and other indications in Japan
  - Licences of other clinical assets
- Sustainable 12 month cashflow

# Outlook for FY18

## **Progenza**

- Advance clinical partnering discussions for Progenza for OA and other indications in Japan and other territories

## **RGSH4K**

- Report on results of ACTIVATE Phase 1 clinical trial

## **Sygenus**

- Report on studies for topical application of MSC secretions technology

## **CryoShot**

- Report on results of CryoShot Canine pre-pivotal OA trial

# Further information

**ASX: RGS**

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