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the regenerative medicine company

Half Year 2015 Financial Results

February 2015

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This presentation, including any comments made during or following the presentation, may contain forward-looking statements that are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified. These statements may relate to, but are not limited to: expectations regarding the safety or efficacy of, or potential applications for, Mesoblast's adult stem cell technologies; expectations regarding the strength of Mesoblast's intellectual property, the timeline for Mesoblast's regulatory approval process, and the scalability and efficiency of manufacturing processes; expectations about Mesoblast's ability to grow its business and statements regarding its relationships with Teva Pharmaceutical Industries Ltd, JCR Pharmaceuticals Co., Ltd, and Lonza and future benefits of those relationships; statements concerning Mesoblast's share price or potential market capitalization; and statements concerning Mesoblast's capital requirements and ability to raise future capital, among others. Actual results may differ from the results anticipated in these forward-looking statements, and the differences may be material and adverse. Factors and risks that may cause Mesoblast's actual results, performance or achievements to be materially different from those which may be expressed or implied by such statements, include, without limitation: risks inherent in the development and commercialization of potential products; uncertainty of clinical trial results or regulatory approvals or clearances; government regulation; the need for future capital; dependence upon collaborators; and protection of our intellectual property rights, among others. Accordingly, you should not place undue reliance on these forward-looking statements.

Our Competitive Strengths

1. Disruptive platform based on allogeneic, “off-the-shelf” adult stem cells
2. Five product candidates that are in active Phase 3 programs or are Phase 3-ready
3. Substantial intellectual property covering products, uses, and manufacturing
4. Scalable manufacturing capabilities
5. Strategic collaborations with industry leaders
6. Experienced management team

Disruptive Technology Platform

- **Mesenchymal Lineage Adult Stem Cell (MLCs) technology platform**
  - Highly purified, immunoselected Stro-1/Stro-3 positive Mesenchymal Precursor Cells (MPCs), earliest precursors
  - Culture-expanded Mesenchymal Stem Cells (MSCs), progeny of earliest precursors
  - Diverse sources (bone marrow, adipose, dental pulp)
  - Product lifecycle extension developing next generation 'modified' stem cell therapies

- **MLCs are present around blood vessels in all tissues**
  - Respond to signals associated with tissue damage
  - Secrete a diverse variety of biomolecules that affect tissue repair and inflammation
  - Influence immunomodulatory mechanisms responsible for maintaining tissue health

- **MLCs have distinct properties which enable allogeneic or "off-the-shelf" use**
  - Large-scale culture expansion potential via proprietary manufacturing processes
  - Immunomodulation properties reduce the likelihood of host immune responses/rejection

MLC Product Development Strategy

Multiple mechanisms of action may facilitate therapeutic effects in diseases with high unmet needs

Proprietary manufacturing processes utilized to create distinct product candidates with specific technical attributes

Independent, Delineated Product Candidates

Initial focus on advanced disease populations with commensurate pricing and potential for label expansion

Allows for distinct product candidate reimbursement, commercialization and partnering strategies

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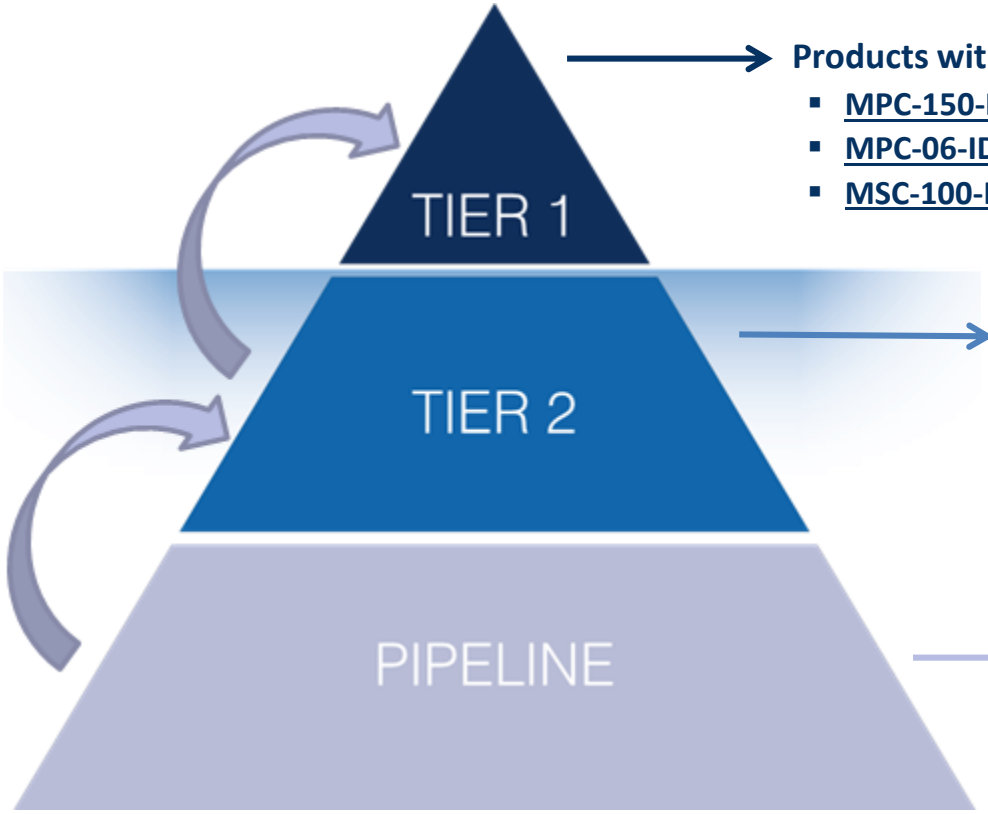
Focus on Bringing Late Stage Product Candidates to Market



Products with mid term revenue opportunity

- **MPC-150-IM:** Congestive Heart Failure (CHF)
- **MPC-06-ID:** Chronic Discogenic Low Back Pain (CDLBP)
- **MSC-100-IV:** GVHD

Robust Development Portfolio

- E.g. **MPC-300-IV:** Biologic Refractory Rheumatoid Arthritis and Diabetic Kidney Disease
  - Progressing to next decision point
  - Targeted for partnership
  - Capable of acceleration

Emerging Pipeline

- Early stage development and preclinical work

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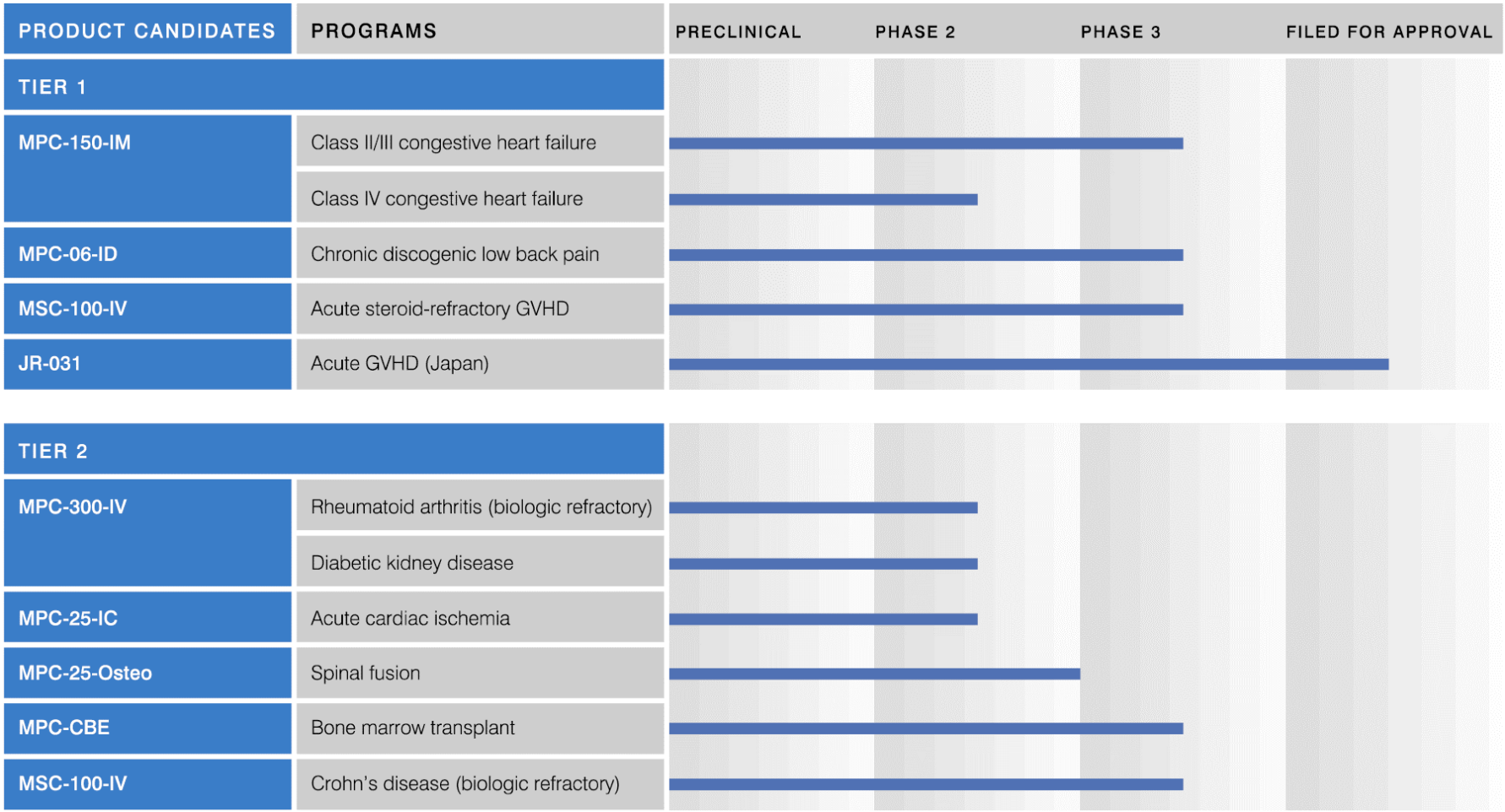
Broad Portfolio – Five Product Candidates in Phase 3 or Phase 3 Ready



This chart is figurative and does not purport to show individual trial progress within a clinical program.
For product registration purposes, Phase 3 programs may require more than one trial.

First half FY15 highlights – Focus on Key Product Candidates and Manufacturing

MPC-150-IM Congestive Heart Failure (CHF)	• Phase 3 trial in advanced CHF patients, with expected higher HF-MACE event rates, is recruiting well across North American sites • Phase 3 CHF trial enriched with HF patients at higher risk of HF-MACE • FDA clearance for 120 patient Phase 2b NIH study in advanced CHF patients requiring LVAD mechanical circulatory support
MPC-06-ID Chronic Discogenic Low Back Pain (CDLBP)	• Phase 2 results presented at North American Spine Society Annual Meeting • Phase 3 program initiated
MSC-100-IV Acute Graft Versus Host Disease (GVHD)	• Potential pathway to accelerated US approval clarified through FDA • Open-label Phase 3 study of ~60 children in the US initiated and actively recruiting • Partner JCR filed for approval for Japanese market
MPC-300-IV Biologic Refractory Rheumatoid Arthritis	• First cohort fully enrolled • 2nd cohort actively recruiting
MPC-300-IV Diabetic Kidney Disease	• Results of Type 2 diabetes trial for glucose control provide support for the advancement to diabetic kidney disease; results presented at 74th American Diabetes Association Annual Meeting • Phase 2 diabetic kidney disease trial fully enrolled
Scalable Manufacturing	• Substantial advances made in development of 3-D manufacturing processes • Developed a proprietary serum-free media with potential to greatly improve yields and mitigate risk of source material constraints

Cash Position

AUDm

Cash Reserves	31 Dec 2014	30 June 2014	Half Year Movement
Cash and Cash equivalents	149.2	196.4	(47.2)

Cash Flows	31 Dec 2014	30 June 2014	Change
Net Cash outflows	58.3	67.6	(9.3)
Extract of items in Net Cash outflows (above):			
Cash outflows from operating activities	56.5	48.0	8.5
Cash outflows from investing activities	2.9	21.2	(18.3)

- Cash outflows from operating activities for the half year ended 31 December 2014 have increased by 17.7% over the prior year period predominantly due to the progression of our Tier 1 and Tier 2 clinical programs
- Cash outflows from investing activities for the half year ended 31 December 2014 have decreased by $18.3m over the prior year period which contained the one-off acquisition of the culture-expanded MSC therapeutic business

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Financial Results

AUDm

	31 Dec 14	31 Dec 13	Change	Δ %
Revenue from Continuing Operations	**12.9**	**13.9**	**(1.0)**	**(7%)**
Commercialization revenue	10.8	8.2	2.6	32%
Interest revenue	2.1	5.7	(3.6)	(63%)
Other Income	**12.9**	**6.9**	**6.0**	**87%**
Research & development tax incentive	3.5	5.8	(2.3)	(40%)
Foreign Exchange gains	9.4	1.1	8.3	755%
Expenses from Continuing Operations	**76.7**	**51.6**	**25.1**	**49%**
Research & development	36.1	25.3	10.8	43%
Manufacturing commercialization	13.3	13.4	(0.1)	(1%)
Management & administration	16.6	12.9	3.7	29%
Finance costs	5.4	-	5.4	na
Other expenses – Re-measurement	5.3	-	5.3	na
Income tax expense	-	-	-	na
Loss After Tax	**50.8**	**30.9**	**19.9**	**64%**

Minor rounding differences are present.

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MPC-150-IM: Congestive Heart Failure (CHF) – Market Opportunity

MPC-150-IM is in development for patients with New York Heart Association (NYHA) Class II to IV congestive heart failure

Market opportunity

- 5.1 million people in the US are diagnosed with CHF (2% of the population) [1]
- 825,000 new cases diagnosed each year – growing at 2% per annum [1]
- CHF patients with NYHA Class II/III with low ejection fraction (<35-40%): ~ 40% of all heart failure patients [2]
- CV Hospitalization or all cause mortality events among CHF Class III/IV approached 50% at 16.6 months median follow up duration [3]

Gap in treatment options

- Despite standard of care using pharmacological treatments, advanced NYHA Class II/III CHF patients continue to be at high risk of repeated hospitalizations and mortality
- Advanced NYHA Class III/IV CHF patients only have heart transplant and mechanical support as treatment options

Targeted physician population

- Specialists: Targeted physician audience & commercial footprint
  - Heart failure specialists
  - Interventional cardiologists
  - Cardiac surgeons

MPC-150-IM is positioned to fill the significant treatment gap in patients with advanced NYHA Class II-IV heart failure

1. AHA statistical Update – Heart disease and stroke statistics-2014 update Circulation 2014
2. The National Heart, Lung and Blood Institute; The Organ Procurement and Transplantation Network; The United Network for Organ Sharing; The American Heart Association
3. Metra M et al Eur Heart J 2009 30:3015-3026

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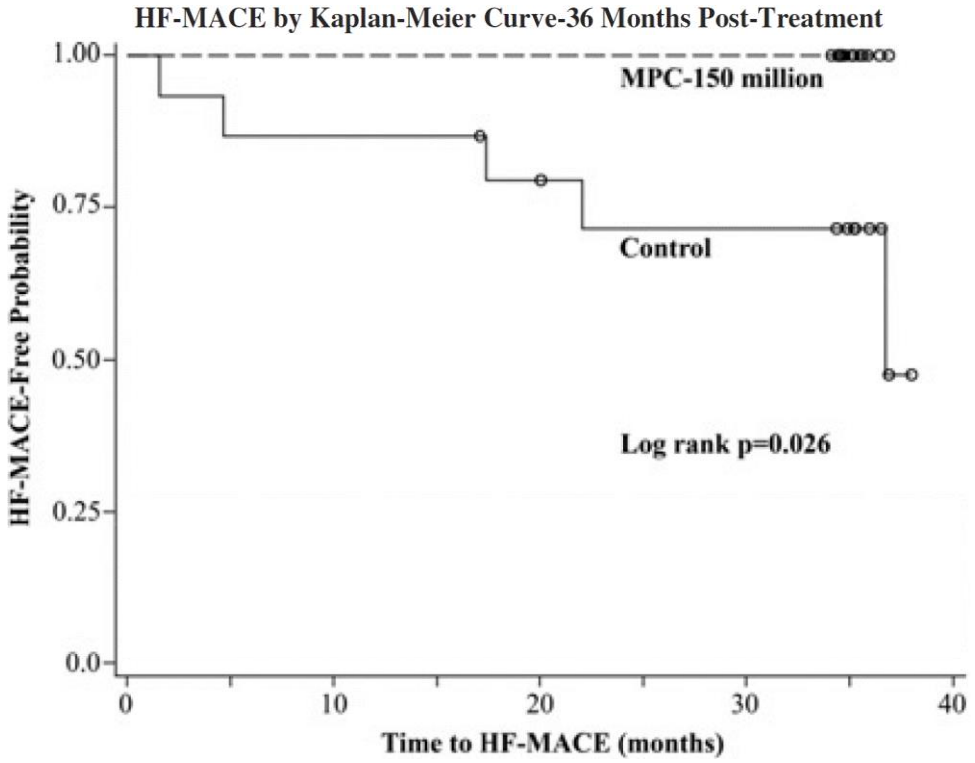
MPC-150-IM: Phase 2 Trial Results in CHF Identifies Optimal Therapeutic Dose

- At 6 months post treatment, there was a dose dependent effect on left ventricular remodeling, with the 150 million cell dose (MPC-150-IM) showing the greatest effect compared to controls
- Over 36 months, MPC-150-IM was associated with a significantly greater probability of remaining free of heart failure-related major adverse cardiac events (HF-MACE) vs controls (0% vs 33%, p=0.026 by log-rank)
- HF-MACE, defined as a composite of cardiac related death or non-fatal decompensated heart failure events, is a validated endpoint used by the FDA for approval of heart failure therapies



MPC-150-IM: Optimizing the Phase 3 Target Population for High Risk HF-MACE

- Patients with more advanced NYHA Class II/III CHF continue to represent the greatest unmet medical need due to highest risk of HF-MACE
- We believe MPC-150-IM will show the greatest benefit in patients with the highest risk of HF-MACE

Enriching the Phase 3 Trial for patients with high risk of HF-MACE

- Markers which are strong predictors of higher HF-MACE rates and therefore useful in selecting more advanced heart failure patients include:
  - **Prior hospitalization for Heart Failure [2]**
    - Nearly 1 in 4 patients hospitalized with heart failure are readmitted within 30 days of discharge [3]
    - High rate of early post-discharge events, with mortality and/or rehospitalization affecting approximately 33% of patients within 60 to 90 days [4]
  - **High baseline levels of BNP is a predictor of poor clinical outcomes [5,6]**
    - High admission BNP levels are significant, independent predictors of in-hospital mortality in acutely decompensated HF patients

1. Metra M et al Eur Heart J 2009 30:3015-3026
2. Georgheiades JACC 2013
3. HF Hosp-JACC 2012
4. Collins JACC 2013(7)
5. Am J Cardiol. 2008 Jan 15;101(2):231-7
6. Evid Rep Technol Assess (Full Rep). 2006 Sep;(142):1-147

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MPC-150-IM: Phase 3 Trial Design Targets Patients with High Risk of HF-MACE

- The Phase 3 CHF trial is recruiting well across multiple North American sites
- Double-blinded, 1:1 randomized, sham-procedure-controlled, in approximately 1,730 patients, evaluating a single dose of MPC-150-IM delivered via endomyocardial injection into the left ventricle
- The enrolled patient population in the Phase 3 trial is enriched for patients at high risk of HF-MACE. This is achieved by using the following inclusion criteria:
  - High baseline NT-proBNP levels
  - HF-related hospitalization within the past 9 months
- Expected near-term Phase 3 milestones
  - Complete enrollment for the first interim analysis during the second quarter 2015
  - First interim analysis for safety and efficacy (left ventricular remodeling) after 6 months of follow-up
  - A subsequent second interim analysis of the primary endpoint will be used for possible resizing or early trial termination based on efficacy

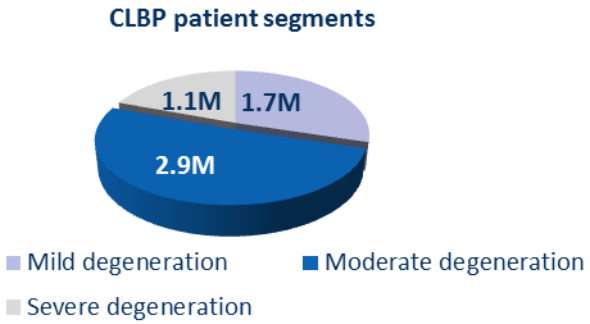
Targeting patients at high risk of HF-MACE and advanced heart failure could facilitate the shortest Phase 3 program, the fastest time to market, and the opportunity for the most attractive pricing

MPC-06-ID: Chronic Discogenic Low Back Pain (CDLBP) – Market Opportunity

MPC-06-ID is in development for the treatment of chronic discogenic low back pain (CDLBP) lasting >6 months as a result of moderate degenerative intervertebral disc disease

Market opportunity

- Prevalent CLBP population in the US to grow to 21.9m patients by 2022 [1]
- 55% of CLBP population seek treatment [1]
- ~ 40% of patients with CLBP have a discogenic cause



Gap in treatment options

- For patients who fail conservative treatment (rest, analgesia), and epidural steroids, treatment options are limited to highly invasive therapies such as spinal fusion or artificial disc replacement
- Surgeons report that ~40% of patients ultimately fail back surgery [2]

Targeted physician population

- Specialists: Targeted physician audience & commercial footprint
  - Pain management specialists and anaesthesiologists
  - Orthopedic / spine surgeons

MPC-06-ID is positioned to fill the significant treatment gap in patients with moderate to severe CDLBP after conservative treatment options have failed

1. LEK & NCI opinion leader interviews, and secondary analysis
2. Shapiro CM Phys Med Rehabil Clin N Am 2014

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MPC-06-ID: Phase 2 Trial Results Support Progress into Phase 3

Phase 2 Trial Design

- Randomised, blinded, placebo-controlled, multi-centre trial in 100 patients
- Evaluated intra-discal injection of two separate doses: 6 million MPCs (MPC-06-ID), and 18 million MPCs (both administered with HA carrier), and compared to a saline placebo control or HA alone injection

Phase 2 Results

A single injection of the MPC-06-ID product candidate was safe and well tolerated, and resulted in a durable treatment effect over 12 months, specifically:

- 68% of MPC-06-ID vs 31% of saline controls achieved a ≥ 50% improvement in VAS through 12 months ($p<0.05$)
- 48% of MPC-06-ID vs 12% of saline controls achieved minimal or no residual pain at 12 months (VAS ≤ 20; $p<0.05$)
- MPC-06-ID treated patients had a significantly reduced need for additional interventions at the treated disc level vs saline controls (Kaplan-Meier analysis of time to a first additional treatment $p<0.05$)

Phase 2 data was presented at the 2014 North American Spine Society Annual Meeting

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MPC-06-ID: CDLBP – Composite Endpoint for Phase 3

- Treatment options for CDLBP must address both decreased pain and improved function, defined as a Minimal Clinically Important Difference (MCID) in both pain (VAS) and function (ODI)
- A responder is defined by both regulatory authorities and key opinion leaders as meeting both VAS above 30% improvement in pain and ODI above 10 point improvement in function [1]
- MCID thresholds have been used for regulatory approval of surgical treatments in low back pain

Phase 2 results using composite endpoint:

- Composite endpoint requiring ≥ 50% improvement in low back pain (VAS), 15 point improvement in ODI and no treatment intervention (surgical or injection)
- 44% of patients who received a single injection of 6 million MPCs (MPC-06-ID) met this composite endpoint at both 6 and 12 months, compared with 12% of saline controls ($p<0.05$)

Global Phase 3 program

- Double-blinded, placebo controlled program evaluating a single dose of MPC-06-ID injected into the culprit degenerated disc vs saline controls
- Primary endpoint is the composite highlighted above
- Interim analysis during the second half of 2016
- Top-line data expected in the second half of 2017

1. VIII International Forum on Primary Care Research on Low Back Pain (Amsterdam, June 2006)

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MSC-100-IV: Graft vs Host Disease (GVHD) – Market Opportunity

MSC-100-IV is in development for pediatric and adults with acute GVHD following allogeneic hematopoietic stem cell transplant (HSCT) who have failed to respond to steroid treatment

Market opportunity

- ~30,000 allogeneic HSCTs performed globally each year, 25% pediatric [1,2]
- ~ 50% of all patients develop GVHD (Grades II-IV) [3]
- ~50% acute GVHD steroid-refractory [4]
- Total one year cost of multi risk factor transplant complications USD$845,000 - $1,000,000 [5]

No approved treatment options

- Mortality can reach 85% in patients with liver & gut complications
- No currently approved therapies for steroid refractory patients
- Off-label options have mixed efficacy with high toxicity
- Significant need for a new treatment with a favorable risk/benefit profile

Targeted physician population

- Highly targeted physician audience & commercial footprint for lead launch in pediatrics
- ~ 68 centers in the US conduct pediatric allogeneic HSCTs
- ~ 50% of all pediatric transplants concentrated in 12 centers & key metropolitan areas

1. Gratwohl T el al, Quantitative and qualitative differences in use and trends of hematopoetic stem cell transplantation : a Global Observation study. Haematollogica 213;98(8)
2. CIBMTR, Decision resources GVHD Epi Nov 2012.
3. Decision resources Niche Markets and Rare diseases: GVHD Nov 2012
4. Cahn et al prospective evaluation of 2 aGVHD grading systems Blood Aug 2005
5. Svahn BM et al, Increased costs after allogeneic haematopoetic SCT are associated with major complications and re-transplantation BMT 2012; 47:706-715

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MSC-100-IV: Evidence of Efficacy in GVHD

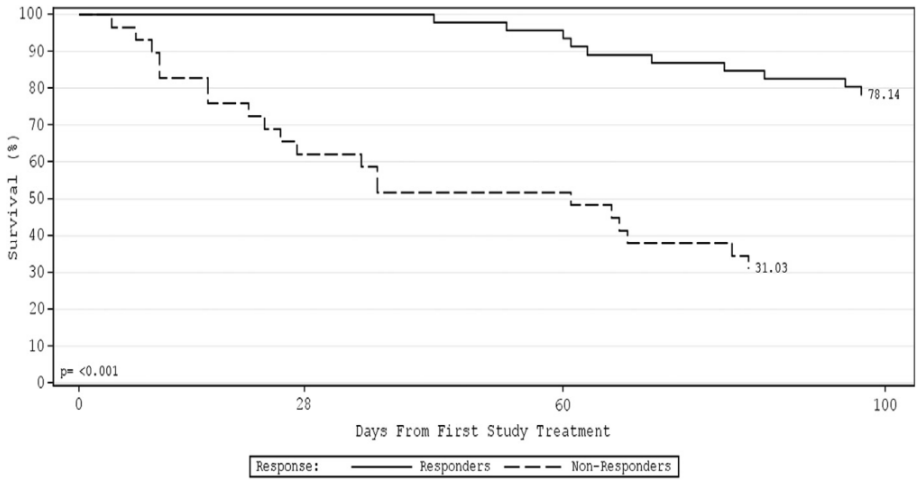
Pediatric Patients [1]

- Expanded Access Program in US has treated in excess of 200 patients
- In first 75 patients, response at day 28 to MSC-100-IV therapy was a significant predictor of improved day 100 survival ($p<0.001$)
- Day 100 survival was 76% in MSC-100-IV responders, compared to 28% in non-responders (p value <0.001, log rank test)

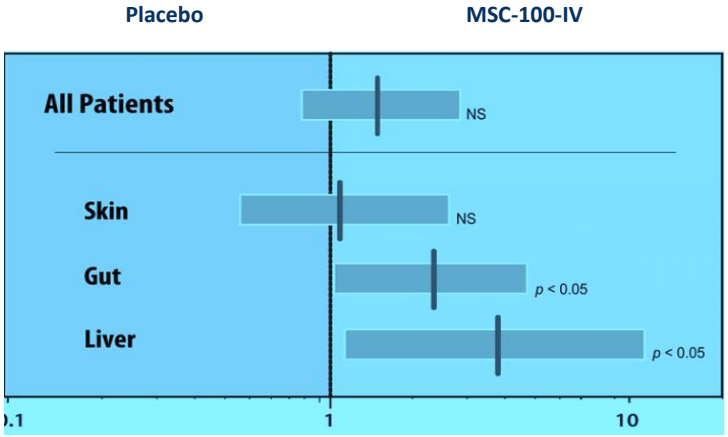
Adult Patients [2]

- In a randomized, placebo-controlled Phase 3 trial, MSC-100-IV significantly improved overall responses in the adult subset with gut or liver GVHD, and resulted in improved survival in this important subset.

Pediatric Day 100 survival [1]



Adult response day 100 by organ (Odds Ratio) [2]



1.Kurtzberg J. et al Allogeneic hMSC therapy as a rescue agent for severe refractory aGVHD in pediatric patients BBMT Nov 2013

2.Martin PJ et al Abstract #41 BBMT Supplement 16 s169-170: Data on file

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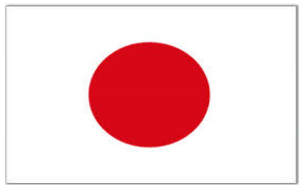
MSC-100-IV/JR-031 : Product Launch Plans in GVHD



Japan

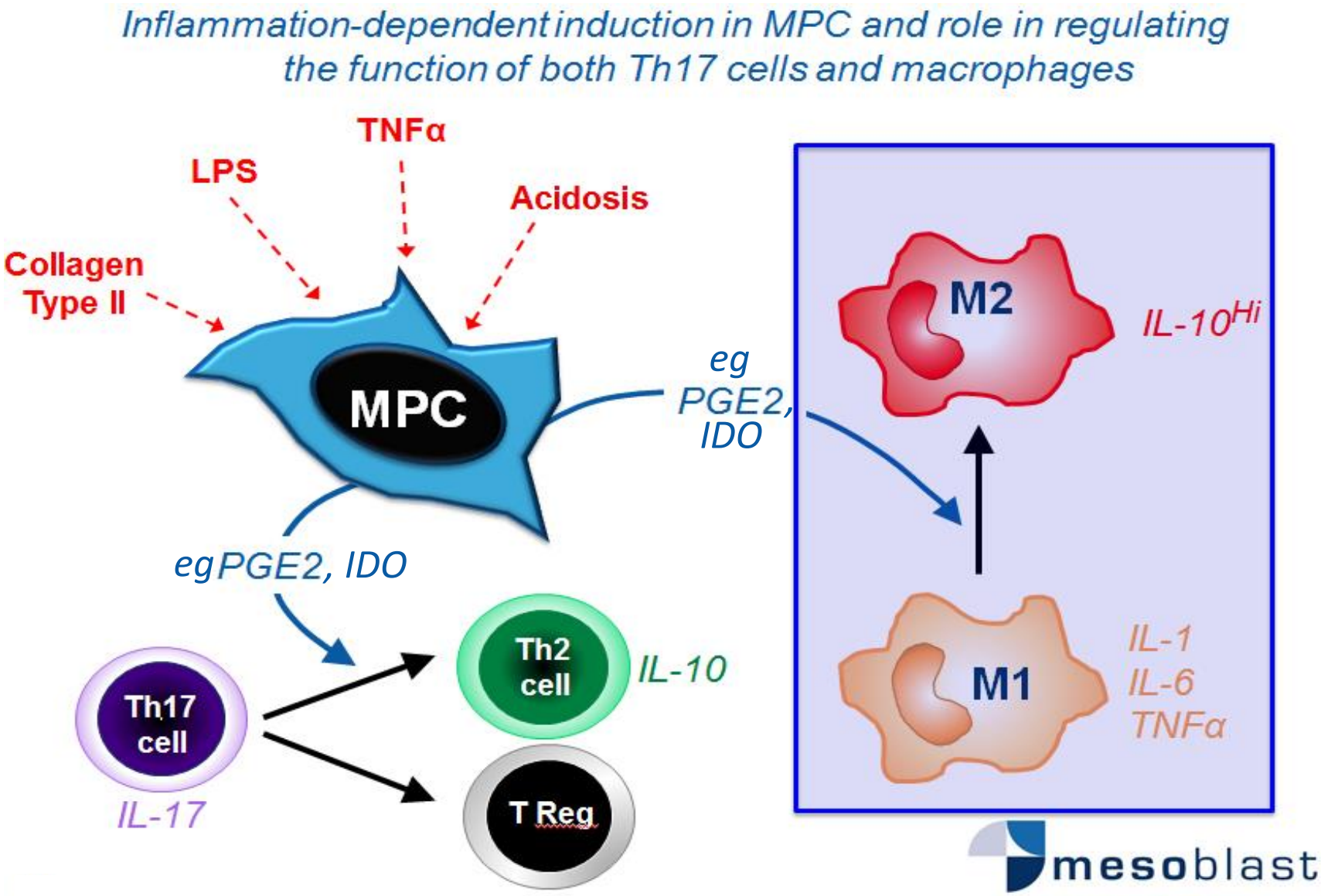
- JCR Pharmaceuticals Co Ltd., our GVHD partner in Japan, filed for regulatory approval for JR-031 in Japan in September 2014 and was granted orphan drug priority review

North America

- **Canada**
  - Manufacturing and Commercial readiness
  - Canadian launch for pediatrics in 2016
- **United States**
  - Positive FDA meeting July 2014 - pathway for accelerated approval clarified
    - 60 patient open-label Phase 3 pediatric trial initiated
    - Confirmatory Phase 3 adult trial design in liver/gut subset
  - Manufacturing and Commercial readiness
  - BLA filing for pediatric registration on track for second half 2016

MSC-100-IV has potential to be first allogeneic stem cell product approved in United States – "halo" effect for Mesoblast's commercial go to market capability

MPC-300-IV for Treatment of Chronic Inflammatory Diseases



MPC-300-IV: Biologic Refractory Rheumatoid Arthritis– Market Opportunity

Ongoing randomized, controlled Phase 2 Trial in 48 patients with biologic refractory rheumatoid arthritis, comparing two doses of MPC-300-IV against placebo

Market opportunity

- 1.3M Americans afflicted with RA[1]
- Incidence increases with age 8.7/100,000 for ages 18-34 vs 89/100,000 for ages 65-74[1]
- Responsible for 250,000 hospitalizations and 9M physician visits/year in the USA
- RA diagnosis associated with a more than 2x greater risk of CV death
- Targeting moderate to severe RA patients who have failed a previous biologic therapy

Gap in treatment options

- Despite standard of care ~30% of RA patients do not respond or cannot tolerate currently available therapies
- Sustained remission only occurs in 8-10% of patients on biologics
- Biologics are associated with increased incidence of opportunistic infections and malignancies
- RA pathology involves multiple cytokine signals/pathways; current biologic therapies target only single cytokine pathways
- Unmet need for a therapy that can safely and effectively induce remission in more patients
- Need for disease-modifying therapies with greater efficacy (measures such as remission or ACR 50 and ACR 70)

Targeted physician population

- Rheumatologists

1. GlobalData© Rheumatoid Arthritis Therapeutics – Pipeline. Oct 2011

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MPC-300-10-IV: Diabetic Kidney Disease – Market Opportunity

Market opportunity

- 40-50% of all diabetes patients (19 million in 2013 in US) develop renal complications. Diabetes accounts for 43% of all kidney failure (ESRD) in the US, making it the primary cause of the condition
- Stage 3b-4 (GFR 20-45 ml/min/1.73 m2) estimated ~200,000 incident cases annually. Total prevalent cases 1.8M[1]
- The estimated annual cost of diabetic nephropathy in the US is $24 billion[2]

Gap in treatment options

- Standard of care (SOC) Renin Angiotensin System (RAS) inhibition modestly slows the progression of diabetic nephropathy (16-25%)
- RAS inhibition reduces the progression to renal replacement or death by 25%, leaving a large residual risk of 75%. Current SOC only slows the rate of deterioration in renal function
- The only treatment option for ESRD is renal replacement (dialysis or transplant); 40% of patients are dead within 2 years of initiating dialysis[3]
- Cost of renal replacement therapy is $100,000/year (dialysis) - $250,000 (transplant)[2]

Targeted physician population

- Patients with Stages 3B-4 are generally managed by the nephrologists. There are ~ 7,000 in in the US in practice[3]
- Endocrinologists/diabetologists also critical. There are ~ 4,500 in the US in practice[4]

There is a significant and urgent need for true disease modifying therapies, with the goal of halting or reversing renal damage in patients with chronic kidney disease

1. Levey A and Coresh J.
2. U.S. Renal Data System Annual Data Report 2012
3. Robinson B. et al. *Kidney Int*. 2014 January ; 85(1): doi:10.1038/ki.2013.252 [In press]
4. 2012 AAMC Physician Specialty Data Book

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MPC-300-IV for Treatment of Chronic Inflammatory Diseases

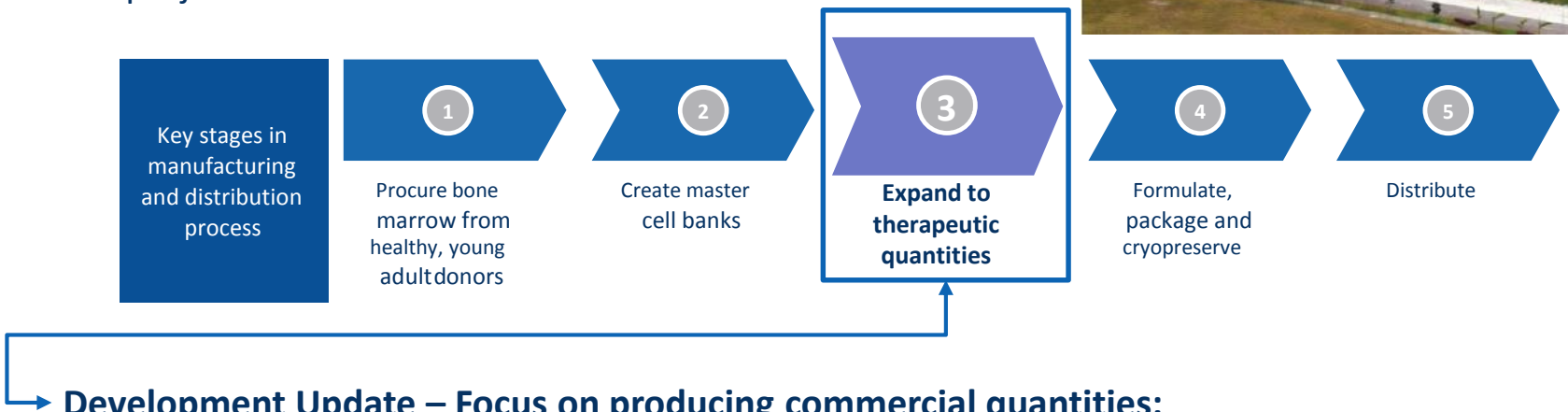
Three Phase 2 clinical trials, 138 patients, three chronic inflammatory conditions

- **Type 2 Diabetes with inadequately controlled glucose, 60 patients – *Completed***
  - Randomized, placebo controlled dose-escalating study completed
  - Positive dose-dependent effects seen on reducing HbA1c levels over 3 months
  - The highest dose (2 million MPC/kg) demonstrated a significant reduction in HbA1c levels at 8 weeks post treatment relative to controls ($p<0.05$)
- **Biologic-refractory Rheumatoid Arthritis, 48 patients – *Ongoing***
  - Randomized, placebo controlled, dose-escalating study
  - First dose / Cohort 1 is fully enrolled
  - 6 month topline data expected H2 CY2015
- **Diabetic Kidney Disease, 30 patients – *Ongoing***
  - Randomized, placebo controlled, dose-escalating study
  - All cohorts / study is fully enrolled
  - 6 month topline data expected Q1 CY2015

Scalable Manufacturing Capabilities: Objectives and Update on Development

Manufacturing objectives

- Distinct manufacturing processes for each product
- Commercial scale processes with batch-to-batch consistency and reproducible release criteria
- Ensure commercial product supply is aligned with projected market needs



Development Update – Focus on producing commercial quantities:

- **Substantial advances made in development of 3-D manufacturing processes:** Potential to improve efficiency and yields in large commercial-grade bioreactors
- **Proprietary serum-free media developed:** Potential to deliver step-change yield improvements and eliminate risk of source material constraints (e.g. fetal bovine serum; FBS)

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Significant Upcoming Milestones by Calendar Year

Product Candidate	Programs	Anticipated Milestones	2015	2016	2017	2018
MPC-150-IM	Class II and III Congestive Heart Failure	Phase 3 enrollment for first interim analysis (IA) complete 2Q 2015				
		Phase 3 first IA results 1Q 2016				
		Phase 3 second interim analysis (safety & efficacy analysis) in 2017				
		Phase 3 trial complete 2018				
	Class IV Heart Failure requiring LVAD	Phase 2b trial fully recruited in 2H 2016				
MPC-06-ID	Chronic Discogenic Low Back Pain	Phase 3 enrollment complete in mid 2016				
		Phase 3 interim analysis (IA) expected mid 2016				
		Phase 3 top-line data in 2017				
MSC-100-IV	Pediatric Acute Steroid Refractory Graft Versus Host Disease	Launch in Canada 2H 2016				
		BLA filing (US) in 2H 2016				
MPC-300-IV	Rheumatoid Arthritis (Biologic Refractory)	Top-line Phase 2 results in 2H 2015				
	Diabetic Kidney Disease	6-month data from Phase 2 in 1Q 2015				

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Questions / Thank you