mesoblast
the regenerative medicine company

Annual General Meeting

Melbourne
22 October 2015

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

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. Forward-looking statements should not be read as a guarantee of future performance or results, and actual results may differ from the results anticipated in these forward-looking statements, and the differences may be material and adverse. Uncertainties 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. We do not undertake any obligations to publicly update or revise any forward-looking statements, whether as a result of new information, future developments or otherwise.

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

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Financials

Total shares outstanding (30 June 2015)	~337.0 million
Issued shares in FY15 (including 4.5% equity stake to Celgene Corporation)	~15.4 million
Current share price (market close, 21 October 2015)	A$3.40
Market capitalization (market close, 21 October 2015)	~A$1.15 billion
Cash reserves (30 June 2015)	A$144 million

Lead Product Candidates and Achievements over past 12 months

Portfolio of Product Candidates in Phase 3 or with Regulatory Approval

MSC-100-IV/TEMCELL® HS Inj. - Acute Graft Versus Host Disease (aGVHD)

- ✓ Our licensee, JCR Pharmaceuticals Co. Ltd., received full approval from the Japanese Ministry of Health, Labour and Welfare for TEMCELL® HS Inj., the first industrially manufactured stem cell product in Japan.
- ✓ Expected launch in Japan Q1 2016
- ✓ Agreement with US Food and Drug Administration (FDA) on accelerated pathway to US approval for MSC-100-IV
- ✓ Open-label Phase 3 study in ~60 children is actively recruiting in the US

MPC-150-IM - Chronic Heart Failure (CHF)

- ✓ Phase 2 results showed significant cardioprotective benefits in patients with advanced heart failure
- ✓ Clarity from FDA meeting on pathway to US approval
- ✓ Phase 3 trial recruiting well
- ✓ Potential for early completion based on overwhelming efficacy at interim timepoint

MPC-06-ID - Chronic Low Back Pain (CLBP) due to Degenerative Disc Disease (DDD)

- ✓ Positive outcomes demonstrated in Phase 2 trial for at least 24 months
- ✓ Positive feedback and alignment between the FDA and the European Medicines Agency
- ✓ Phase 3 trial in CLBP is recruiting well

Lead Product Candidates and Achievements over past 12 months (2)

Anti-Inflammatory Portfolio - a Major Emerging Opportunity

- ✓ Biologic Refractory Rheumatoid Arthritis (RA) - 1st cohort fully enrolled, 2nd cohort actively recruiting
- ✓ Phase 2a trial in diabetic kidney disease demonstrated preservation or improvement in renal function over at least 24 weeks
- ✓ Biologic refractory Crohn's disease study continues

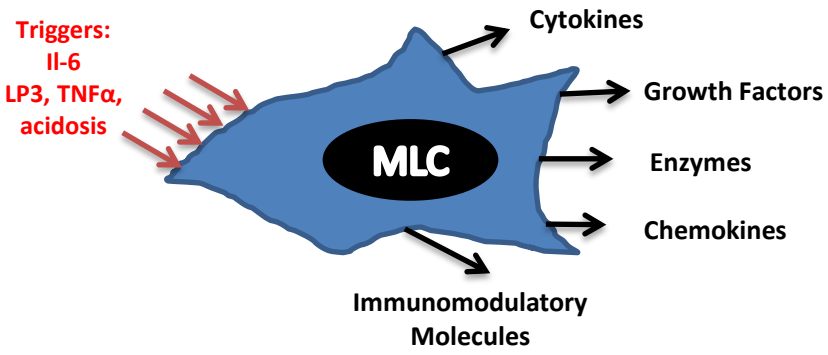
Significant Progress in Manufacturing

- ✓ Substantial advances in commercial scale, consistent high yield manufacturing processes
- ✓ Developed a proprietary serum-free media with potential to greatly improve yields

1 Disruptive Technology Platform

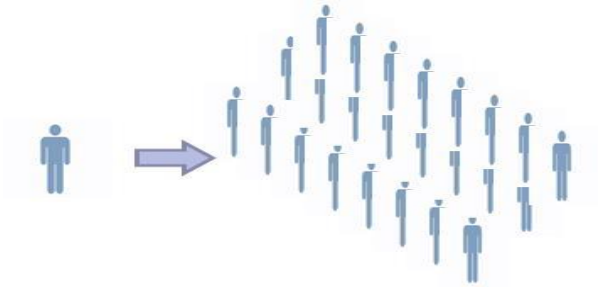
Multiple, Diverse Mechanisms

- Mesenchymal Lineage Adult Stem Cells (MLCs), immunoselected precursors and progeny
- Located around blood vessels in all vascularized tissues
- Respond to signals associated with tissue damage
- Secrete diverse variety of biomolecules responsible for tissue repair and immunomodulation



Allogeneic Use

- MLCs from a single healthy donor can be expanded to thousands of doses
- Isolation from diverse tissue sources (bone marrow, adipose, dental pulp)
- Potential for large-scale expansion via proprietary manufacturing processes
- Relatively non-immunogenic due to immunomodulatory properties
- Allows for allogeneic, off-the-shelf products



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1 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, Distinct 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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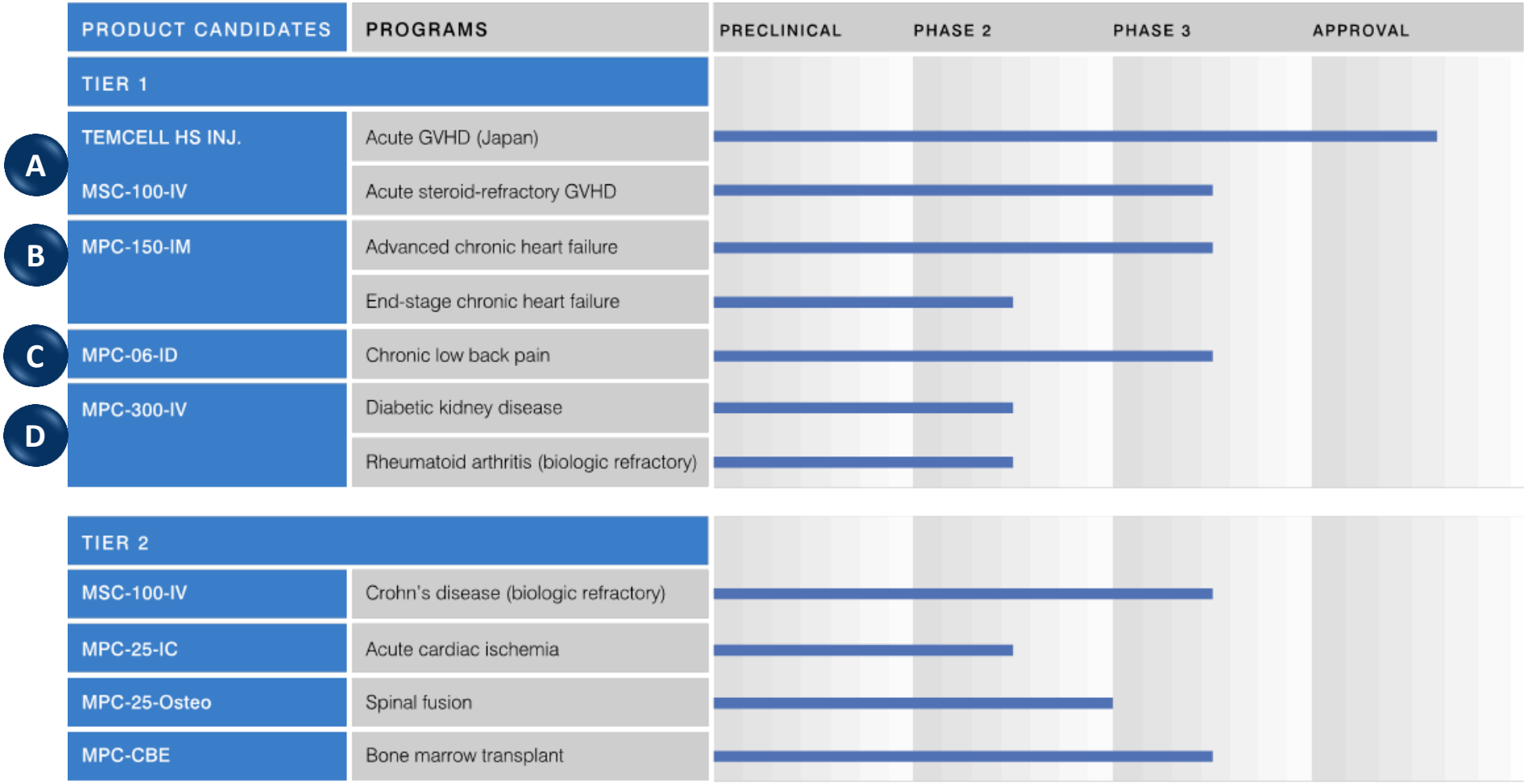
2 Five product candidates in active Phase 3 programs or Phase 3-ready



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.

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3 Extensive Intellectual Property Portfolio – 661 patents across 72 families#

Composition of matter (COM) and manufacturing process

141 patents or patent applications Valid through 2024-2035*

- MPCs– *58 patents or patent applications related to MPC composition of matter or methods of isolation, expansion and manufacture of MPC's – start to expire 2020* and extend to 2029**
- *MSCs – 51 granted patents or patent applications related to MSC composition of matter and manufacture of MSC's –start to expire 2018* and extend to 2035**
- DPSCs – *32 patents or patent applications – start to expire 2021* and extend to 2024**

In the last 12 months we have had 34 new patents granted including 9 in the US, 6 in Japan, 5 in China and 14 in other jurisdictions

Specific therapeutic applications

382 patents or patent applications Valid through 2035*

- Immunologic / inflammatory disorders – *100 patents or patent applications – start to expire 2019* and extend to 2035**
- Cardiovascular disorders – *69 patents or patent applications – start to expire 2018* and extend to 2024**
- Orthopedic disorders – *65 patents or patent applications – start to expire 2017* and extend to 2032**
- Oncology / hematology – *96 patents or patent applications – start to expire 2019* and extend to 2030**
- Other therapeutic applications – *52 patents or patent applications – start to expire 2027* and extend to 2032**

Complementary technologies and additional candidates

138 patents or patent applications Valid through 2024-2032*

- Cell-based complementary technologies – *63 patents or patent applications - start to expire 2017* and extend to 2030**
- SDF-1 – *27 patents or patent applications –start to expire 2027* and extend to 2032**
- Factors and agents for cardiovascular and other fibrotic indications – *48 patents or patent applications –start to expire 2021* and extend to 2023**

*Excludes possible patent term extension; # as at August 31st 2015

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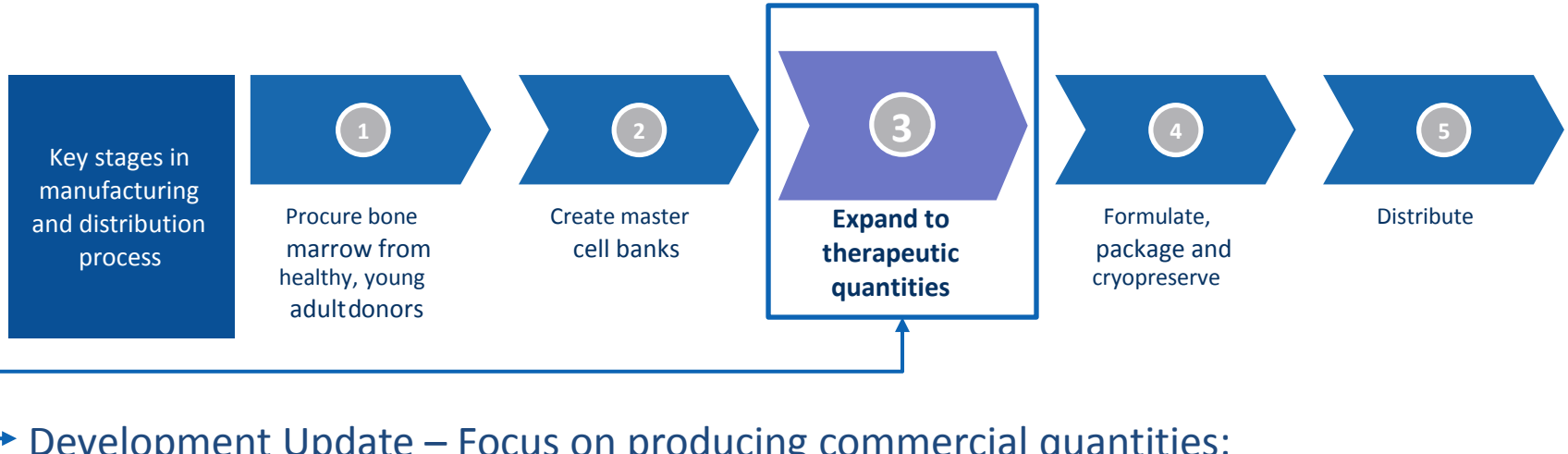
4 Scalable Manufacturing Capabilities: Partnership with Lonza

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

4 Significant Progress in Manufacturing



Development Update – Focus on producing commercial quantities:

- Substantial advances made in development of consistent high yield manufacturing processes to improve efficiency and yields in large commercial-grade bioreactors
- In-house proprietary serum-free media process has been identified, and is being developed to deliver step-change yield improvements
- Robust source of readily available standardised products for clinical and commercial use

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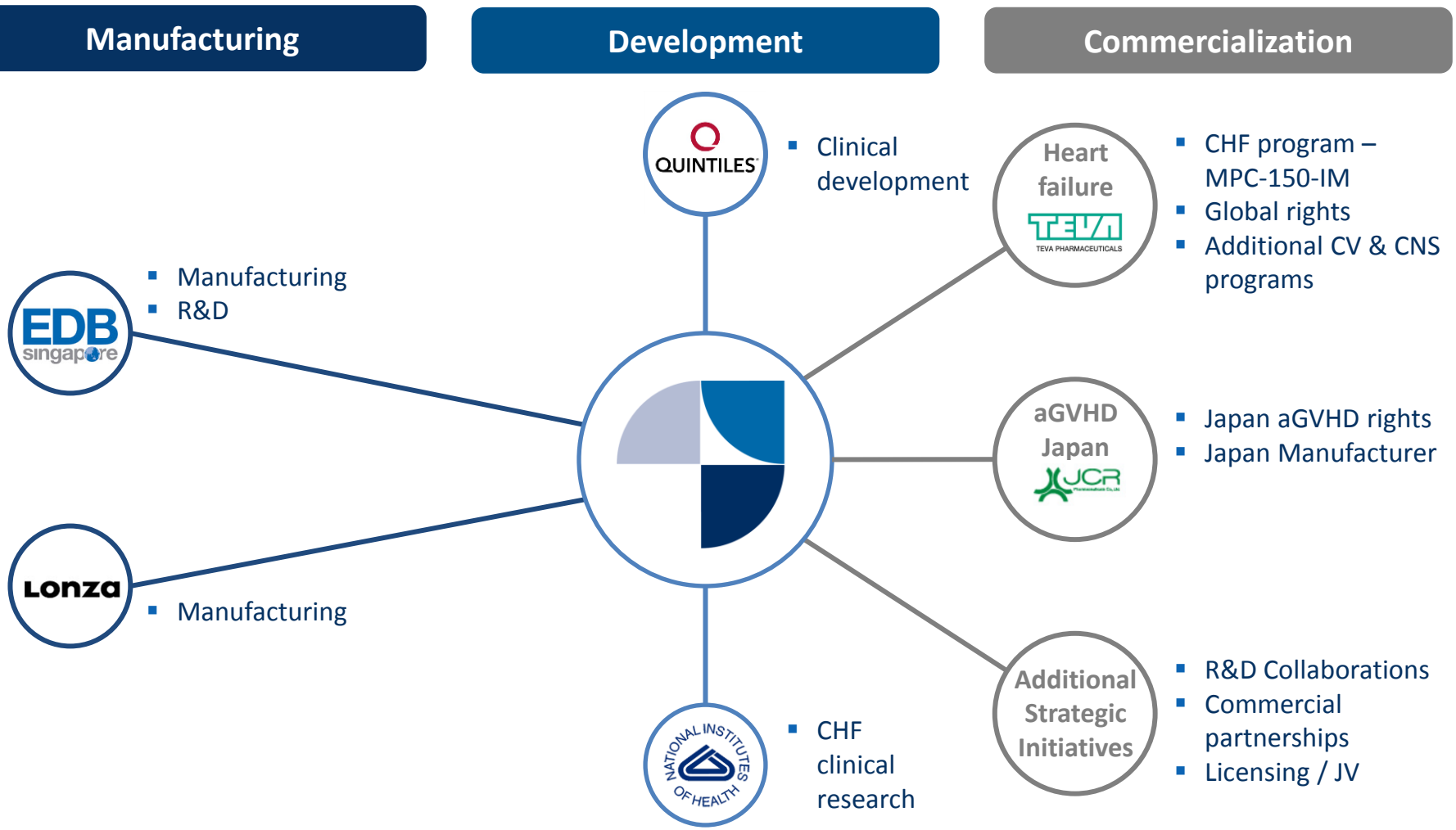
5 Strategic Collaborations with Industry Leaders



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Portfolio Overview

A MSC-100-IV / TEMCELL® HS Inj. : Acute Graft vs Host Disease – Market Opportunity

MSC-100-IV / TEMCELL® HS Inj. is targeting pediatric and adult patients with acute Graft Versus Host Disease (aGVHD) following allogeneic Bone Marrow Transplant (BMT).

Market opportunity	▪ ~30,000 allogeneic BMTs performed globally each year, 25% pediatric[1,2] ▪ ~3,700 allogeneic BMTs performed in Japan each year[3] ▪ ~50% of all patients develop aGVHD (Grades II-IV)[4]
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 pediatric launch in US ▪ ~ 75 centers in the US conduct pediatric allogeneic BMTs ▪ ~ 50% of all US pediatric transplants concentrated in 15 centers & key metropolitan areas

1. Gratwohl A et al Quantitative and qualitative differences in use and trends of hematopoietic stem cell transplantation: a Global Observational Study. Haematologica. 2013 Aug;98(8):1282-90.
2. CIBMTR, Decision resources GVHD Epi Nov 2012.
3. APBMT Annual Report Dec 2012; Assumes a growth rate of approximately 3% per year
4. Decision resources Niche Markets and Rare diseases: GVHD Nov 2012

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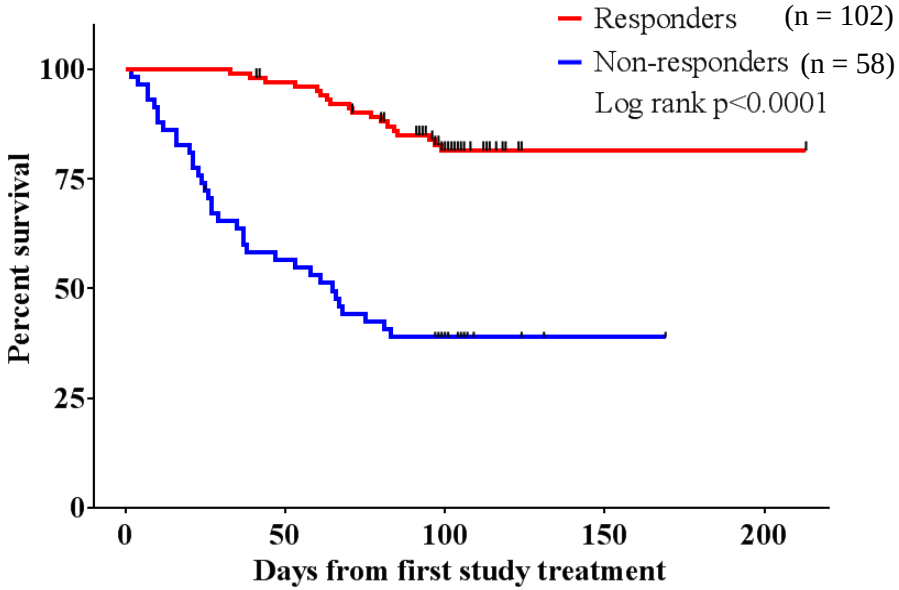
A MSC-100-IV: Phase 3 Trial in Children with Steroid Refractory Acute Graft vs Host Disease (SR-aGVHD)

MSC-100-IV in Children with SR-aGVHD who failed multiple other modalities



Survival of Pediatric Patients Treated with MSC-100-IV 28-Day Responders vs Non-responders

MSC-100-IV as first line therapy in children with SR-aGVHD

Response at Day 28	Randomized Placebo Controlled Trial		Open-label Expanded Access Program
	MSC-100-IV	Placebo	
Responder	9/14 (64.3%)	3/14 (21.4%)	25/32 (78.1%)
Non-responder	5/14 (35.7%)	11/14 (78.6%)	7/32 (21.9%)
		p-value = 0.0014	

Compared with placebo control patients, MSC-100-IV produced markedly superior overall response at day 28, a clinically meaningful endpoint (p=0.0014).

- Evidence that MSC-100-IV is effective when used as first line therapy in children with SR-aGVHD
- FDA agreement on 60 patient open label Phase 3 trial for accelerated US approval pathway
- Enrollment criteria: MSC-100-IV offered as first line therapy in children with SR-aGVHD

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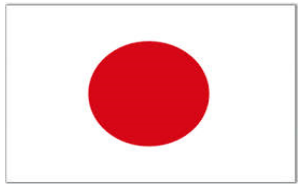
A MSC-100-IV / TEMCELL® HS Inj. : Product Launch Plans in aGVHD



Japan (TEMCELL® HS Inj.):

- Our licensee, JCR Pharmaceuticals Co. Ltd., received full approval from the Japanese Ministry of Health, Labour and Welfare for TEMCELL® HS Inj., the first industrially manufactured stem cell product in Japan
- 2nd largest country for allogeneic transplants with ~ 3,700 allogeneic BMTs performed[1]
- Expected launch in Q1 2016
- Mesoblast to receive royalties and other payments at predefined thresholds of cumulative net sales

US (MSC-100-IV):

- Agreement with FDA on accelerated pathway to US approval
- Open-label Phase 3 study in ~60 children is actively recruiting in the US
- Potential for FDA Rare Pediatric Disease Designation / Priority Review Voucher

TEMCELL® HS Inj. is the first allogeneic stem cell product approved in Japan
MSC-100-IV has the potential to be the first allogeneic stem cell product approved in US

1. APBMT Annual report Dec 2012

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

MPC-150-IM is in development for patients with New York Heart Association Class II-IV CHF

Market opportunity	▪ 5.7m patients (2% of the population) diagnosed with CHF in the US[1] ▪ 870,000 new cases diagnosed in the US each year[1] – Growing by 2% per annum ▪ ~1.9m CHF NYHA Class II-IV patients with low ejection fraction (<40%) in the US alone[2]
Gap in treatment options	▪ Class II / III CHF patients with low ejection fraction continue to be at high risk of repeated hospitalizations and mortality, despite standard of care pharmacological treatments [3] ▪ 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 CHF

1. AHA statistical Update – Heart disease and stroke statistics-2015 update Circulation 2015
2. Gurwitz JH, Magid DJ, Smith DH, et al. Contemporary Prevalence and Correlates of Incident Heart Failure with Preserved Ejection Fraction. *The American journal of medicine*. 2013;126(5):393-400.
3. European Heart Journal (2012) 33, 1750–1757 Figure 3

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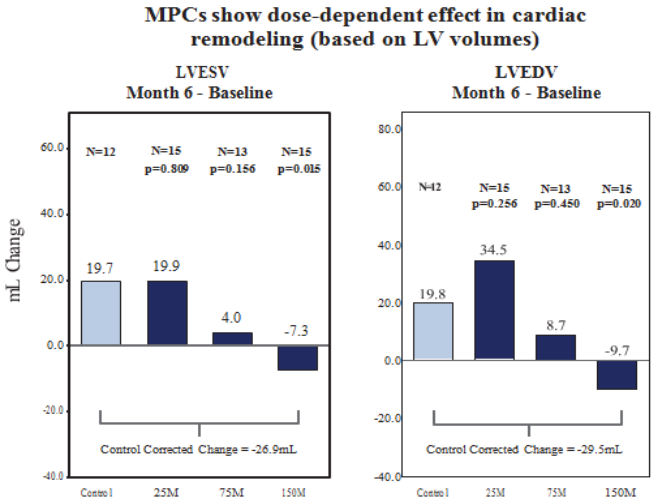
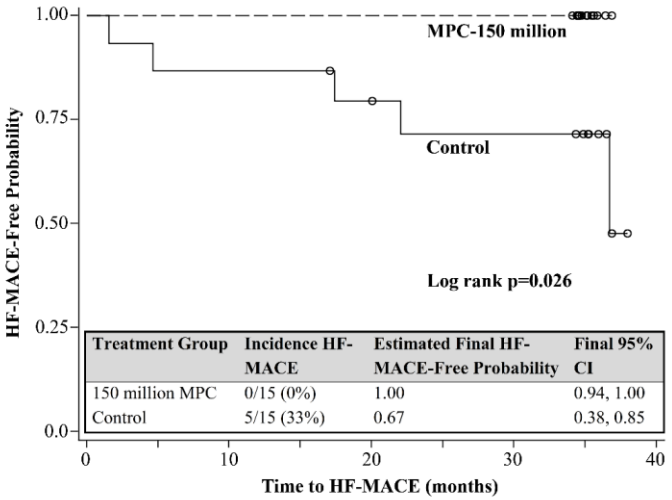
B MPC-150-IM: Phase 2 Trial Results in CHF Identifies Optimal Therapeutic Dose





Treatment Group	Incidence HF-MACE	Estimated Final HF-MACE-Free Probability	Final 95% CI
150 million MPC	0/15 (0%)	1.00	0.94, 1.00
Control	5/15 (33%)	0.67	0.38, 0.85

- Phase 2, randomised placebo controlled trial in 60 patients with Class II / III CHF and LVEF<40%
  - Placebo vs. 25, 75, 150 M MPCs injected by endomyocardial catheter
  - All doses were feasible and safe
- **At 6 months post-treatment:** Dose-dependent effect on left ventricular remodeling, with the 150 M cell dose (MPC-150-IM) showing greatest effect vs. controls
- **Over 36 months:** MPC-150-IM had 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 is defined as a composite of cardiac related death or resuscitated cardiac death or non-fatal decompensated heart failure events
  - The use of recurrent HF-MACE as a primary endpoint in the confirmatory study is supported by a new analysis of the completed Phase 2 trial which was presented at the 19th Annual Scientific Meeting of the Heart Failure Society of America in National Harbor, MD, USA. Patients treated with MPC-150-IM had no HF-MACE over 36 months of follow-up, compared with 11 recurrent HF-MACE in the control group (p<0.001, log rank test).

Circ Res. 2015 Jul 6. pii: CIRCRESAHA.115.306332.
A Phase II Dose-Escalation Study of Allogeneic Mesenchymal Precursor Cells in Patients With Ischemic or Non-Ischemic Heart Failure. Perin et al

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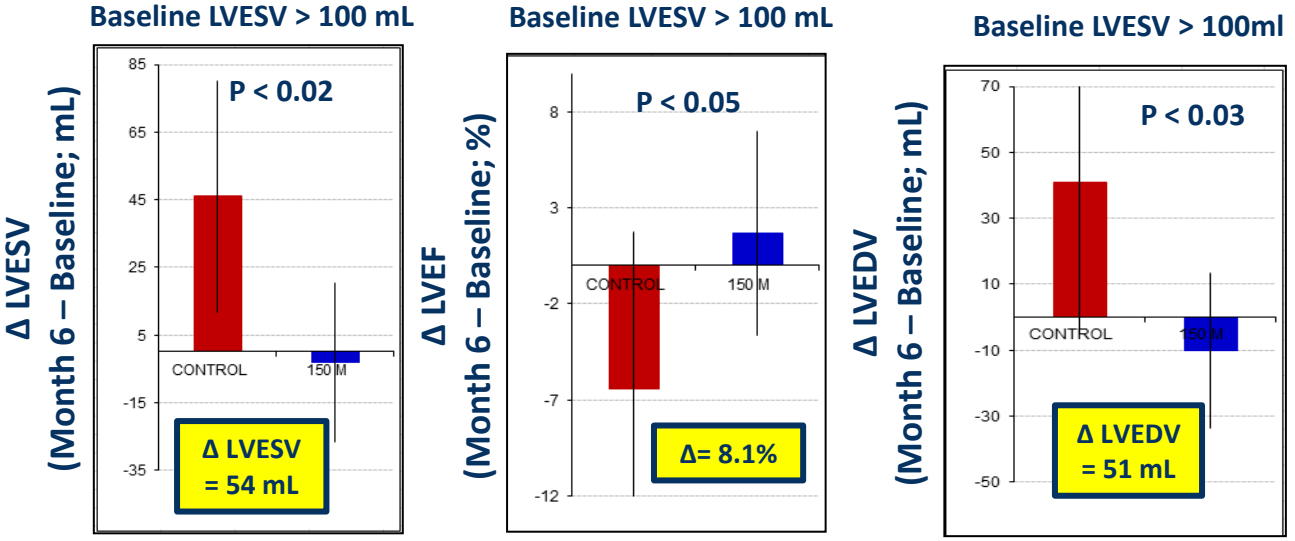
B MPC-150-IM: Phase 2 Therapeutic Benefit on LV Remodeling is Evident in Patients with Advanced Heart Failure[1]



	Change (Entire Cohort) Month 6 minus Baseline			Change (LVESV > 100 mL) Month 6 minus Baseline			
	PBO (n=15)	150 M MPC (n=15)	Δ, PBO Corrected	PBO (n=7)	150 M MPC (n=11)	Δ, PBO Corrected	P-values
LVESV	+20	-7	-27	+46	-8	-54	<0.02
LVEDV	+20	-10	- 30	+41	-10	-51	<0.03
LVEF	-2.3	+0.6	+2.9	-6.4	+1.7	+8.1	<0.05

1. Intention to treat (ITT) population, ANCOVA analysis

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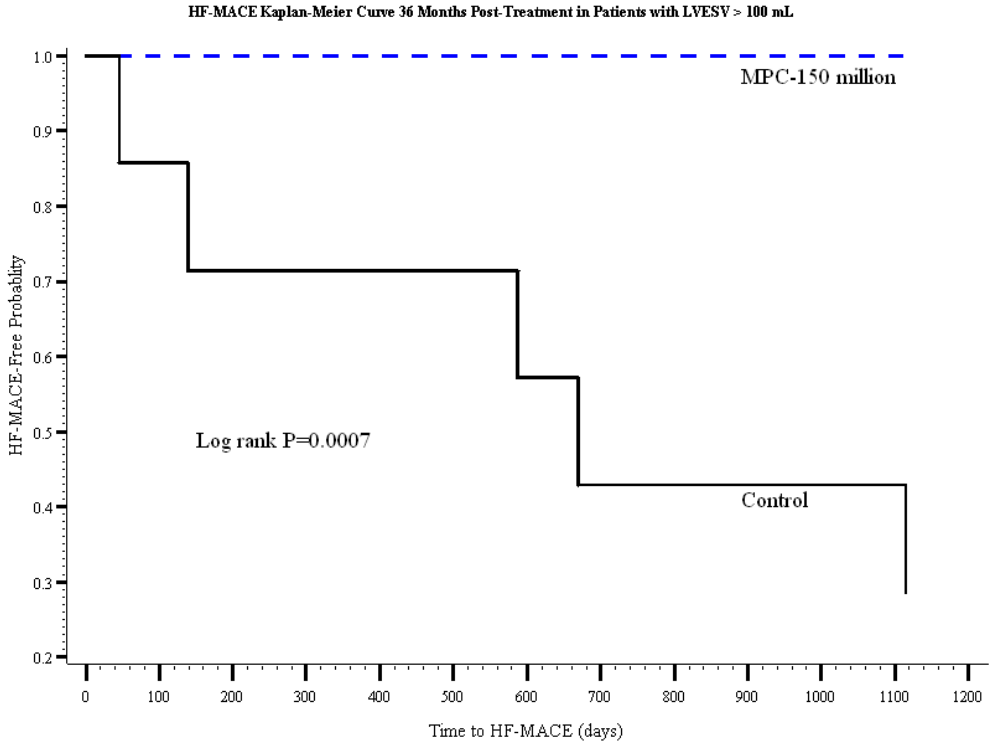
B MPC-150-IM: Phase 2 Therapeutic Benefit on LV remodelling is evident in Patients with Advanced Heart Failure



- All of the HF-MACE seen over 36 months in the Phase 2 trial occurred in control patients with baseline LVESV > 100 ml; the annualized HF-MACE rate was 24% in this group, with an overall 71% HF-MACE rate over 36 months
- In contrast, no HF-MACE were seen over the entire 36 months in 150 million MPC-treated patients with baseline LVESV >100 ml (p=0.0007 when analyzed by Kaplan-Meier time-to-first-event analysis and p<0.0001 by incidence analysis for total/recurrent HF-MACE, 0 versus 11 events)

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B MPC-150-IM: Phase 3 Pathway to Potential Approval in Patients with Advanced Heart Failure

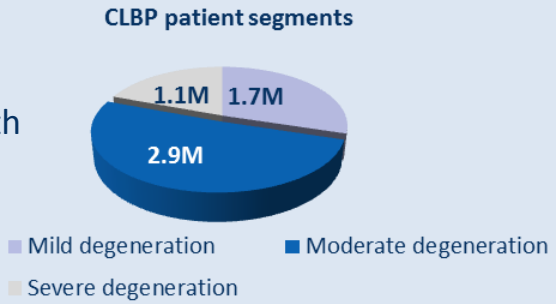
- An ongoing Phase 3 trial, using a time-to-first-event analysis of HF-MACE as the primary endpoint, is being conducted in approximately 1,165 patients, down from 1,730 following FDA agreement, (study conducted and funded by Mesoblast's development and commercial partner, Teva)
- The Phase 3 trial is enriched for patients with high baseline levels of NT-proBNP and a heart failure hospitalization within the last nine months.
- This enrichment is expected to result in the majority of enrolled patients having LV systolic dysfunction, baseline LVESV >100 ml and high rates of HF-MACE.
- An interim analysis will be performed when 50% of the HF-MACE have occurred which will include a test for superiority allowing for the possibility of stopping of the trial early based on overwhelming efficacy.
- A confirmatory study in a similar patient population of ~ 500 subjects is planned to be conducted in parallel using recurrent HF-MACE as the primary endpoint
- We believe that positive clinical data from these two studies will be supportive to each other for product approval

C MPC-06-ID: Chronic Low Back Pain due to Degenerative Disc Disease – Market Opportunity

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

Market opportunity

- Over 5.7m patients in the US suffer from CLBP due to degenerative disc disease (DDD)
- MPC-06-ID is being developed to target 4.0m patients with Moderate and Severe CLBP due to DDD



Gap in treatment options

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

Targeted physician population

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

MPC-06-ID is positioned to fill the significant treatment gap in patients with moderate to severe CLBP 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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C MPC-06-ID: 12 Month Phase 2 Trial Design

- 100 patients with >6 months of CLBP due to DDD and unresponsive to conservative therapies were evaluated in a randomized, placebo controlled trial
- Visual Analog Scale (VAS) scored from 0-100 evaluated at 1,3, 6 and 12 months
  - Minimally clinical important difference (MCID) in VAS is defined as >30% improvement[1]
  - Guidance from key opinion leaders and payers requires > 50% in pain reduction at a distinct time point
- Oswestry Disability Index (ODI) is a standardized measure of function and was evaluated at 3, 6 and 12 months
  - Minimally clinical important difference (MCID) in ODI is defined as >30% or 10 point improvement[1]
  - 15 point improvement has been used as the MCID for surgical devices to support FDA and EU marketing authorization

1. Ostelo RWJ, Deyo RA, Stratford P, et al. Interpreting change scores for pain and functional status in low back pain. Spine 2008; 33(1):90-94.

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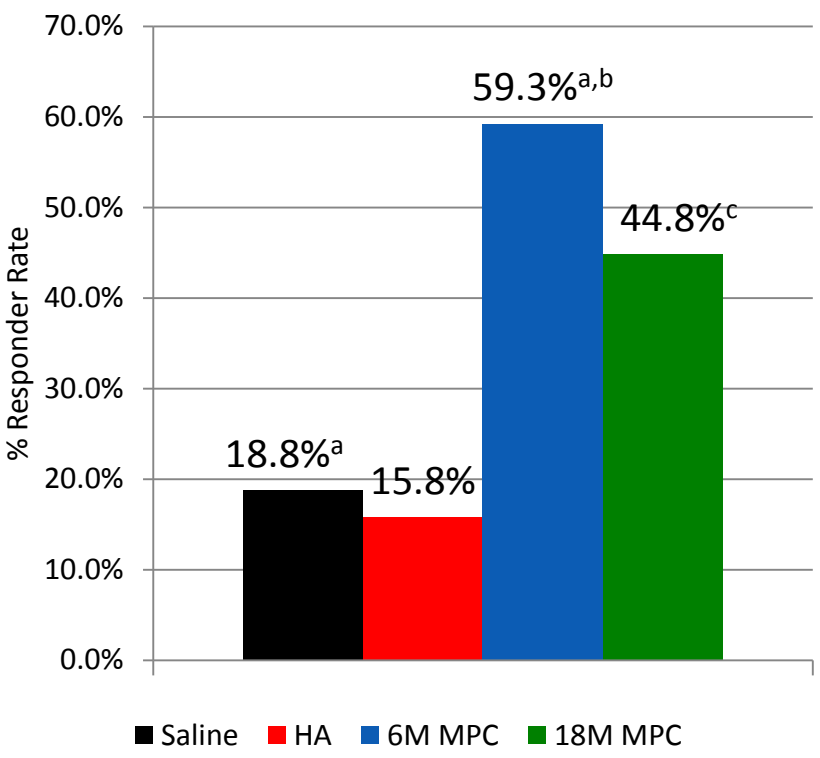
C MPC-06-ID: Pain and Function Responder Rates at Both 6 & 12 Months – Phase 2 Data

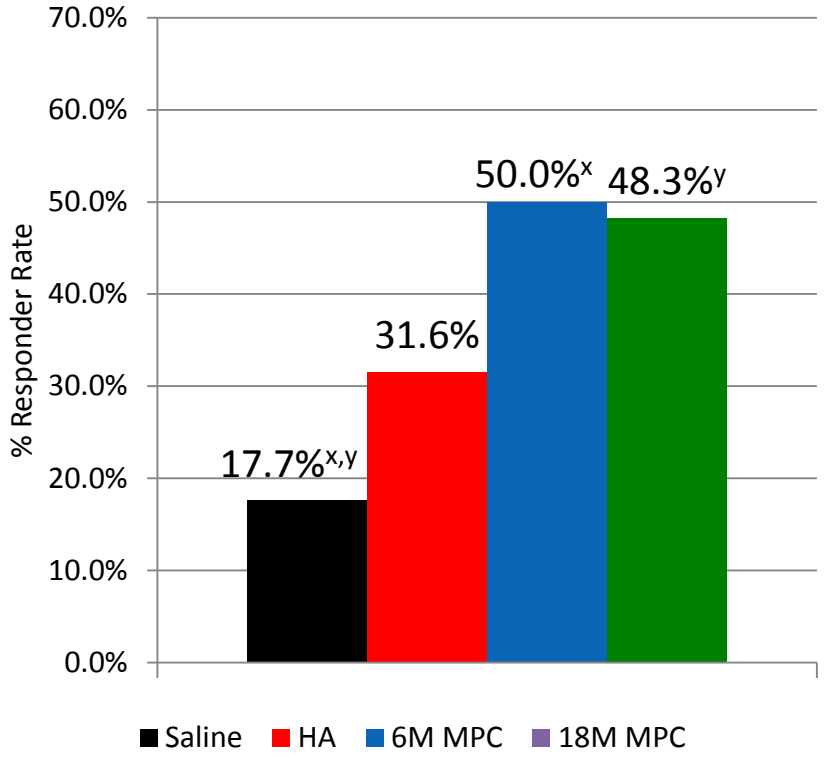
Pain Responders at Both 6 & 12 Months



Pain Responder Definition
50% VAS back pain reduction AND no intervention at the treated level

a. p=0.023 6M MPC vs. saline
b. P=0.006 6M MPC vs. HA
c. P=0.060 18M MPC vs. HA

Functional Responder at Both 6 & 12 Months

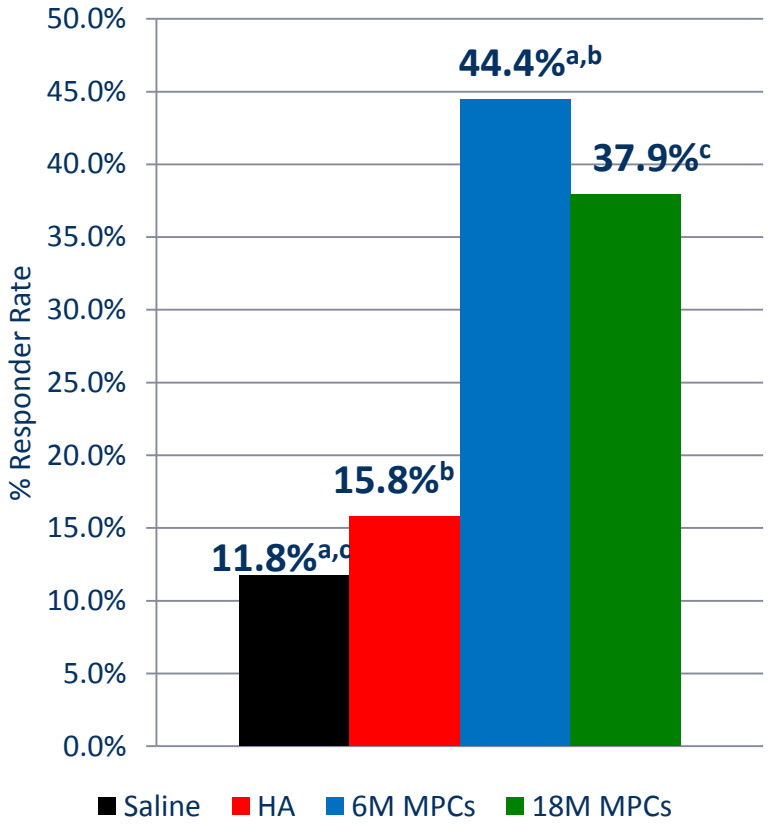


Functional Responder Definition
15 point ODI reduction AND no intervention at the treated level

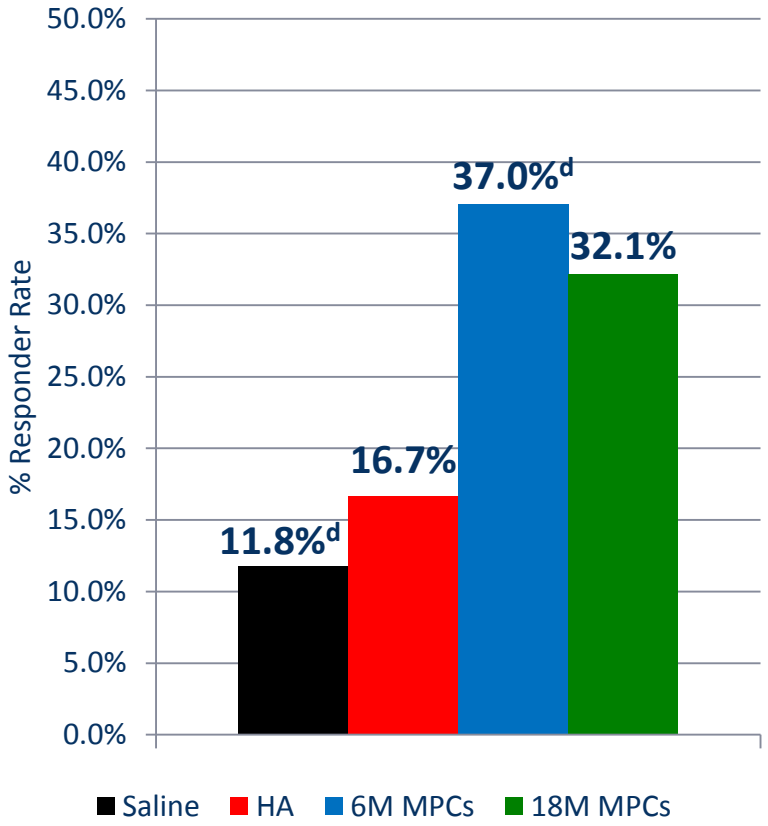
x. p=0.052 6M MPC vs. saline
y. p=0.058 18M MPC vs. saline

C MPC-06-ID: Composite Endpoint for both Pain and Function over 24 Months – Phase 2 Data

% Patients with treatment success at 6 & 12 months



% Patients with treatment success at 12 & 24 months



Treatment Success Composite Endpoint
50% VAS back pain reduction AND 15 point ODI improvement AND no intervention at the treated level

a. p=0.044 6M MPC vs. saline
b. p=0.058 6M MPC vs. HA
c. p=0.090 18M MPC vs. saline
d. p=0.090 6M MPC vs. saline

C Phase 3 Clinical Study Design

Initiated a Phase 3 program consisting of two confirmatory double-blinded, placebo controlled Phase 3 clinical trials ~330 patients per study

Efficacy endpoints:

- Consistent with approach for approval of spinal device technologies
- Subjects meeting each of the following criteria over 12 and 24 months
  - ≥ 50% reduction from baseline in low back pain VAS score AND
  - At least a 15 point decrease from baseline in ODI AND
  - No interventions at the treated disc
  - Pain Responder analysis
  - Functional Responder analysis

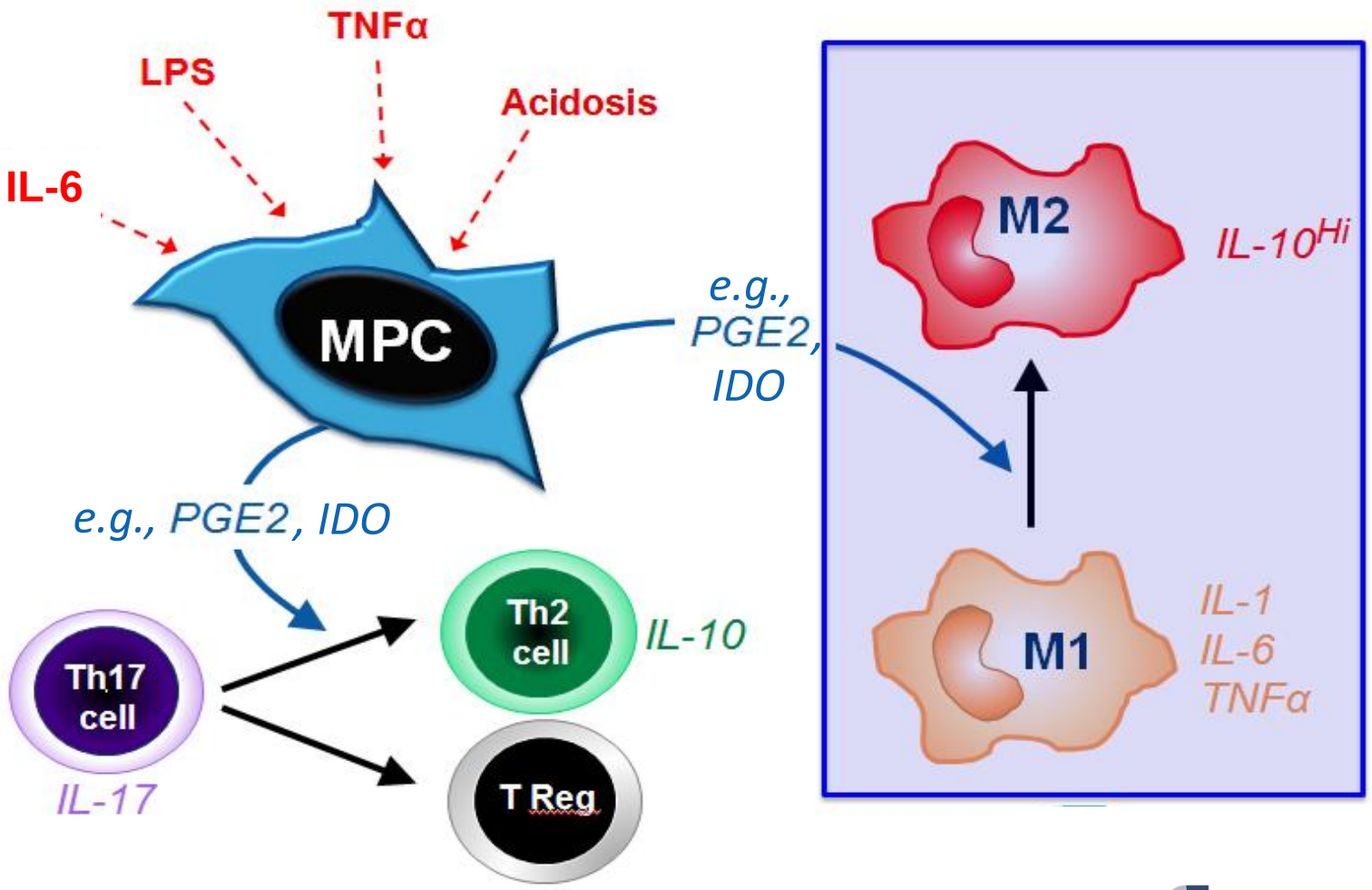
Anti-Inflammatory Portfolio - a Major Emerging Opportunity

- Mesenchymal Lineage Cells (MLCs*) have receptors that respond to pro-inflammatory signals, inducing release of multiple anti inflammatory mediators
- MLCs thereby target multiple immune pathways concurrently
- This should position MLC product candidates as ideal therapeutics for immune mediated diseases where multiple pathways are associated with disease activity for which there are no alternatives and/or resistance to other therapies
- MLCs have to date demonstrated a safe profile in terms of infectious or neoplastic complications; this may position them well relative to certain other biologic therapies
- Mesoblast developing MLC product candidates to target
  - Biologic refractory rheumatoid arthritis
  - Diabetic kidney disease
  - Biologic refractory Crohn's disease

 * Comprising MPCs and MSCs

D MPC-300-IV for Treatment of Chronic Inflammatory Diseases

Inflammation-dependent induction in MPC and role in regulating the function of both Th17 cells and macrophages



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D MPC-300-IV for Treatment of Chronic Inflammatory Diseases

- **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 Q4 2015
- **Type 2 Diabetes with inadequately controlled glucose, 61 patients – *Published in Diabetes Care in July 2015***
  - Randomized, placebo controlled dose-escalating study completed with no safety findings
  - 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 ($p < 0.05$)
- **Diabetic kidney disease, 30 patients – *Results Presented at Late Breaking Session At American Diabetes Association June 2015.***
  - Randomized, placebo controlled, dose-escalating study
  - Demonstrated preservation or improvement in renal function for at least 24 weeks
  - Planning next stages of clinical development

D MPC-300-IV: Biologic Refractory Rheumatoid Arthritis (RA) – 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

- 1.7m patients with RA in the US[1]
- Incidence increases with age – 8.7 per 100,000 for ages 18-34 vs. 89 per 100,000 for ages 65-74[2]
- Responsible for 250,000 hospitalizations and 9m physician visits per year in the US
- Aging population and early diagnosis and treatment will drive expanding RA prevalence
- Diagnosis of RA is associated with at least a 2X greater risk of death from CV disease
- Targeting active RA patients who have failed a previous biologic therapy

Gap in treatment options

- One third of RA patients do not respond or cannot tolerate current biologic therapies
  - Sustained remission defined by ACR 70 only occurs in 5-15% of patients on biologics[3]
  - Biologics are associated with increased incidence of opportunistic infections and malignancies
- Biologics only target single cytokine pathways even though RA involves multiple signals / pathways
- Need for disease-modifying therapies with greater safety and efficacy (e.g., remission / ACR 70)

Targeted physician population

- Rheumatologists

1. GlobalData©: EPiCast Models / PharmaeTrack
2. GlobalData©: Rheumatoid Arthritis Therapeutic – Pipeline Oct 2011
3. Alivernini, S et. al. Arthritis Research & Therapy 2009, 11:R163

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D MPC-300-IV: Diabetic Nephropathy (DN) – Market Opportunity

Market opportunity

- ~7.1 million patients with DN in the US[1]
- ~1.96 million patients with Stage 3b-4 (GFR 20-45 ml/min / 1.73 m^2) DN[3,4]
- ~200,000 incident cases per year with Stage 3b-4[2]

Gap in treatment options

- Despite standard of care, patients with Stage 3b-4 continue to progress to End-Stage Renal Disease (ESRD)
- The only treatment option for ESRD is renal replacement (dialysis or transplant)
  - 40% of patients are dead within 2 years of initiating dialysis[5]
- Cost of renal replacement therapy is $100,000 per year (dialysis) - $250,000 (transplant)[3]

Targeted physician population

- ~7,000 nephrologists, who generally manage patients with Chronic Kidney Disease Stage 3b-4 including those with diabetes, in the US[6]
- ~4,500 endocrinologists / diabetologists, who are also critical, in the US[6]

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. EpiCast Model Diabetic Nephropathy – Epidemiology Forecast to 2022 PharmaeTrack 2. Global Data PharmETrack; Solicited Analysis 3.US Renal Data System Annual Data Report 2012,2013,2014, 4. Levey A and Coresh J. Lancet 2012; 379:165-180, 5. Robinson BM et al. Kidney Int 2014 6. 2012 AAMC Physician Specialty Data book

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D MPC-300-IV: Diabetic – Phase 2 Diabetic Nephropathy Trial Design

- 2012 joint workshop held by FDA and National Kidney Foundation concluded that time to 30-40% decline in GFR may be an acceptable primary endpoint for evaluating potential benefits of new therapies in advanced kidney disease[1].
- Objective: To assess the safety and efficacy of a single infusion of two doses of MPCs in subjects with type 2 diabetes and Stage 3b-4 DN on a stable regimen of Angiotensin-Converting-Enzyme inhibitor or Angiotensin Receptor II Blocker therapy.
- Design: Placebo controlled 2:1 randomized trial in 30 patients
- Efficacy Endpoints: Effect on GFR decline of MPCs vs Placebo and exploration of inflammatory biomarkers that may reflect mechanism of action.

1. Levey et al. GFR decline as an endpoint in clinical trials for CKD. American Journal of Kidney Disease. 2014:64(6):821-835

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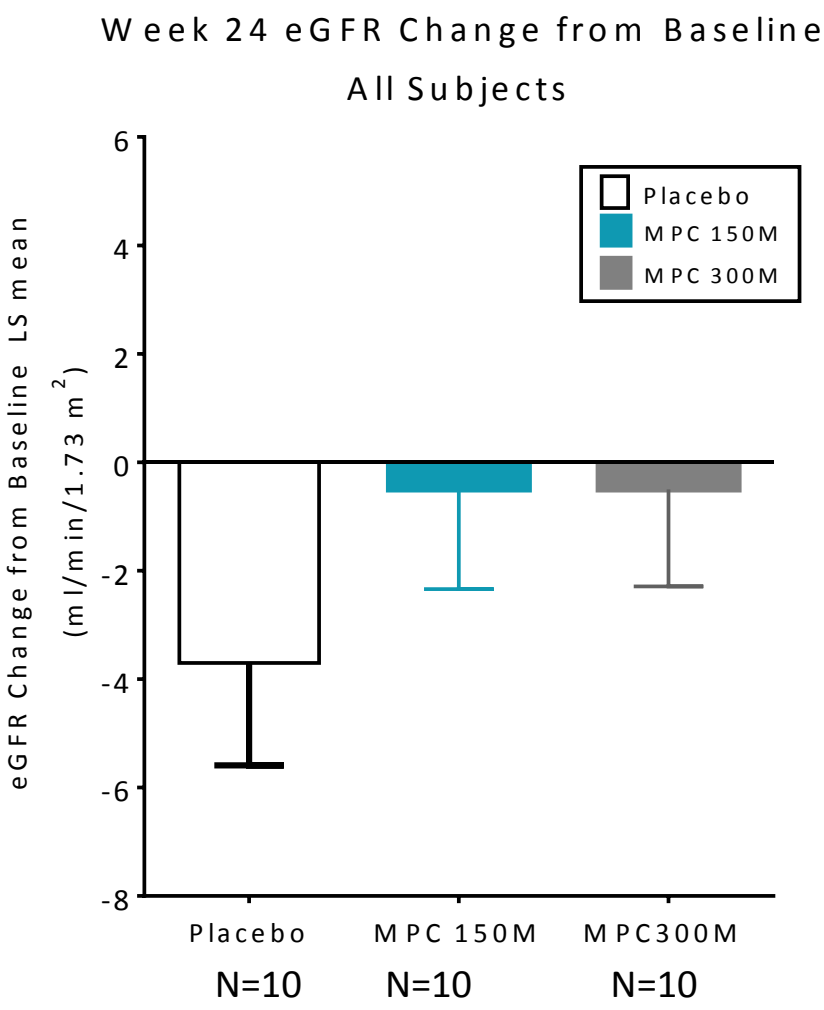
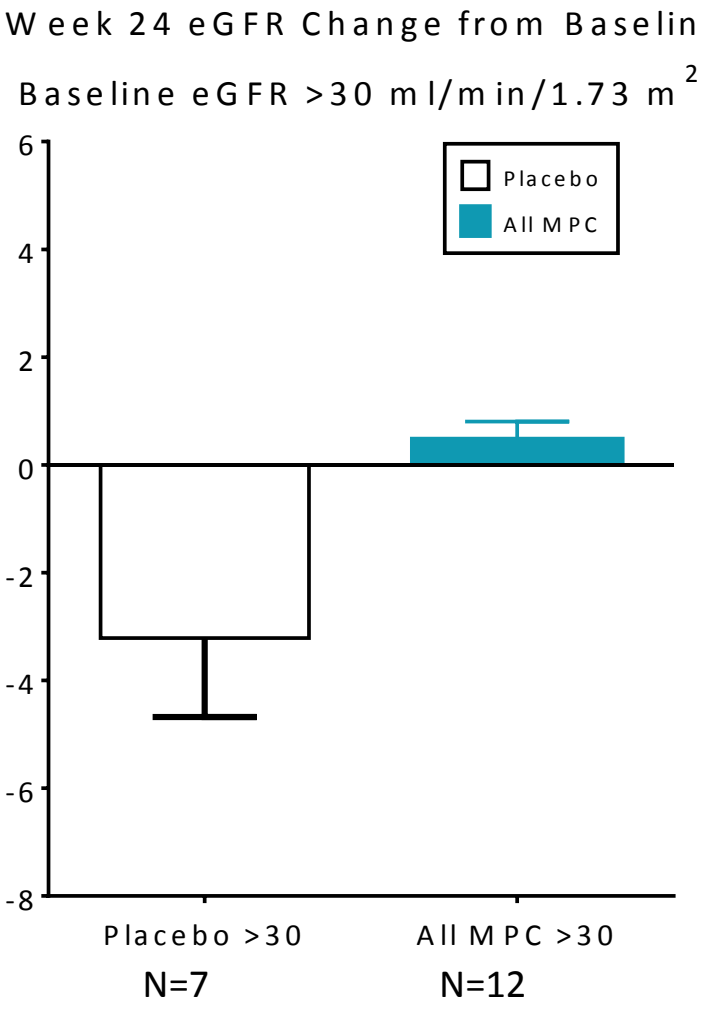
D MPC-300-IV: Diabetic Kidney Disease Phase 2 Results – Improvement in GFR at 24 weeks





Values are least squares means (SE)
Source: Table 15.2.2.11

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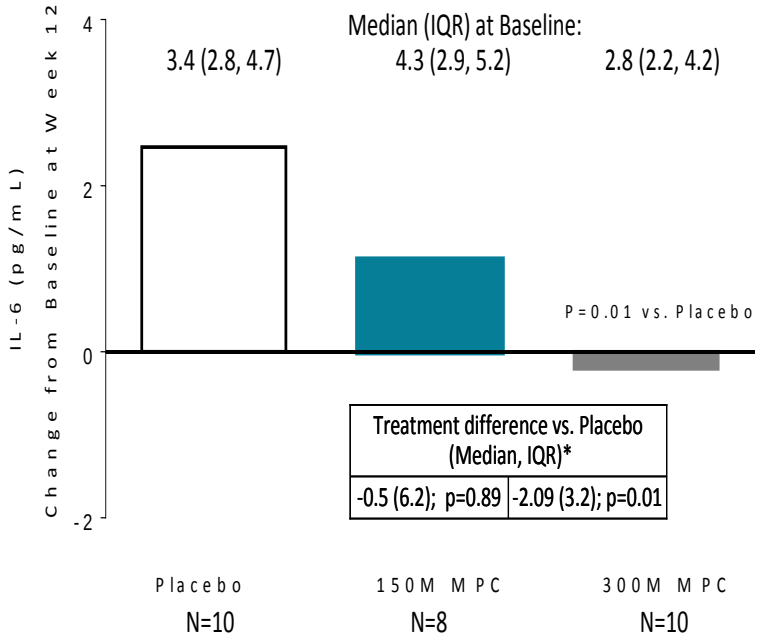
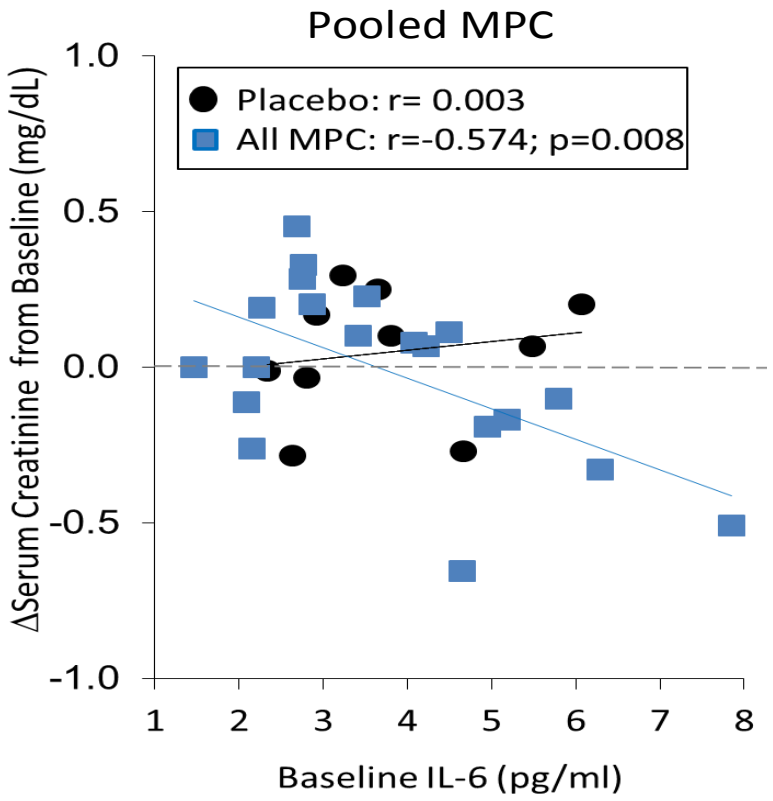
D MPC-300-IV: Diabetic Kidney Disease Phase 2 Results – Treatment Related Effects on the Inflammatory Marker IL-6 and Therapeutic Response in Patients with High Baseline IL-6 Levels



*Treatment difference estimated using Hodges-Lehmann estimator and Moses method. P-value obtained from Cochran-Mantel-Haenszel test in nonparametric ANCOVA model using treatment as a factor adjusting for eGFR randomization strata and baseline value



- Baseline eGFR>30 ml/min/1.73 m^2 and high IL-6 levels suggest two biomarkers that may predict efficacy with and response to MPC treatment in patients with pre-fibrotic renal state and aberrant pro-inflammatory milieu
- Reduction in IL-6 levels suggests that the mechanism of action of MPCs may be via reduction of pro-inflammatory monocyte cytokines in the diabetic kidney

Upcoming Milestones by Calendar Year

Product Candidate	Programs	Anticipated Milestones	'15 Q4	2016 Q1	2016 Q2	2016 Q3	2016 Q4	2017 Q1	2017 Q2	2017 Q3	2017 Q4	2018 H1	2018 H2
MSC-100-IV / Temcell® HS Inj.	Acute Graft Versus Host Disease	Temcell® HS Inj. Launch in Japan											
		US Pediatric Phase 3 top line Results											
		Interim analysis to support BLA filing											
MPC-150-IM	Class II and III Heart Failure	Phase 3 1st Interim Analysis (IA) results											
		Phase 3 2nd IA (futility & efficacy analysis)											
		Phase 3 Program complete											
	Class IV Heart Failure Requiring LVAD	Phase 2b trial results											
MPC-06-ID	Chronic Low Back Pain Due to Degenerative Disc Disease	Phase 3 enrollment complete Trial 1											
		Phase 3 IA results Trial 1											
		Phase 3 Program complete											
MPC-300-IV	Rheumatoid Arthritis (Biologic Refractory)	6 month data first cohort											
		Results second cohort											

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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