DYSTROGEN THERAPEUTICS

Clinical Stage Chimeric Cell Therapy Company

Chicago, Illinois

April 2023

Chimeric Cell Therapy Demonstrated to be Safe and Effective with Dependable Manufacturing and Cell Delivery Process

- Excellent long-term safety and tolerability profile in all patients (N=6) to date
- Consistent functional outcome improvements in all evaluated patients
- Reliable and reproducible chimeric cell manufacturing process with 100% rate of
- manufacturing completion
 - 100% therapy administration rate

Dystrogen Therapeutics - Clinical Stage Chimeric Cell Therapeutics Company



Novel chimeric cell therapy platform for musculoskeletal, neurodegenerative and hematopoietic indications



Lead program, DT-DEC01, in clinical trial (6 patients have been dosed to date; plan for additional 4); no AE, no SAE; efficacy demonstrated at 6 months and 12 months



Discovery stage for additional indications with opportunity to broaden across a variety of disorders such as ALS, muscular dystrophies, sarcopenia/"anti-aging", post-radiation hematopoietic reconstitution



Distinctive advantages of DT-DEC01 over competitive approaches for muscular dystrophy:

- Universal therapy for <u>all</u> Duchenne's genetic mutations
- O Does not require immunosuppression, does not cause immune reaction
- Excellent safety profile <u>no</u> AE or SAE noted in clinical trial to date, none in pre-clinical
- No genetic manipulation, no viral delivery required
- Novel chimeric cell approach <u>no</u> other companies developing
- Technology licensed from the University of Illinois



Robust IP estate with patents that expire in 2036



Experienced Company Founders



Prof. Maria Siemionow MD, PhD

FOUNDER CHIEF MEDICAL OFFICER

- Professor of Orthopaedics, Director of Microsurgery Research, the University of Illinois in Chicago
- Lead surgeon of team that performed the world's first near-total face transplantation, December 2008
- Over 300 scientific publications in the peer reviewed scientific journals

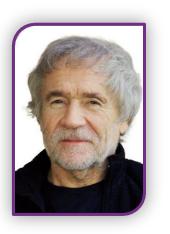


Dr. Kris Siemionow MD, PhD

CO-FOUNDER CHIEF EXECUTIVE OFFICER

- Past Chief of Spine Surgery and Associate Professor of Orthopaedics and Neurosurgery at the University of Illinois in Chicago
- Past Co-founder Holosurgical (Al for neurosurgery: acquired
- Past Co-founder Inteneural Networks (Brain MRI analytics); acquired
- Past Chief Medical Officer NASDAQ medtech
- Over 100 scientific publications





Prof. Paul Lewicki PhD **CO-FOUNDER DIRECTOR**

- Founder and CEO of StatSoft (acquired by Dell in 2014)
- **Big Data Pioneer**
- Entrepreneur, large multinational company CEO (StatSoft had 30 overseas offices in all major markets and over 1 M B2B users across various industries)

StatSoft®

STATISTICA





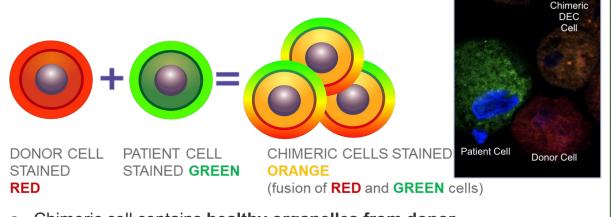
Chimeric Cell Therapy – A Novel Approach



Prof. Maria Siemionow Inventor

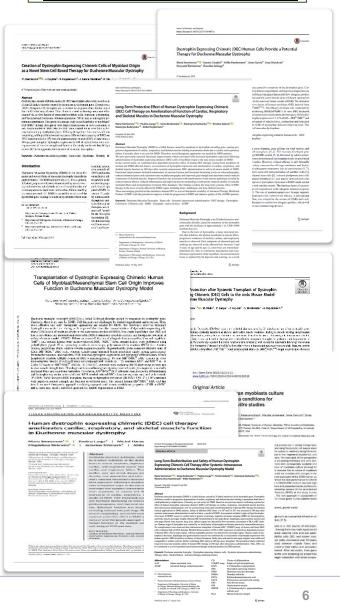
- Born out of transplantation research to identify ways to evade host rejection
- Approach for DMD catalyzed through Armed Forces Institute of Regenerative Medicine (AFIRM) collaboration
- 10+ years of scientific studies
- Patented technology by prof.
 Maria Siemionow (global protection)

 CHIMERIC CELLS are created by <u>fusing</u> the patient's diseased cells with healthy cells from a donor. Dystrogen invented this approach

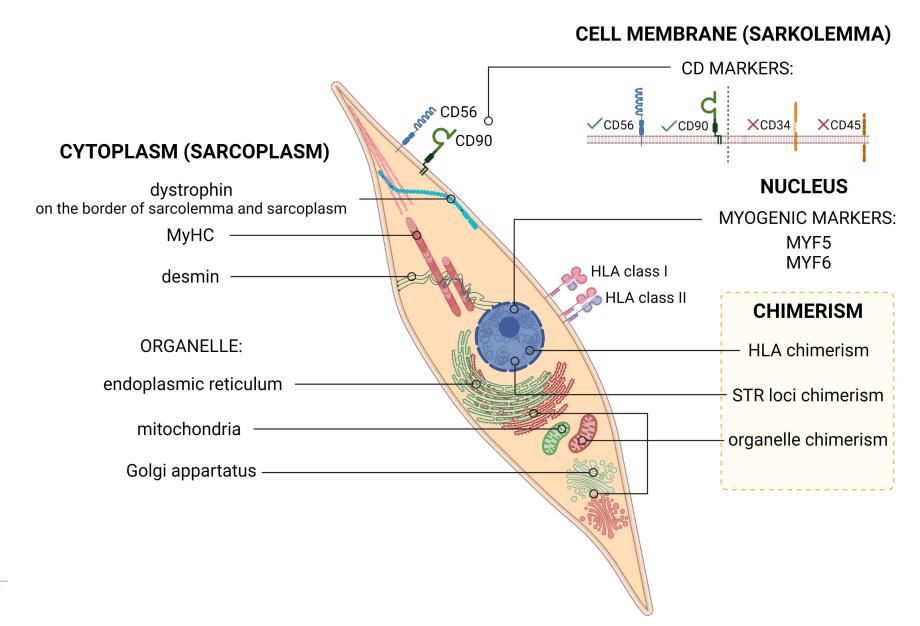


- Chimeric cell contains healthy organelles from donor
- Chimeric cells restore function and can prolong longevity
- "Tricks" the immune system into accepting the cell (Trojan horse approach), as chimeric cells appear to the recipient as self
- Chimeric cells have regenerative and immunomodulatory properties
- Chimeric cells do not create an immune response (clinically validated)
- A novel approach to mitigate the side effects of immunosuppression and conditioning regimens as well as to enhance cell engraftment
- No cancer demonstrated in small and large animal model

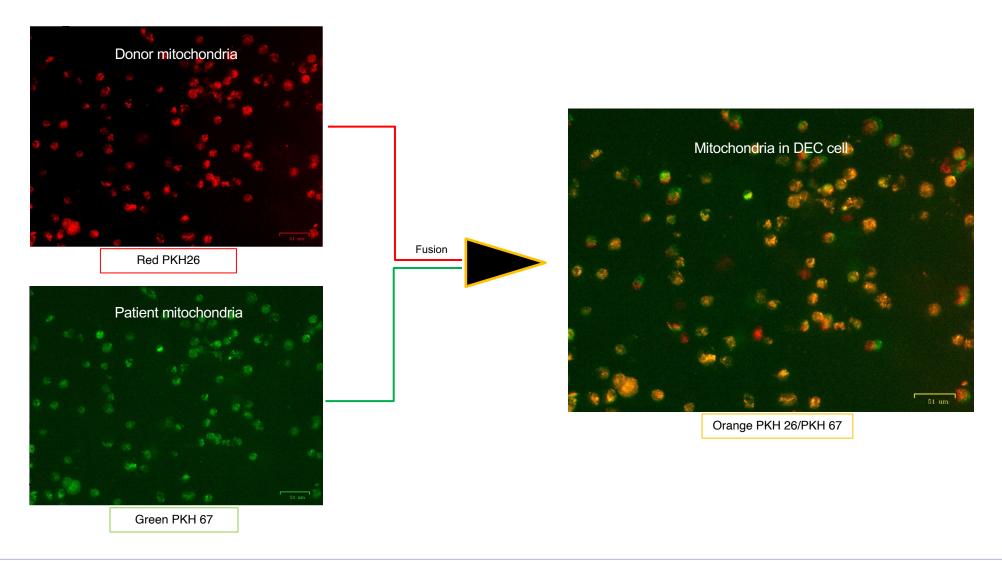
11 Peer Reviewed Publications



Dystrophin Expressing Chimeric (DEC) Cell

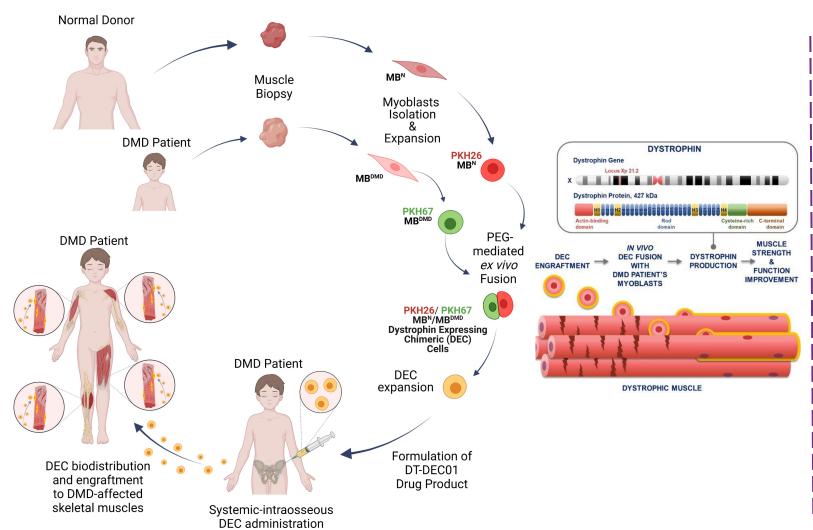


DT-DEC01 Cells Contain Healthy Mitochondria and other Organelles from the Donor





Mechanism of Action Based on Full Length Dystrophin Gene Delivery



Significant Advantages











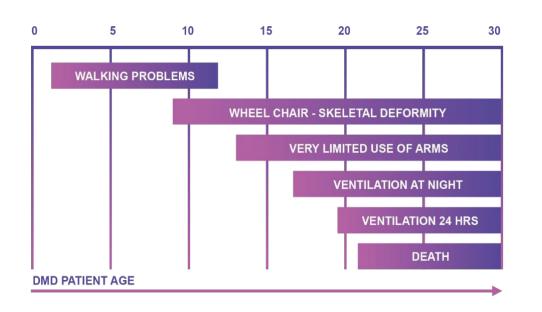


Duchenne Muscular Dystrophy: A Disease Without A Cure

Disease Overview

- Orphan disease with devastating outcomes for the patient and their families alike
- Most common lethal X-chromosome linked progressive muscle-wasting disorder
- Over 20,000 boys are living with the disease in the US and over 300,000 worldwide
- Caused by a variety of dystrophin gene mutations
- No cure currently exists
- Prior and current technologies have had safety, efficacy, and/or patient population limitations
- With no cure or viable remedies available, the massive \$4+ billion DMD market is prime for disruption

Patient Physical Degeneration





Dystrogen Therapeutics Duchenne Muscular Dystrophy Patients Treated with DT-DEC01

Daille at	A		A selection of Glades		
Patient Identifier	Age at Dosing	DT-DEC01 Cohort	Ambulatory Status and Genetic Profile	Follow Up Duration	
02B	7	Low Dose (1M-2M DEC cells per kg)	Ambulatory (Deletion Exon 3-12)	18 months	
03B	16	Low Dose (1M-2M DEC cells per kg)	Non-Ambulatory (Deletion Exon 48-50)	14 months	
04B	6	Low Dose (1M-2M DEC cells per kg)	Ambulatory* (Nonsense mutation in gene DMDc.9249G>A(p.TRP3083Ter)	13 months	
05B	12	Medium Dose (2M- 4M DEC cells per kg)	Non-Ambulatory (Deletion Exon 44)	10 months	
06B	6	Medium Dose (2M- 4M DEC cells per kg)	Ambulatory (Deletion Exon 44)	4 months	
01B	7	Medium Dose (2M- 4M DEC cells per kg)	Ambulatory (Deletion of exons 20-29)	3 month	



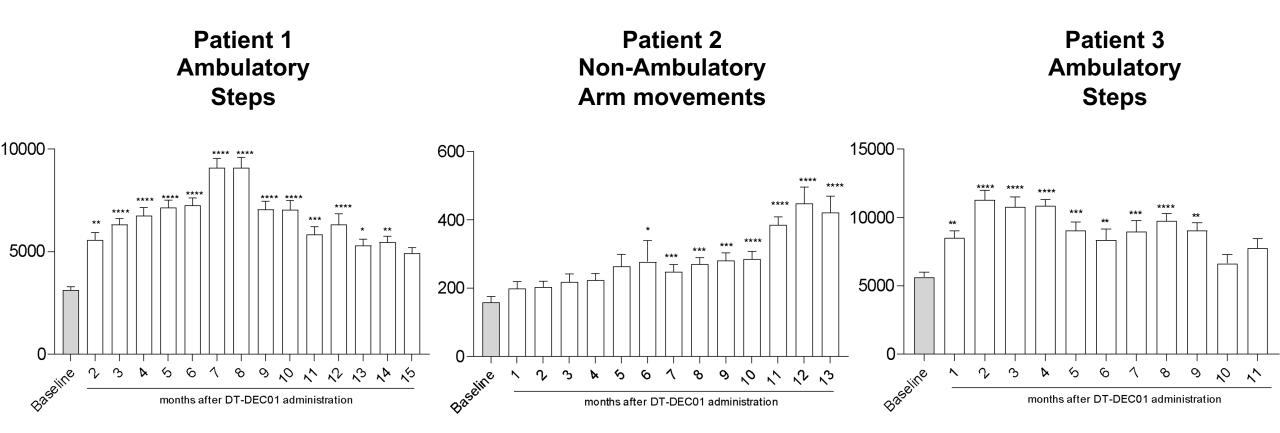
Clinical Trial Summary to Date (N=6)

- Results continue to reinforce safety and tolerability profile of DT-DEC01 up to 14 months (eg. no AE, no SAE; negative anti-donor antibodies test up to 12 months)
- Demonstrated consistent functional outcome improvements in low dose cohort at 3 months, 6 months (n=4), and 12 months (N=2) after DT-DEC01 administration:
 - Electromyography (EMG) (objective test, not effort dependent)
 - Strength and fatigue resistance
 - Mobility and Function
 - Improvements on objective tests (EMG) correlate with improvements in strength (ex. grip strength, shoulder abduction) and functional tests (ex. 6MWT 6 minute walking test,
 NSAA North Star Ambulatory Assessment, PUL Performance of Upper Limb)
 - Functional improvements in clinical trial correlate with those reported in pre-clinical studies
 - Demonstrated DT-DEC01 to be a universal therapy for all Duchenne genetic mutations (5 different mutations in current trial)



Garmin pedometer, steps per day (patient 2, daily arm movement)

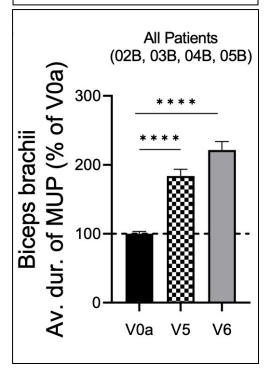
Monthly averages with standard error





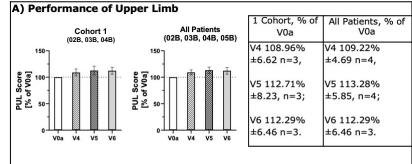
Selected Results of Upper Extremity Strength (Grip), EMG (Biceps), and Functional Test (Performance of Upper Limb) at 6 Months Demonstrate both Clinically and Statistically Significant Improvements in <u>Ambulatory and Non-Ambulatory</u> patients with DMD

Biceps Electromyography

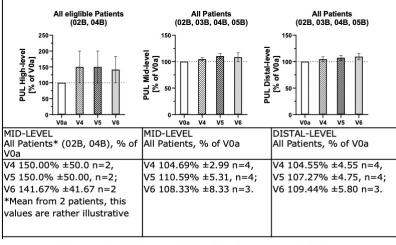


Changes in biceps motor unit potential versus V0a. Biceps brachii (at 3-months visit: 84% ± 9.6% above baseline value ; at 6-months visit: 122% ± 12.2% above baseline value) All values: mean ± SEM

Performance of Upper Limb



B) Performance of Upper Limb – scoring in three domains



Changes in PUL versus V0a. All values: mean ± SEM.

Grip Strength

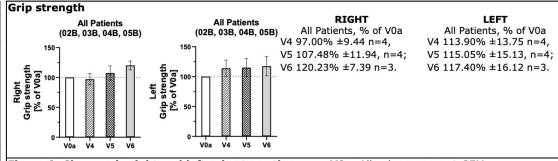
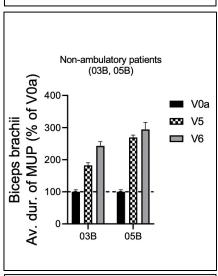


Figure 9. Changes in right and left grip strength versus V0a. All values: mean \pm SEM.

Select Results of Upper Extremity Strength (Grip), EMG (Biceps), and Functional Test (Performance of Upper Limb) at 6 Months Demonstrate both Clinically and Statistically Significant Improvements Non-Ambulatory patients with DMD

Biceps Electromyography

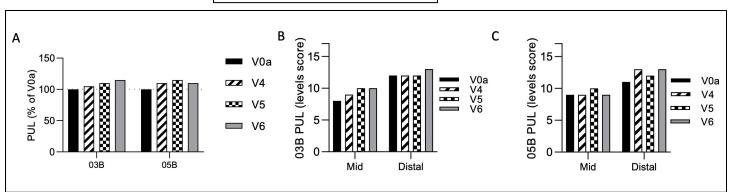


03B biceps brachii 82% above baseline (V0a) at 3 month (V5) visit 143% above baseline (V0a) at 6 month (V6) visit

05B biceps brachii

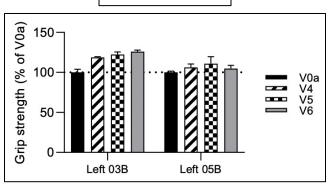
170% above baseline (V0a) at 3 - month (V5) visit 194% above baseline (V0a) at 6 - month (V6) visit

Performance of Upper Limb



The assessments of PUL in **non-ambulatory** patients: (**A**) comparison of changes in PUL total score when compared to baseline (V0a) values shows that the patient 03B improves continuously on consecutive visits (V0a: 100%, V4: 105%, V5: 110%, V6: 115%), while the patient 05B reached his maximum score on 3-months visit and then plateaued (V0a: 100%, V4: 110%, V5: 115%, V6: 110%). (**B**) PUL level scores for patient 03B – Mid and Distal demonstrate continuous improvement, (**C**) PUL level scores for patient 03B – Mid improve then plateaued and Distal demonstrate continuous improvement.

Grip Strength



Assessments of left hand grip strength in nonambulatory patients demonstrates improvement over baseline (V0a) at all time points



Dystrogen Therapeutics: Pioneer of Chimeric Cell Therapy

Chimeric cell therapy represents a completely unique and novel modality

Novel modality for the treatment of a broad spectrum of genetic disorders Six patients dosed with compelling initial results; enrolment ongoing

Orphan Drug and Rare Pediatric Disease Designations

Global DMD drug market opportunity expected to reach ~\$4B by 2023⁽¹⁾

Robust IP protection through 2036



- Initially targeting
 Duchenne muscular
 dystrophy, a rare,
 debilitating disease with
 no cure
- Also targeting neurodegenerative diseases, sarcopenia, and graft-vs-host disease
- ✓ Broad potential applicability to a variety of other genetic disorders



- ✓ No safety issues and demonstrated functional improvement 6 months from dosing
- ✓ Patients demonstrating improvements in quality of motion, EMG, and other functional measures
- ✓ Additional patients identified and to be dosed



- Orphan and Rare
 Pediatric designation
 granted in the US for
 DMD
- ✓ Priority Review Voucher eligible – PRVs have sold >\$100mm



- ✓ DMD is an orphan indication with high unmet need
- ✓ Prior and current therapeutics under development have had safety and efficacy issues
- Chimeric cell therapy has numerous advantages over existing therapeutics under development

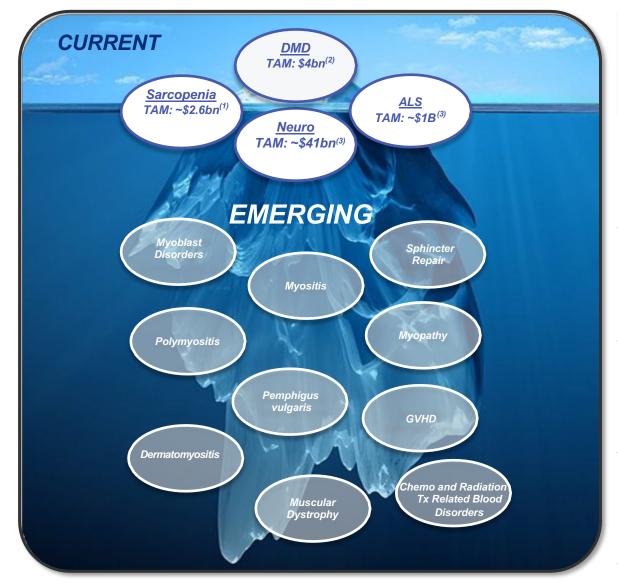


- ✓ Protected by multiple layers of granted and pending patents
- ✓ Provides extensive IP protection around formulation and methods of use
- Substantial potential for patent term extension



Platform and Technology

Dystrogen Therapeutics Pipeline



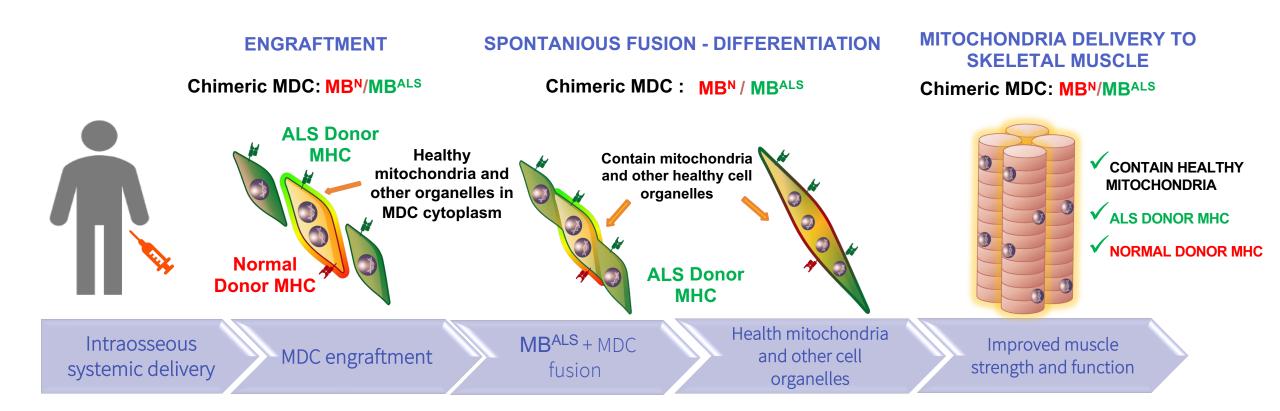
Program	Indications	Phase	
DT-DEC01	DMD	Phase 1	
DT-200	ALS	Preclinical	
DT-201	Sarcopenia and muscle "anti-aging"	Discovery	
DT-202	Neurodegenerative	Discovery	



⁾ Allied Market Research: "Sarcopenia Treatment Market" (2021).

Grand View Research: "Duchenne Muscular Dystrophy (DMD) Drugs Market Size, Share & Trends Analysis Report By Therapeutic Approach (Mutation Suppression, Exon Skipping, Steroid Therapy) And Segment Forecasts, 2018 – 2023" (2018). Fortune Business Insights: "Neurodegenerative Diseases Drugs Market" (2019).

Mitochondria Delivering Chimeric Cells (MDC) - Mechanism of Action in Amyotrophic Lateral Sclerosis (ALS)



Muscle metabolism and mitochondrial activity have been shown to be affected in ALS. Evidence of toxicity in skeletal muscle tissue has been demonstrated, including metabolic dysfunctions, impaired proteostasis, and deficits in muscle regeneration and RNA metabolism. The role of muscle as a secretory organ, and the negative effects on the skeletal muscle secretome has been demonstrated, including the increase in secretion of toxic factors or decrease in essential factors that have consequences for neuronal function and survival. Furthermore, ALS muscle vesicles are shown to be toxic to motor neurons, which establishes the skeletal muscle as a potential source of vesicle-mediated toxicity in ALS. Chimeric myoblasts have the potential to carry healthy mitochondria, ribosome vesicles, rough endoplasmic reticulum, Golgi apparatus, cytoskeleton, smooth endoplasmic reticulum, vacuole, cytosol, lysosome, centriole originating from the healthy donor myoblast



Pharmacol.2021;178:1279–1297

^{3.} Biochimica et Biophysica Acta 1802 (2010) 45–51

Competitive Landscape

Dystrogen Therapeutics: A Modality of its Own

Phase 3

Phase 1

Preclinical





FibroGen

Competitive Advantages of Chimeric Cell Therapy for DMD

Features	DYSTRCGEN DEC Therapy	Viral Gene Therapy	Steroids	ASOs	Stem Cell
Targets 100% DMD patients	✓	×	✓	×	✓
Functional Outcomes	✓	?	×	?	?
Dystrophin Expression	✓	✓	×	×	?
No observed adverse effects	✓	×	×	×	~
No gene manipulation	~	×	✓	~	✓
No need for immunosuppression	✓	✓	×	~	×



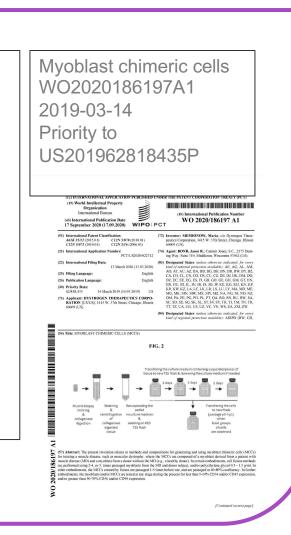
Intellectual Property – Cellular Therapy Platform, Granted Patents

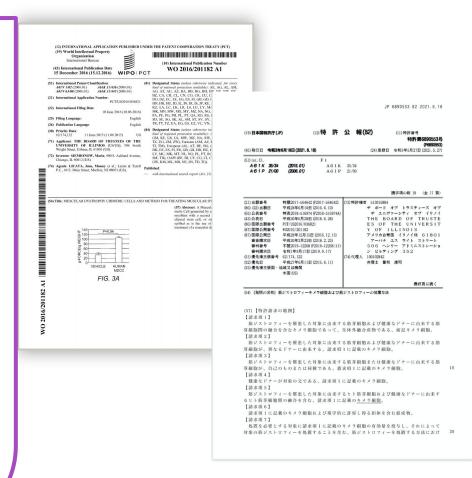
- US Patent 11,147,840
- Japanese Patent granted No. 2017-564642
- Canadian Patent granted No. 2988137
- Australian Patent granted No. 2016274797
- EU Patent Application No. 16808341.8 Notice of Allowance received
- PCT Application
- Filing date: 11 June 2015

Title: Muscular Dystrophy Chimeric Cells and Method for Treating Muscular Dystrophies

Published on: December 15, 2016 as WO/2016/201182

- Proprietary Fusion Technology Trade Secret
- Basic Science Pre-clinical Data
- Exclusive Worldwide License From University of Illinois, Chicago, USA





Summary -the US MDCC patent claims the cell made by an ex-vivo fusion of the first myoblast and the second myoblast, mesenchymal stem cell, or stromal cell. This is a "product-by-process" claim.



Achievements and Upcoming Milestones

ltem	Completed	Next 6-12 Months
ATMP Classification – Tissue Engineering Product		
Orphan Designation FDA	✓	
Rare Pediatric Disease Designation FDA	✓	
FDA PRE - IND Meeting	✓	
Launched POC Trial		
First Patient Dosed		
Full Data Set From First Patient		
Low and Medium Dose Cohort Fully Dosed	✓	
Initiate Phase 1/2		



Supportive Pre-clinical Data

Rationale for Chimeric Cell Therapy

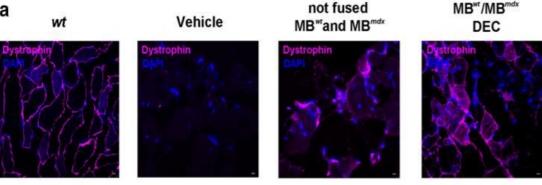
The rationale for our therapy platform is based on the principle of chimerism, a well-accepted approach for tolerance induction and prevention of rejection, which is well established in transplantation literature. Based on our 20 years of experience with the application of chimerism-based strategies for tolerance induction in bone marrow and vascularized composite allograft transplantation we have addressed the limitations of current cell therapies, by introducing chimeric cells as a novel therapeutic approach for DMD. Hence, we applied the concept of ex-vivo cell fusion technology to create human chimeric cell lines of myoblast origin as a novel, healthy myoblast delivery platform, presenting the allogeneic donor's cells as the patients' own cells in order to minimize the immune response and eliminate the need for immunosuppression. The proof-of-concept of chimeric cell therapy efficacy in DMD was demonstrated in preclinical studies in both mdx and mdx/scid mouse models of DMD, where tolerogenic and immunomodulatory properties of chimeric cell therapy and efficacy of chimeric cell engraftment were confirmed by histology and immunohistochemistry as well as significant increase of dystrophin expression correlating with long-term (180 days) improvement of function in the most DMD affected target organs - cardiac, respiratory and skeletal muscles. Based on these encouraging preclinical outcomes, we have further applied the chimeric cell concept to clinical applications as a unique platform of chimerism delivery and demonstrated excellent long-term safety and tolerability profile as well as consistent functional outcome improvements in 6 patients with DMD



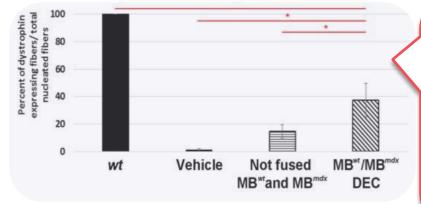
Demonstrated Dystrophin Expression While Reducing Fibrosis

Significant increase of Dystrophin expression at 30 days after DEC transplant to the gastrocnemius muscle (GM) of mdx mice

Tangible Improvements on a Cellular Level At 90 Days



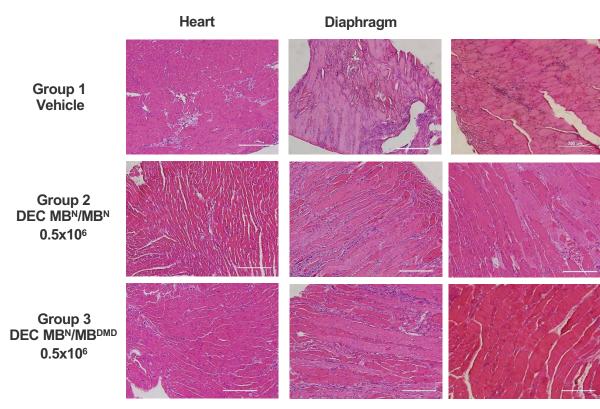
Immunofluorescence images of dystrophin expression in GM of: wild type (wt) mice (left, positive control); Dystrophin-deficient mdx mice injected with vehicle; not fused MBwt with MBmdx; MBwt/MBmdx DEC



Siemionow et al., Stem Cell Rev and Rep (2018)

Biological marker: 37.3% increase in Dystrophin level at 30 days

After administration to gastrocnemius muscle in DEC injected mdx host compared to vehicle and not-fused MBwt and MBmdx controls; (n=6, mean±SD. 5 ROI/3 sections/6 animal/group, (One-way ANOVA)



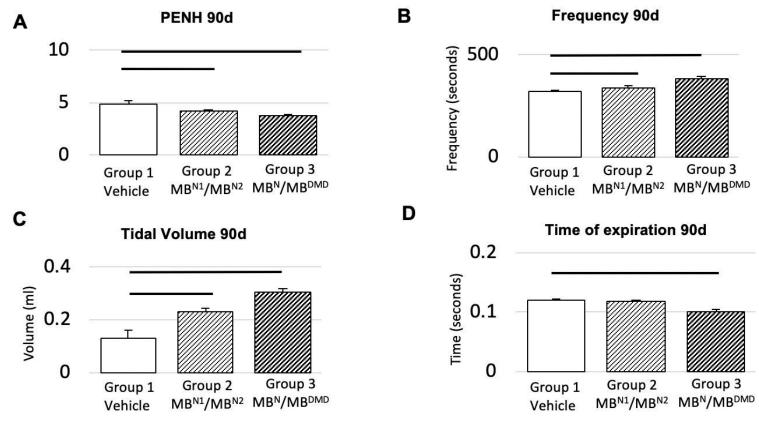
Hematoxylin-eosin (H&E) stained cross-sections of heart, diaphragm and gastrocnemius muscle of mdx/scid mice confirming reduced fibrosis at 90 days after DEC transplant when compared to vehicle control

Magnification 10X, scale bar 200µm (Olympus, Japan)



b

Improved Respiratory Function after Systemic DEC Therapy in mdx/scid mice on Plethysmography

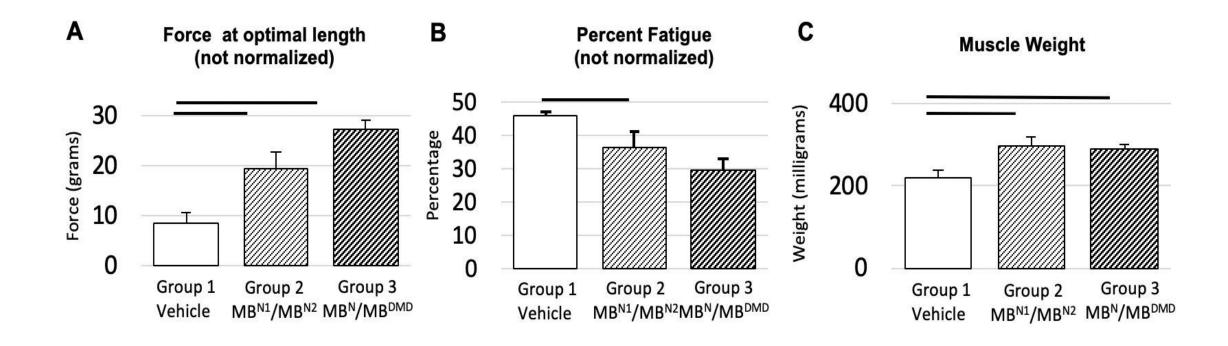


American Society for Reconstructive Microsurgery, Ft. Lauderdale, January 10-14, 2020

Improved respiratory function after systemic-intraosseous transplant of DEC cells confirmed by whole-body plethysmography;
One-Way Anova with post-hoc Tukey's test, p<0.05



Improved Muscle Force Function after Systemic DEC Therapy in mdx/scid mice



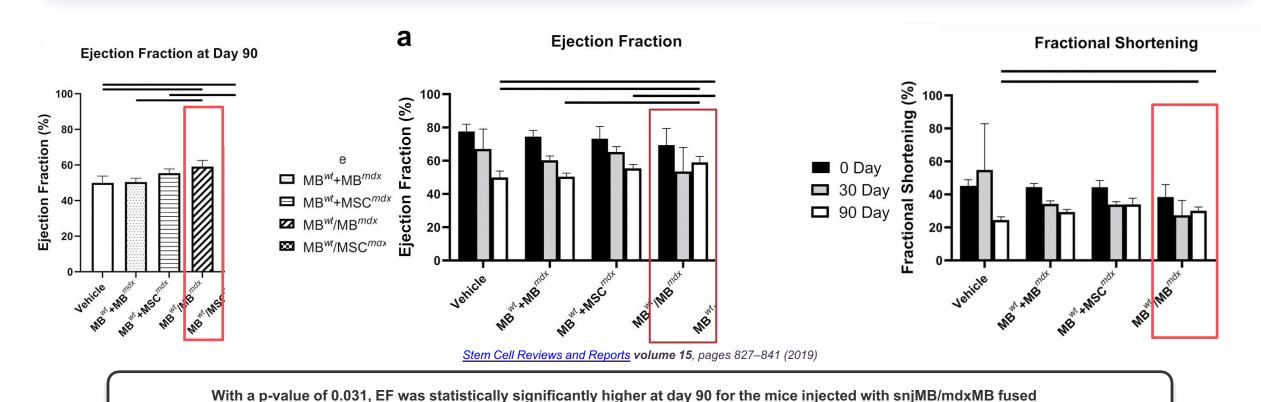
Reduced skeletal muscle disease after systemic-intraosseous transplant of DEC cells confirmed by ex vivo Aurora Muscle Force test;

One-Way Anova with post-hoc Tukey's test, p<0.05



Improved Cardiac Outcomes After Systemic DEC Therapy in mdx/scid mice

Systemic DEC administration demonstrated statistically significant increase in cardiac ejection fraction at day 90 as confirmed by echocardiography

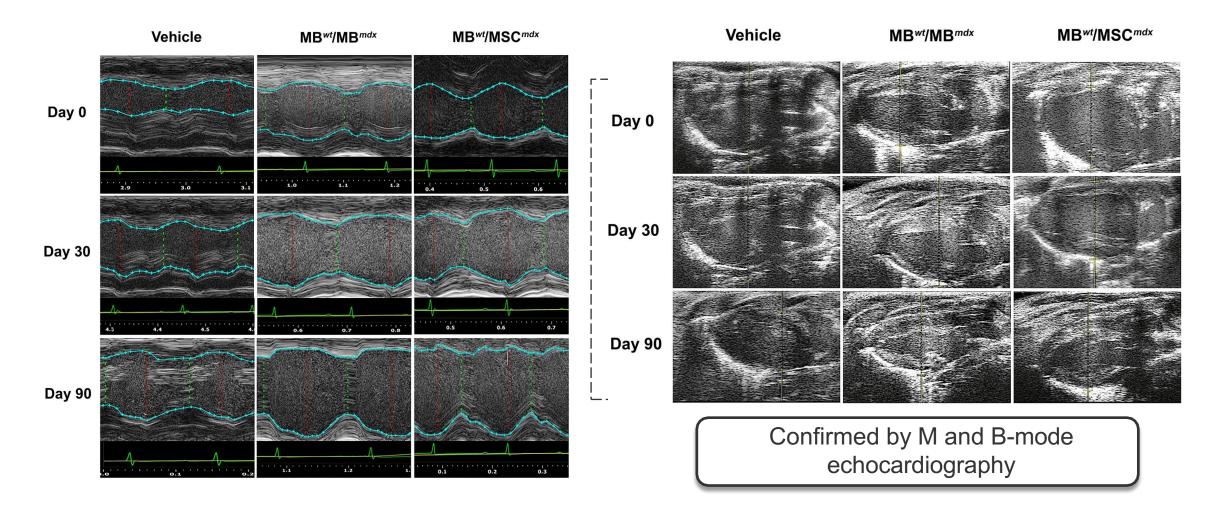


cells at an 0.05 compared to EF at day 0.



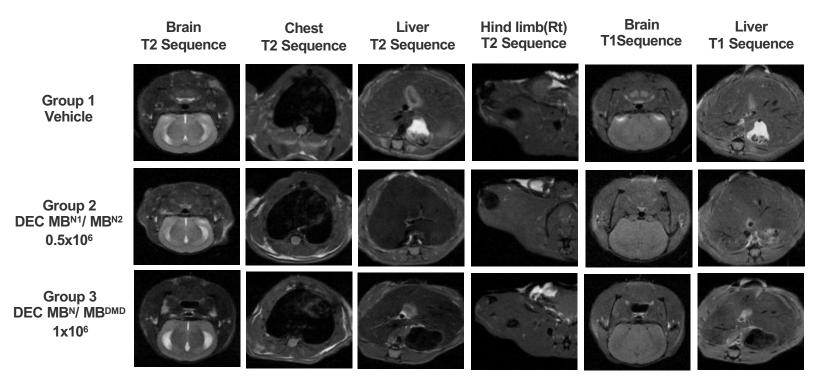
THERAPEUTICS

Reduced Cardiac Disease at 90 Days after Systemic DEC Administration to the mdx mice





Confirmation of DEC Safety at 90 days after Systemic Administration to the mdx/scid mice



Assessment of organs of the highest tumor risk rate and the right hind limb revealed lack of tumor or tumor-like structure formation confirming safety of DEC cell lines after transplant.

MRI evaluation was made using a standard T2 – weighted protocol and T1 – weighted scanning for brain and liver 31cm bore size 9.4 Tesla Agilent MRI System



Disclaimer

This document (the "Presentation") contains information related to Dystrogen Therapeutics Corp. ("DT" or the "Company"). The information contained herein is not comprehensive and is intended to provide only a basic overview about the Company. This Presentation does not constitute information about any securities or shares, the terms of purchase of any securities or shares, and it should not be treated as part of any offer to sell any securities, to purchase any securities or recommendation to conclude any transaction, in particular, with respect to securities of DT. This Presentation does not purport to contain all the information necessary to consider any investment in the Company and it is not intended to be sufficient to support any investment decision. In all cases, the recipients of this Presentation should conduct their own investigation and analysis of the Company and DT's board members do not assume any liability for correctness of any of the information contained herein, nor do they assume any liability for potential damages resulting from any incorrectness or incompleteness of any such information. Dystrogen Therapeutics and DT's board members do not make any representation or warranty, expressed or implied, as to the accuracy, completeness or reliability of this Presentation, and shall bear no liability for any errors contained in, or omissions from, this Presentation.

In particular, while this Presentation may contain certain statements, estimates, results, and projections regarding DT, no assurance is given that such statements, estimates, results or projections are accurate, or will be achieved. Such statements and projections may not be relied upon by the recipient hereof, or any other third party. In furnishing the Presentation, DT reserves the right to amend or replace this Presentation at any time; however, DT shall be under no obligation to update, amend or correct the information contained herein, or to provide any additional information. Nothing contained herein is, or may be relied upon as a promise or representation as to the future performance of Dystrogen Therapeutics Corp. The Company has certain obligation and liabilities to the University of Illinois, Chicago under the terms of a licensing agreement.

This Presentation is addressed to the recipient only and is not available for general distribution. Any potential offer regarding investment in the Company shall be made separately in accordance with provisions of applicable law.

This Presentation includes information which is non-public, confidential and proprietary in nature, and by its acceptance, the recipient acknowledges and agrees that none of this information shall be used in a manner inconsistent with its confidential nature or be disclosed to any third party, and shall not be reproduced, disseminated, quoted at any time, in any manner or for any purpose without prior written consent of DT. The contents of this Presentation should not be construed as investment, legal or tax advice, and the recipient of the Presentation is urged to seek independent investment, legal and tax advice prior to any further consideration of any interest in DT.

