Society for Muscle Biology

Frontiers in Myogenesis Meeting

"Skeletal muscle: development, regeneration and disease"

Organizers: Alessandra Sacco, Fabio Rossi, Peter Zammit

Costa Rica Marriott Hotel Hacienda Belen, San José, Costa Rica

September 23-28th 2019

Meeting Registration: Area de Foto Marriott Plenary and Poster Sessions: JVC

Breakfast: Hacienda Kitchen Lunch and Dinner: Porte Cochere Coffee Breaks: JVC Foyer

Bold italics: Program Abstract # (please see full abstracts in Abstracts Book online)

Poster session assignments are listed at the end of the Program

Monday, September 23

2:00pm – 6:00pm	Meeting Registration Poster Session 1 set-up
3:00pm	Housing Check-in
6:00pm – 7:30pm	Dinner
7:30pm – 7:40pm	Welcome Introduction – Conference Organizers **Alessandra Sacco, Fabio Rossi, Peter Zammit**
7:40pm – 8:40pm ***1***	***** THE EMBO LECTURE***** **Pura Muñoz-Cánoves** – Pompeu Fabra University (UPF), Barcelona, Spain *"Muscle stem cell aging and rejuvenating strategies"*
8:40pm – 10:00pm	Opening Reception

Tuesday, September 24

7:00am – 8:30am		Breakfast
8:30am – 10:15am		**Session 1 – Mechanisms of skeletal muscle development** ***Sponsored by International Society of Differentiation*** **Chair: Krzystof Jagla** – INSERM, University of Clermont, Clermont-Ferrande, France **Co-Chair: Jordan Blondelle** – University of California, San Diego, USA
8:30am – 9:00am	***2***	**Peter Currie** – Monash University, Melbourne, Australia *"Defining the in vivo dynamics of muscle stem and progenitor cell action during growth and injury"*
9:00am – 9:30am	***3***	**Gabrielle Kardon** – University of Utah, Salt Lake City, USA *"Inspired by the diaphragm: development of the diaphragm and congenital diaphragmatic hernias"*
9:30am – 9:45am	***4***	**Amelia Aranega** – University of Jaén, Jaén, Spain *"Stage-specific effects of Pitx2 in somite-derived muscle development"*
9:45am – 10:00am	***5***	**Matthieu Dos Santos** – INSERM, Institut Cochin, Paris, France *"Genetic control of skeletal muscle fiber type"*
10:00am – 10:15am	***6***	**Duc Dong** – Sanford Burnham Prebys Medical Discovery Institute, La Jolla, USA *"Mechanisms driving in vivo lineage conversion of vertebrate skeletal muscle into early endoderm-like cells"*
10:15am – 10:45am		Coffee Break ***Sponsored by International Society of Differentiation***
10:45am – 12:15pm		**Session 2 – Mechanisms of myoblast fusion and nuclear positioning** **Chair: Peter Zammit** – King's College London, London, United Kingdom **Co-Chair: Huascar Pedro Ortuste Quiroga** – Toyohashi Sozo University, Toyohashi, Japan

10:45am – 11:15am ***7***	**Elizabeth Chen** – UT Southwestern Medical Center, Dallas, USA *"Dynamin captures and bundles actin filaments to drive invasive membrane protrusions in myoblast fusion"*
11:15am – 11:30am ***8***	**William Roman** – University of Lisbon, Lisbon, Portugal *"Mechanism of myofiber self-repair facing minor injuries"*
11:30am – 11:45am ***9***	**Michael Petrany** – Cincinnati Children's Hospital Medical Center, Cincinnati, USA *"Divergent cell-specific consequences of myomaker expression in dystrophic skeletal muscle"*
11:45am – 12:15pm ***10***	**Edgar Gomes** – University of Lisbon, Lisbon, Portugal *"Nuclear positioning during skeletal muscle development"*
12:15pm – 1:45pm	**Lunch and Meet the Speakers**
1:45pm – 5:15pm	**Session 3 – Muscle stem cell regulation** **Chair: So-Ichiro Fukada** – Osaka University, Osaka, Japan **Co-Chair: Marine Theret –** University of British Columbia, Vancouver, Canada
1:45pm – 2:15pm ***11***	**Frédéric Relaix** – INSERM, Paris, France *"Regulation of muscle stem cell quiescence and activation"*
2:15pm – 2:45pm ***12***	**Tom Cheung** – The Hong Kong University of Science and Technology, Hong Kong, China *"Post-transcriptional regulation of quiescence exit"*
2:45pm – 3:00pm ***13***	**Ryo Fujita –** McGill University, Montreal, Canada *"The adhesion G-protein coupled receptor GPR116 is required for muscle stem cell quiescence and self-renewal"*
3:00pm – 3:15pm	**Karl Lenhard Rudolph** – Leibniz Institute on Aging, Jena, Germany *"Increased retinol metabolism in aging niche cells compromises muscle stem cell function"*
3:15pm – 3:30pm ***105***	**Akiyoshi Uezumi** – Tokyo Metropolitan Institute of Gerontology, Tokyo, Japan

		"Retinoic acid signaling regulates fate of mesenchymal progenitors during muscle regeneration and pathogenesis"
3:30pm – 3:45pm	***15***	**Yu Xin (Will) Wang** – Stanford University, Stanford, USA *"Spatial mapping of muscle regeneration at the single cell level using CODEX"*
3:45pm – 4:15pm		Coffee Break
4:15pm – 4:45pm	***16***	**Colin Crist** – McGill University, Montreal, Canada *"Selective mRNA Translation Regulates Satellite Cell Activity"*
4:45pm – 5:00pm	***17***	**Hugo Olguin –** Pontifical Catholic University of Chile, Santiago, Chile *"Looking under the hood of satellite cell fate control: mechanisms underlying the interplay between ubiquitin ligase Nedd4 and deubiquitinase USP7 in muscle progenitors"*
5:00pm – 5:15pm	***18***	**Lucia Latella** – IRCCS Fondazione Santa Lucia, Rome, Italy *"Role of STAT3-mediated autophagy in driving muscle regeneration during aging"*
5:15pm – 5:30pm		**Poster Blitz** ***70*** **Anthony Patelunas** – *Single-cell analysis of mouse embryonic and fetal limb muscle populations* ***88*** **Abigail Leinroth** – *Single Cell and Reporter Analysis of Skeletal Muscle Interstitial Cells Identifies Unique Non-myogenic Mesenchymal Cell Populations* ***64*** **Cynthia McKee** – *Klotho influences myogenesis during postnatal growth and during muscle regeneration* ***75*** **Diego Jaime** – *The MuSK-BMP pathway is necessary for maintaining a sub-population of Type IIb muscle fibers* ***76*** **Jianming Liu** – *Control of myonuclear positioning by skeletal muscle CIP* ***78*** **Andrea De Micheli** – *Single-cell analysis of the muscle stem cell hierarchy identifies heterotypic communication signals involved in skeletal muscle regeneration*
6:00pm – 7:30pm		Dinner
7:30pm – 10:00pm		**Poster Session 1**
10:00pm		Poster Session 1 Tear down

Wednesday, September 25

7:00am – 8:30am		Breakfast Poster Session 2 Set-up
8:30am – 10:00am		**Session 4 – Signaling pathways in muscle stem cell fate decisions** **Chair: Atsushi Asakura** – University of Minnesota, Minneapolis, USA **Co-Chair: Andrea Ulloa-Fernandez** – Technological Institute of Costa Rica, Cartago, Costa Rica
8:30am – 9:00am	***20***	**Carmen Birchmeier** – Max Delbrueck Center for Molecular Medicine in the Helmholtz Association, Berlin, Germany *"Single-nucleus transcriptomics of the skeletal muscle reveals functional compartmentalization in syncytial cells and its disruption in a dystrophy model"*
9:00am – 9:30am	***21***	**Yusuke Ono** – Kumamoto University, Kumamoto, Japan *"Positional memory governs satellite cell function in adult muscles"*
9:30am – 9:45am	***22***	**Dawn Cornelison** – University of Missouri, Columbia, USA *"EphA7 promotes myogenic differentiation via cell-cell contact"*
9:45am – 10:00am	***23***	**Daniel Kopinke** – University of Florida, Gainesville, USA *"Ciliary Hedgehog signaling controls fatty fibrosis and muscle repair"*
10:00am – 10:30am		Coffee Break
10:30am – 12:00pm		**Session 5 – Epigenetic control of muscle stem cells** **Chair: Vittorio Sartorelli –** National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), Bethesda, USA **Co-Chair: Tapan Sharma** – University of Massachusetts Medical School, Worcester, USA
10:30am – 11:00am	***24***	**Jeff Dilworth** – Ottawa Hospital Research Institute, Ottawa, Canada *"Promoter-proximal stalling of RNA-Polymerase II is required for repopulation of the satellite cell niche after muscle injury"*

11:00am – 11:15am ***25***	**Chiara Mozzetta** – University La Sapienza and CNR, Rome, Italy *"H3K9 methylation controls Fibro-Adipogenic Progenitors identity and skeletal muscle repair"*
11:15am – 11:30am ***26***	**Aster Juan –** National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), Bethesda, USA *"The Polycomb group protein Ezh1 regulates skeletal muscle stem cell quiescence and regenerative potential"*
11:30am – 12:00pm ***27***	**Pier Lorenzo Puri** – Sanford Burnham Prebys Medical Discovery Institute, La Jolla, USA *"MYOD-directed re-wiring of 3D chromatin architecture during nuclear reprogramming toward skeletal myogenesis"*
12:00pm – 1:30pm	**Lunch** **Career Development Workshop** (Cabildo) – **Sign-up required** **"**An Introduction to K Awards: the Who, When, What, and How of Career Grants**" – Gabrielle Kardon**
1:30pm – 3:45pm	**Session 6 – Induced pluripotent stem cells to generate myogenic progenitors** **Chair: April Pyle –** University of California, Los Angeles, USA **Co-Chair: Congshan Sun** – Johns Hopkins School of Medicine, Baltimore, USA
1:30pm – 2:00pm ***28***	**Rita Perlingeiro** – University of Minnesota, Minneapolis, USA *"iPS cells: potential for cell therapy, disease modeling and drug discovery in muscular dystrophies"*
2:00pm – 2:30pm ***29***	**Olivier Pourquié** – Harvard Medical School, Cambridge, USA *"In vitro modeling of human muscle development and disease"*
2:30pm – 3:00pm ***30***	**Radbod Darabi** – University of Texas Health Science Center, Houston, USA *"Reporter hESCs for PAX7 and MYF5 provide valuable insights into myogenic differentiation of hPSCs as well as transcriptional regulation of skeletal myogenesis"*
3:00pm – 3:15pm ***31***	**Charles Emerson, Jr** – University of Massachusetts Medical School, Worcester, USA

		"iPSC-induced skeletal myoblast lineages for disease modeling and therapeutics"
3:15pm – 3:30pm	***32***	**Michael Hicks** – University of California, Los Angeles, USA *"Skeletal Muscle Niche Dynamics in Development and Disease"*
3:30pm – 3:45pm	***33***	**Sonia Albini** – Paris Diderot University, Paris, France *"Human Duchenne Muscular Dystrophy iPS-derived myotubes as an in vitro model for studying epigenetic alterations controlling the fibrotic response: role of epigenetic regulator SETDB1"*
3:45pm – 4:15pm		Coffee Break
4:15pm – 6:00pm		**Session 7 – Bioengineering approaches for skeletal muscle modeling** **Chair: Benjamin Cosgrove** – Cornell University, Ithaca, USA **Co-Chair: Carolina Centeno-Cerdas** – Technological Institute of Costa Rica, Cartago, Costa Rica
4:15pm – 4:45pm	***34***	**Francesco Saverio Tedesco** – University College London, London, UK *"Human iPS Cell-Derived Artificial Skeletal Muscles for Complex Disease Modeling of Muscular Dystrophies"*
4:45pm – 5:15pm	***35***	**Penney Gilbert** – University of Toronto, Toronto, Canada *"96-well human skeletal muscle microtissue platform for disease modeling and drug testing"*
5:15pm – 5:30pm	***36***	**Florian Bentzinger –** University of Sherbrooke, Sherbrooke, Canada *"In-vivo Transcriptomic Profiling of Systemic Aging using Encapsulated Skeletal Muscle Progenitors"*
5:30pm – 5:45pm	***37***	**Alexander Loiben** – Cornell University, Ithaca, USA *"Engineering combinatorial biomimetic environments to control muscle stem and progenitor cell regulatory phenotypes and to enhance muscle cell transplantation therapies"*
5:45pm – 6:00pm	***38***	**Niels Geijsen** – Hubrecht Institute, Utrecht, Netherlands *"Efficient, non-viral in vivo gene editing of skeletal muscle"*

6:00pm – 6:15pm	**Poster Blitz** ***109*** **Romeo Blanc** – *The aged inflammatory niche prevents stem cell contribution to muscle regeneration* ***115*** **Pirkka-Pekka Laurila** – *Sphingolipid depletion reverses age-associated muscle dysfunction and improves muscle regeneration* ***92*** **Jeremy Salas** – *Nedd4-1 deletion impairs mitochondrial mass and muscle fiber size upon injury and regeneration* ***99*** **Kodai Nakamura** – *Estrogen-ERbeta pathway controls muscle mass and regeneration in female mice* ***91*** **Marine Theret** – *Role of the TGFb-Activated Kinase 1 in muscle-resident fibro/adipogenic progenitors, a key modulator of the inflammatory environment* ***95*** **Clauda Abboud** – *Enhancing endogenous repair in muscular dystrophy through cellular reprogramming*
6:15pm – 7:30pm	Dinner
7:30pm – 10:00pm	**Poster Session 2**
10:00pm	Poster Session 2 Tear down

Thursday, September 26

7:00am – 8:30am		Breakfast Poster Session 3 Set up
7:00am – 2:30pm		**Free Time Activities**
12:00pm – 1:30pm		Lunch
3:00pm – 3:30pm		Coffee Break
3:30pm – 5:30pm		**Session 8 – Role of the microenvironment in skeletal muscle repair and disease** **Chair: Rachelle Crosbie –** University of California, Los Angeles, USA **Co-Chair: Margaret Hung** – Icahn School of Medicine at Mount Sinai, New York City, USA
3:30pm – 4:00pm	***39***	**Benedicte Chazaud** – Institut NeuroMyoGene, University Claude Bernard Lyon, INSERM, Lyon, France *"Recovery macrophages stimulate myogenic stem cell fusion during post-injury skeletal muscle regeneration"*
4:00pm – 4:30pm	***40***	**Clarissa Henry –** University of Maine, Orono, USA *"Roles for glycosylation in modulating ECM during neuromuscular development and homeostasis"*
4:30pm – 4:45pm	***41***	**Mafalda Loreti** – Sanford Burnham Prebys Medical Discovery Institute, La Jolla, USA *"The extracellular matrix protein Tenascin-C is required to maintain the muscle stem cell pool and to promote regenerative potential"*
4:45pm – 5:15pm	***42***	**David Goldhamer** – University of Connecticut Stem Cell Institute, Storrs, USA *"Therapeutic approaches to prevent FAP-directed heterotopic ossification in FOP"*
5:15pm – 5:30pm	***43***	**Nasim Kajabadi** – University of British Columbia, Vancouver, Canada *"A tissue damage independent murine model to study muscle mass loss in Duchenne Muscular Dystrophy (DMD)"*

5:30pm – 5:45pm	**Poster Blitz** ***132*** **Ivan Flores** – *Macrophage-mediated delivery of transgenic LIF reduces fibrosis and inflammation in mdx mice* ***129*** **Emmeran Le Moal** – *Targeting Endogenous Repair: A New Pharmacological Approach for the Treatment of Muscular Dystrophy* ***139*** **Elizabeth Kilroy** – *Zebrafish as a model to understand how strength training and inactivity impact Duchenne Muscular Dystrophy* ***142*** **Congshan Sun** – *Human pluripotent stem cell-derived PAX7::GFP+ cells can be engrafted to become quiescent satellite-like cells upon transplantation* ***147*** **Sõren Hüttner** – *Functional investigation of the role of Trps1 during myogenesis and in rhabdomyosarcoma* ***148*** **Johanna Prueller** – *Developing a suicide gene therapy for alveolar rhabdomyosarcoma*
6:00pm – 7:30pm	Dinner
7:30pm – 10:00pm	**Poster Session 3**
10:00pm	Poster Session 3 – Tear down

Friday, September 27

7:00am – 8:30am	Breakfast
8:30am – 9:00am	**Business Meeting** – *Nominations and election of the three organizers for the 2022 meeting; complete evaluation forms; discuss future sites and scheduling*
9:00am – 12:30pm	**Session 9 – Muscular Dystrophy: pathology and therapy** **Chair: Lisa Maves** – Seattle Children's Research Institute, Seattle, USA **Co-Chair: Ator Ashoti** – Hubrecht Institute, Utrecht, Netherlands
9:00am – 9:30am ***44***	**Eric Olson** – University of Texas Southwestern Medical Center, Dallas, USA *"Correction of Duchenne Muscular Dystrophy by Genome Editing"*
9:30am – 10:00am ***45***	**Pascal Bernatchez –** University of British Columbia, Vancouver, Canada *"The humanization of rodent muscular dystrophy: are plasma lipids part of the problem?"*
10:00am – 10:15am ***46***	**Helge Amthor** – Versailles Saint-Quentin-en-Yvelines University, Versailles, France *"Restoration of dystrophin at critical sites of expression following exon skipping"*
10:15am – 10:45am ***47***	**Dongsheng Duan –** University of Missouri, Columbia, USA *"CRISPR editing therapy for Duchenne muscular dystrophy in murine and canine models"*
10:45am – 11:15am	Coffee Break
11:15am – 11:45am ***48***	**Michael Kyba –** University of Minnesota, Minneapolis, USA *"Exploring mechanisms of FSHD with chronic or transient DUX4 expression in mice"*
11:45am – 12:15pm ***49***	**Stephen Tapscott** – Fred Hutchinson Cancer Research Center, Seattle, USA *"Consequences of DUX4 expression in vitro and in vivo"*

12:15pm – 12:30pm	***50***	**Christopher Banerji** – King's College London, London, UK *"PAX7 and DUX4 in Facioscapulohumeral Muscular Dystrophy: a tale of two proteins and two cell fates"*
12:30pm – 2:00pm		**Lunch and Meet the Speakers**
2:00pm – 4:00pm		**Session 10 – Modifiers of muscle homeostasis and disease** **Chair: Armando Villalta** – University of California, Irvine, USA **Co-Chair: Lara Rodriguez Outeriño –** University of Jaén, Jaén, Spain
2:00pm – 2:30pm	***51***	**Elizabeth McNally** – Northwestern University Feinberg School of Medicine, Chicago, USA *"Modifiers of myopathy"*
2:30pm – 2:45pm	***52***	**Zoe White** – University of British Columbia, Vancouver, Canada *"Plasma cholesterol is a key regulator of muscle homeostasis and damage in Muscular Dystrophy"*
2:45pm – 3:00pm	***53***	**Simone Spuler** – Charité Universitätsmedizin, Berlin, Germany *"Human muscle satellite cells regenerate muscle independent of PAX7"*
3:00pm – 3:15pm	***54***	**Maximiliano D'Angelo –** Sanford Burnham Prebys Medical Discovery Institute, La Jolla, USA *"Nuclear pore complexes in the regulation of muscle homeostasis"*
3:15pm – 3:30pm	***55***	**Ekaterina Korotkevich** – University of California, San Francisco, USA *"Competition of mitochondrial genomes within mouse skeletal muscle fiber"*
3:30pm – 4:00pm	***56***	**Foteini Mourkioti –** University of Pennsylvania, Philadelphia, USA *"Telomere length regulation of muscle stem cells in chronic injuries"*
4:00pm – 4:30pm		Coffee Break
4:30pm – 6:15pm		**Session 11 – Muscle-related cancer** **Chair: Julia von Maltzahn** – Leibniz Institute on Aging, Jena, Germany **Co-Chair: Johanna Prueller** – King's College London, London, UK

4:30pm – 5:00pm ***57***	**Janet Shipley –** The Institute of Cancer Research, London, UK *"Histone modifications and potential for differentiation therapy of rhabdomyosarcomas"*
5:00pm – 5:15pm ***58***	**Daniela Palacios** – IRCCS Fondazione Santa Lucia, Rome, Italy *"Epigenetic reprogramming in rhabdomyosarcoma"*
5:15pm – 5:45pm ***59***	**Thomas Braun** – Max Planck Institute for Heart and Lung Research, Bad Nauheim, Germany *"Loss of muscle stem cells quiescence in Suv4-20h1 mutants is associated with genomic instability and rhabdomyosarcoma formation"*
5:45pm – 6:15pm ***60***	**Joe Chakkalakal –** University of Rochester Medical Center, Rochester, USA *"Satellite cell contributions to pediatric skeletal muscle growth and cancer survivorship"*
6:15pm – 6:30pm	Closing Remarks
6:30pm – 7:00pm	**Awards for Junior Scientists, Best Posters and Best Image Competition**
7:00pm – 9:00pm	**Closing Banquet**
9:00pm – late	**Entertainment**

Saturday, September 28

Departure

Poster Session Assignments (JVC)

Program numbers are in ***bold italics***. Poster board numbers are in **bold**.

Poster Session 1
Tuesday, September 24, 7:30 pm – 10:00 pm

Set up: Monday, September 23, 2 – 6 pm
Tear down: Tuesday, September 24, 10 pm

61 **B1** *USP7 inhibition results in down-regulation of muscle-specific gene expression and differentiation impairment.* **Natasha Blanco**, Natalia González, Marcela Sjöberg, Hugo Olguín (Pontificia Universidad Católica de Chile, Chile)

62 **B2** *Bromodomain function of mammalian SWI/SNF (mSWI/SNF) chromatin remodeling enzymes is crucial for skeletal muscle differentiation.* **Tapan Sharma**, Anthony N Imbalzano (Biochemistry and Molecular Pharmacology, University of Massachusetts Medical School, Worcester MA, USA)

63 **B3** *Functional properties of a novel mechanosensitive Ca2+-permeable channel in mouse derived satellite cells* **Huascar Pedro Ortuste Quiroga**[1], Tomohiro Yamashita[1], Arisa Higawara[1], Shingo Yokoyama[1], Yoshiro Suzuki[2], Makoto Tominaga[2], Katsumasa Goto[1] ([1]Graduate School of Health Sciences, Toyohashi SOZO University, Japan; [2]Division of Cell Signaling, National Institute for Physiological Sciences, Japan)

64 **B4** *Klotho influences myogenesis during postnatal growth and during muscle regeneration.* **Cynthia McKee**, Steven S. Welc, Michelle Wehling-Henricks, Catherine Lindsay, Giuseppina Samengo, James G. Tidball (University of California, Los Angeles, United States)

65 **B5** *Investigating the role of mechanical tension during sarcomere self-organisation in human iPSC-derived muscle fibers* **Qiyan Mao**[1,2], Ziad Al Tanoury[4,5,6], Benjamin Friedrich[7], Olivier Pourquié[4,5,6], Frank Schnorrer[1,2,3] ([1]L'Institut de Biologie du Développement de Marseille, France; [2]Aix Marseille Université, France; [3]Centre national de la recherche scientifique, France; [4]Department of Pathology, Brigham and Women's Hospital, United States; [5]Department of Genetics, Harvard Medical School, United States; [6]Harvard Stem Cell Institute, United States; [7]Center for Advancing Electronics Dresden, Technische Universität Dresden, Germany)

66 **B6** *mRNA transport and stability interplay to localize mRNA in skeletal muscle* **Mafalda R Pimentel**, Helena Pinheiro, Edgar Gomes (Instituto de Medicina Molecular, Faculdade de Medicina, Universidade de Lisboa, Portugal)

67 **B7** *Phosphorylation of MLC2 by PKCδ is required for flight muscle maturation in Drosophila* **Pooneh Vaziri** (San Diego State University, United States)

68 **B8** *HSP70-specific nuclear transporter Hikeshi in myogenic differentiation* **Tomohiro Yamashita**[1], Huascar Pedro Ortuste Quiroga[1], Arisa Hagiwara[1], Shingo Yokoyama[2], Yoshitaka Ohno[2], Takao Sugiura[3], Yoshinobu Ohira[4], Toshitada Yoshioka[5], Katsumasa Goto[1,2] ([1]Grad Sch Health Sci, Toyohashi SOZO Univ, Toyohashi, Japan; [2]Sch Health Sci, Toyohashi SOZO Univ, Toyohashi, Japan; [3]Yamaguchi Univ, Yamaguchi, Japan; [4]Doshisha Univ, Kyoto, Japan; [5]Hirosaki Gakuin Univ, Hirosaki, Japan)

69 **B9** *The Core Enhancer and Distal Regulatory Region are not necessary for MyoD expression during embryonic myogenesis* **Cory Jubinville**, James Camp, Masakazu Yamamoto, David Goldhamer (University of Connecticut, USA)

70 **B10** *Single-cell analysis of mouse embryonic and fetal limb muscle populations* **Anthony Patelunas**, Marmar Moussa, Ion Mandoiu, David Goldhamer (University of Connecticut, United States)

71 **B11** *MyoD induced enhancer RNA interacts with hnRNPL protein via CAAA motif to activate target gene transcription during myogenic differentiation* **Yu Zhao** (Department of Orthopaedics and Traumatology, Li Ka Shing Institute of Health Sciences, The Chinese University of Hong Kong, Hong Kong, China)

B12 *WITHDRAWN*

73 **B13** *FGF signals direct myotube guidance by regulating Rho/Rac activity* **Aaron Johnson**, Shuo Yang, Allison Weske (Washington University School of Medicine, USA)

74 **B14** *Expression of helix-loop-helix transcription factor Ascl4 induces myogenic program in embryonic stem cells* **Atsushi Asakura**, Yusaku Kodaka, Shuichi Watanabe, Hikaru Ito, Mayank Verma, Tomohide Takaya, Yoko Asakura, Michael Kyba (Stem Cell institute, Paul & Sheila Wellstone Muscular Dystrophy Center, Department of Neurology, University of Minnesota Medical School, USA)

75 **B15** *The MuSK-BMP pathway is necessary for maintaining a sub-population of Type IIb muscle fibers* **Diego Jaime**, Lauren A. Fish, Justin R. Fallon (Brown University, USA)

76 **B16** *Control of myonuclear positioning by skeletal muscle CIP* **Jianming Liu** (Boston Children's Hospital, USA)

77 **B17** *New muscle identity code components identified by TRAP control shape and size of muscle subsets in Drosophila* **Krzysztof Jagla**, Benjamin Bertin, Yoan Renaud, Teresa Jagla, Guillaume Lavergne, Cristiana Dondi, Jean Philippe Da Ponte, Guillaume Junion (GReD - INSERM U1103, CNRS UMR6293, Université of Clermont Auvergne, 28, Place Henri Dunant, 63000 Clermont-Ferrand, France, France)

78 **B18** *Single-cell analysis of the muscle stem cell hierarchy identifies heterotypic communication signals involved in skeletal muscle regeneration* **Andrea J. De Micheli**[1,2], Paula Fraczek[1], Sharon Soueid-Baumgarten[1], Hiranmayi Ravichandran[2], Iwijn De Vlaminck[1], Olivier Elemento[2,3], Benjamin D. Cosgrove[1] ([1]Meinig School of Biomedical Engineering, Cornell University, Ithaca NY, USA; [2]Englander Institute for Precision Medicine, Weill Cornell Medicine, New York NY, USA; [3]WorldQuant Initiative for Quantitative Prediction, New York NY, USA)

79 **B19** *Multiplexed RNAscope and immunofluorescence on whole-mount skeletal myofibers and their associated stem cells* **Allison Kann**, Robert Krauss (Icahn School of Medicine at Mount Sinai, United States)

80 **B20** *The Roles of β-, γ-, and α-catenins in Satellite Cell Regulation* **Margaret Hung**, Robert S. Krauss (Icahn School of Medicine at Mount Sinai, United States)

81 **B21** *Myogenin has distinct function in satellite cells isolated from different muscles* **Rio Arimatsu**[1], Yuriko Nishi[1], Ken Kobayashi[1], Ryuichi Tatsumi[2], Koichi Ojima[3], Takanori Nishimura[1], Takahiro Suzuki[1] ([1]Research Faculty of Agriculture, Graduate School of Agriculture, Hokkaido University, Japan; [2]Department of Animal & Marine Bioresource Sciences, Graduate School of Agriculture, Kyushu University, Japan; [3]Animal Products Research Division, Institute of Livestock and Grassland Science, NARO, Japan)

82 **B22** *Netrin-1 synthesized in satellite cells may promote fast myofiber-type commitment during myogenic differentiation phase* **Takahiro Suzuki**[1], Aika Mori[1], Yuriko Nishi[1], Rio Arimatsu[1], Takahiro Maeno[1], Ken Kobayashi[1], Koichi Ojima[2], Ryuichi Tatsumi[3], Takanori Nishimura[1] ([1]Research Faculty of Agriculture, Graduate School of Agriculture, Hokkaido University, Japan; [2]Animal Products Research Division, Institute of Livestock and Grassland Science, NARO, Japan; [3]Department of Animal & Marine Bioresource Sciences, Graduate School of Agriculture, Kyushu University, Japan)

83 **B23** *Impact of polluted air on muscle stem cell response.* **Audrey Der Vartanian**[1,2], Marianne Gervais[1,2], Sophie Lanone[3], Patrice Coll[4], Frédéric Relaix[1,2,5,6,7,8] ([1]Inserm, IMRB U955-E10, 94000, Créteil, FRANCE; [2]Faculté de Médecine, Université Paris Est Créteil, 94000, Créteil, FRANCE; [3]Inserm, IMRB U955-E4, 94000, Créteil, FRANCE; [4]Laboratoire Interuniversitaire des Systèmes Atmosphériques (LISA), UMR CNRS 7583, UPEC, Créteil , FRANCE; [5]Ecole Nationale Vétérinaire d'Alfort, 94700, Maisons-Alfort, FRANCE; [6]Etablissement Français du Sang, 94017, Créteil, FRANCE; [7]APHP, Hôpital Henri Mondor, DHU Pepsy & Centre de Référence des Maladies Neuromusculaires GNMH, 94000, Créteil, FRANCE; [8]Correspondence, frederic.relaix@inserm.fr)

84 **B24** *miR-106b inhibition as therapeutic tool enhancing muscle regeneration in muscular dystrophies.* **Lara Rodríguez-Outeiriño**[1,2], Francisco Hernández-Torres[1,2], Felicitas Ramírez[1,2], Diego Franco[1,2], Amelia Eva Aránega[1,2] ([1]Department of Experimental Biology, Faculty of Experimental Sciences. University of Jaen., Spain; [2]Fundación Medina. Granada., Spain)

85 **B25** *Role of Laminin-2 in the Muscle Stem Cell Niche* **Simon Dumontier**, Emmeran Le Moal, Jasmin Collerette-Tremblay, C. Florian Bentzinger (Department of physiology-pharmacology, Université de Sherbrooke, Canada)

86 **B26** *Elucidation of post-transcriptional regulatory functions of Dhx36 in skeletal muscle stem cells and muscle regeneration* **Huating Wang**, Xiaona Chen, Jie Yuan, Guang Xue, Hao Sun (The Chinese University of Hong Kong, Hong Kong SAR)

87 **B27** *Effect of skeletal muscle cell secretome in mesenchymal stromal cells myogenic differentiation* **Silvia Elena Castro-Piedra**, Andrea Ulloa Fernandez, María Jose Campos Garay, Kimberly Castro Roldán, Gabriela Campos Quesada (Instituto Tecnológico de Costa Rica, Costa Rica)

88 **B28** *Single Cell and Reporter Analysis of Skeletal Muscle Interstitial Cells Identifies Unique Non-myogenic Mesenchymal Cell Populations* **Abigail P. Leinroth**[1], Joe V. Chakkalakal[2], Matthew J. Hilton[1] ([1]Duke University, United States; [2]University of Rochester, United States)

89 **B29** *Scleraxis positive tendon cells are required for correct muscle patterning in mammalian embryo* **Masafumi Inui**[1,4], Yudai Ono[1], Tempei Sato[2], Hiroshi Asahara[2,3] ([1]Laboratory of Animal Regeneration Systemology, Department of Life Science, School of Agriculture, Meiji University, Japan; [2]Department of Systems BioMedicine, Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University, Japan; [3]Department of Molecular Medicine, The Scripps Research Institute, United States; [4]Meiji University International Institute for Bio-Resource Research, Japan)

B30 *WITHDRAWN*

Poster Session 2
Wednesday, September 25, 7:30 pm – 10:00 pm

Set up: Wednesday, September 25, 7 – 8:30 am
Tear down: Wednesday, September 25, 10 pm

91 **B1** *Role of the TGFb-Activated Kinase 1 in muscle-resident fibro/adipogenic progenitors, a key modulator of the inflammatory environment.* **Marine Theret**[1,2], Melina Messing[1,2], Mark Hamer[1,2], Kelly McNagny[1,2], Fabio Rossi[1,2] ([1]The Biomedical Research Centre, University of British Columbia, 2222 Health Sciences Mall, Vancouver, BC, V6T 1Z3, Canada; [2]Faculty of Medicine, The University of British Columbia, 317-2194 Health Sciences Mall, Vancouver, BC, V6T 1Z3, Canada)

92 **B2** *Nedd4-1 deletion impairs mitochondrial mass and muscle fiber size upon injury and regeneration* **Jeremy Salas**, Verónica Eisner, Hugo Olguín (Pontificia Universidad Católica de Chile, Chile)

93 **B3** *Deficient Skeletal Muscle Regeneration after Injury Induced by a Clostridium perfringens Strain Associated with Gas Gangrene* **Marietta Flores-Díaz**[1], Ana Mariel Zuñiga-Pereira[1], Carlos Santamaría[2], José María Gutiérrez[1], Alberto Alape-Girón[1,3] ([1]Instituto Clodomiro Picado, Facultad de Microbiología, Universidad de Costa Rica, Costa Rica; [2]Laboratorio de Biología Molecular, Hospital Nacional de Niños, Costa Rica; [3]Departamento de Bioquímica, Escuela de Medicina, Universidad de Costa Rica, Costa Rica)

B4 *Increased retinol metabolism in aging niche cells compromises muscle stem cell function* Friedrich Becker[1], Hong Sik Yoo[2], Mahdi Rasa[1], Elias Amro[1], Simon Schwörer[1], Joanna Kirkpatrick[1], Francesco Neri[1], Joseph Napoli[2], Stefan Tümpel[1] and **K. L. Rudolph**[1]. [1]Leibniz, Institute on Aging – Fritz Lipmann Institute (FLI), Beutenbergstr. 11, 07745 Jena, Germany; [2]Department of Nutritional Sciences and Toxicology, University of California, Berkeley, CA)

95 **B5** *Enhancing endogenous repair in muscular dystrophy through cellular reprogramming* **Clauda Abboud**[1], Christoph Lepper[2], Florian Bentzinger[1] ([1]Faculté de médecine et des sciences de la santé (FMSS), University of Sherbrooke, Sherbrooke, QC, Canada; [2]Carnegie Institution for Science, Department of Embryology, Baltimore, Maryland, USA)

96 **B6** *Nitric oxide donor, Molsidomine: dose effects on endogenous nitric oxide signalling in rat muscle tissue following contusion injury* **Nicholas Woudberg**, Tracey Ollewagen, Kathryn H. Myburgh (Stellenbosch University, South Africa)

97 **B7** *Integration of Inflammation and Myogenesis during Skeletal Muscle Repair: The Role of the Transcription Factor Mohawk* **Cherie Alissa Lynch**, Erik Rogers, Douglas Anderson, Jeanne Wilson-Rawls, Alan Rawls (Arizona State University, USA)

98 **B8** *Tissue Engineering, Tissue Banking and Interinstitutional collaboration: the road towards regenerative medicine in Costa Rica* **Carolina Centeno-Cerdas**[1,2], Nefertiti Chaves-Solano[3], Andrea Ulloa-Fernández[1], Silvia Castro-Piedra[1], Johan Morales-Sánchez[1], Montserrat Jarquín-Cordero[1], Leonardo Lesser[4], Teodolito Guillén[5], Ricardo Starbird[6], Jorge M. Cubero-Sesin[7], José-Tomás Egaña-Erazo[8], Laura A. Calvo-Castro[1] ([1]Instituto Tecnológico de Costa Rica, Centro de Investigación en Biotecnologia, Escuela de Biología, Cartago, Costa Rica; [2]Department of Plastic Surgery and Hand Surgery, University Hospital rechts der Isar, Technische Universität München, Germany; [3]Tissue Bank, Trauma Hospital. Instituto Nacional

de Seguros, Costa Rica; [4]Centro de Investigación en Ciencias Atómicas, Nucleares y Moleculares (CICANUM), Universidad de Costa Rica, Costa Rica; [5]Bio-Inspired Materials and Processes group, Escuela de Ciencia e Ingeniería de los Materiales, Instituto Tecnológico de Costa Rica, Costa Rica; [6]Escuela de Química, Instituto Tecnológico de Costa Rica, Costa Rica; [7]Center for Materials Research and Extension, School of Materials Science and Engineering, Costa Rica Institute of Technology, Costa Rica; [8]Institute for Biological and Medical Engineering, Schools of Engineering, Biological Sciences and Medicine, Pontificia Universidad Católica de Chile, Santiago, Chile)

99 **B9** *Estrogen-ERβ pathway controls muscle mass and regeneration in female mice* **Kodai Nakamura**[1], Daiki Seko[1,2], Ryo Fujita[3], Yuriko Kitajima[2], Yuuki Imai[4], Yusuke Ono[1] ([1]Department of Muscle Development and Regeneration, Institute of Molecular Embryology and Genetics, Kumamoto University, Kumamoto, Japan; [2]Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan; [3]Department of Human Genetics, McGill University, Montreal, Quebec, Canada; [4]Division of Integrative Pathophysiology, Proteo-Science Center, Graduate School of Medicine, Ehime University, Ehime, Japan)

100 **B10** *Regulation of muscle regeneration by CREB/ CRTC transcription factors* **Rebecca Berdeaux**, Dmitry Akhmedov, Randi Fitzgibbon, Maria Mendoza Stetter (McGovern Medical School at The University of Texas Health Science Center at Houston (UTHealth), USA)

101 **B11** *Open*

102 **B12** *Targeted Genome Engineering to Generate Therapeutic iPSC-Derived PAX7+ Myogenic Progenitors* **Hyunkee Kim**, James Kiley (University of Minnesota, United States)

103 **B13** *Targeting Circadian Clock Regulators for Muscular Dystrophy Therapy* **Ke Ma**[1], Hongbo Gao[1], Xuekai Xiong[1], Somik Chatterjee[2] ([1]Department of Diabetes Complications & Metabolism, Beckman Research Institute of City of Hope, Duarte, CA 91010, USA; [2]Center for Diabetes Research, The Methodist Hospital Research Institute, Houston, TX, 77030, USA)

104 **B14** *Calcitonin receptor signaling and muscle exercise* **So-ichiro Fukada**, Lidan Zhang (Osaka University, JAPAN)

105 **B15** *Retinoic acid signaling regulates fate of mesenchymal progenitors during muscle regeneration and pathogenesis* **Akiyoshi Uezumi**[1], Madoka Ikemoto-Uezumi[1], Tamaki Kurosawa[1], So-ichiro Fukada[2], Takehiro Kasai[3], Kinji Ohno[3], Kunihiro Tsuchida[4] ([1]Tokyo Metropolitan Institute of Gerontology, Japan; [2]Osaka University, Japan; [3]Nagoya University, Japan; [4]Fujita Health University, Japan)

106 **B16** *The Impacts of Environmental Chemicals on Telomere Length and Adverse Effects in A549 Cells* **Adonay Kiflay** (University of Copenhagen, Denmark)

107 **B17** *Proteomic analysis of skeletal muscles reveals extracellular proteins affecting satellite cell function during aging* **Svenja Schüler**, Joanna M. Kirkpatrick, Manuel Schmidt, Martin Hemberg, Julia von Maltzahn, Alessandro Ori (Leibniz Institute on Aging - Fritz-Lipmann Institute, Germany)

108 **B18** *P38α MAPK coordinates the activities of several metabolic pathways that together induce atrophy of denervated muscles.* **Eyal Bengal**, Maali Odeh, Yael Tamir-Livne, Tali Haas (Department of Biochemistry, Rappaport Faculty of Medicine, Technion-Israel Institute of Technology, P.O. Box 9649, Haifa 31096, Israel)

109 **B19** *The aged inflammatory niche prevents stem cell contribution to muscle regeneration* **Romeo S. Blanc**, John Bachman, Nicole Paris, Joe Chakkalakal (University of Rochester, US)

110 **B20** *The impact of denervation on satellite cell functionality* **Henriette Henze**, Svenja C. Schüler, Julia von Maltzahn (Leibniz Institute on Aging – Fritz Lipmann Institute (FLI), Germany)

111 **B21** *Dysregulated cell signalling and reduced satellite cell potential in ageing muscle* **Gurtej Dhoot**[1], Biggy Simbi[1], Khalid Alyodawi[2], Ketan Patel[2] ([1]RVC, university of London, UK; [2]University of Reading, UK)

112 **B22** *Oxidative muscles have better mitochondrial homeostasis than glycolytic muscles throughout life and maintain mitochondrial function during aging* **Annunziata Crupi**[1,2], Jordan Nunnelee[1], David Taylor[1], Amandine Thomas[1], Jean-Philippe Vit[1], Celine Riera[1], Roberta Gottlieb[1], Helen Goodridge[1] ([1]Cedars Sinai, United States; [2]University of Southern California, United States)

113 **B23** *Identification and characterization of factors involved in skeletal muscle aging* **Hellen E. Ahrens**, Manuel Schmidt, Christina Picker, Christine Poser, Julia von Maltzahn (Leibniz Institute on Aging - Fritz Lipmann Institute (FLI), Beutenbergstraße 11, 07745 Jena, Germany)

114 **B24** *An exercise-regulated long intergenic noncoding RNA improves muscle differentiation in ageing* **Martin Wohlwend**[3], Kristine Williams[2], Pattarawan Pattamaprapanont[2], Pirkka-Pekka Laurila[1], Romain Barrès[2], Ulrik Wisløff[3], Jose Bianco Moreira[3], Johan Auwerx[1] ([1]Ecole polytechnique fédérale de Lausanne, Switzerland; [2]University of Copenhagen, Denmark; [3]Norwegian University of Science and Technology, Norway)

115 **B25** *Sphingolipid depletion reverses age-associated muscle dysfunction and improves muscle regeneration* **Pirkka-Pekka Laurila**[1,2], Peiling Luan[1], Martin Wohlwend[1], Johanna Tuhkanen[2], Maroun Bou Sleiman[1], Thomas Eichmann[3], Jari Lahti[2], Johan Eriksson[2], Johan Auwerx[1] ([1]École polytechnique fédérale de Lausanne, Switzerland; [2]University of Helsinki, Finland; [3]Karl-Franzens-Universität Graz, Austria)

116 **B26** *Highly efficient differentiation of human pluripotent stem cells into transplant competent myogenic progenitors and functional myofibers* **Robert Judson**[1], Fayeza Islam[1], Uriel Pena[1], Nasim Kajabadi[1,3], Mark Hamer[3], Terry Thomas[1], Allen Eaves[1,2], Steve Szilvassy[1], Fabio Rossi[3], Sharon Louis[1] ([1]STEMCELL Technologies Inc, Vancouver, BC, CANADA; [2]Terry Fox Laboratory, BC Cancer Agency, Vancouver, BC, CANADA; [3]Department of Medical Genetics, University of British Columbia, Vancouver, BC, CANADA)

117 **B27** *Control of C2C12 myoblast cells growth and their differentiation into myotubes by electrical impedance spectroscopy and electric field stimulation on a patterned gold electrode.* **Karla Ramírez-Sánchez**[1], Andrea Ulloa-Fernández[2], Silvia Castro-Piedra[2], Juan José Montero-Rodríguez[3], Mónica Prado-Porras[4], Esteban Avendaño[5], Ricardo Starbird[1] ([1]School of Chemistry, Costa Rica Institute of Technology, 159-7050 Cartago, Costa Rica, Costa Rica; [2]School of Biology, Costa Rica Institute of Technology, 159-7050 Cartago, Costa Rica, Costa Rica; [3]School of Electronic Engineering, Costa Rica Institute of Technology, 159-7050 Cartago, Costa Rica, Costa Rica; [4]Microbiology Department, Centro de Investigación en Enfermedades Tropicales (CIET), Universidad de Costa Rica, San Pedro, Costa Rica, Costa Rica; [5]Physic Department, Centro de Investigación en Ciencia e Ingeniería de Materiales (CICIMA), Universidad de Costa Rica, San Pedro, Costa Rica , Costa Rica)

37 **B28** *Engineering combinatorial biomimetic environments to control muscle stem and progenitor cell regulatory phenotypes and to enhance muscle cell transplantation therapies* **Alexander Loiben**[1], Kun Ho Kim[1], Sharon Baumgarten-Soueid[1], Victor Aguilar[1], Jonathan Chin Cheong[1], Ruth Kopyto[1], Paula Fraczek[1], Ishita Jain[2], Gregory Underhill[2], Benjamin Cosgrove[1] ([1]Cornell University, United States; [2]University of Illinois at Urbana-Champaign, United States)

33 **B29** *Human Duchenne Muscular Dystrophy iPSC-derived myotubes as an in vitro model for studying epigenetic alterations controlling the fibrotic response: role of the epigenetic regulator SETDB1* **Sonia Albini**[1], Alice Granados[1], Roberta Rapone[1], Chiara Nicoletti[2], Luca Caputo[2], Vittorio Sartorelli[4], Pier Lorenzo Puri[2], Fabien Le Grand[3], Slimane AIT-SI-ALI[1] ([1]Université Paris Diderot Paris 7 - CNRS, USA; [2]Sanford Burnham Prebys Medical Discovery Institute - La Jolla (CA), France; [3]Sorbonne Universités, UPMC Univ Paris 06, France; [4]National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), NIH, Bethesda, MD , USA)

120 **B30** *Atypical PKCλ regulates genomic stability in muscle satellite cells* **Daiki Seko**[1,2], Kiyoshi Yoshioka[1,2], Yasuo Kitajima[1], Tomonori Hirose[3], Shigeo Ohno[3], Yusuke Ono[1] ([1]Department of Muscle Development and Regeneration, Institute of Molecular Embryology and Genetics, Kumamoto University, Kumamoto, Japan; [2]Nagasaki University Graduate School of Biomedical Sciences, Nagasaki, Japan; [3]Department of Molecular Biology, Graduate School of Medical Science, Yokohama City University, Yokohama, Japan)

Poster Session 3
Thursday, September 26, 7:30 pm – 10:00 pm

Set up: Thursday, September 26, 7 am – 8:30 am
Tear down: Thursday, September 26, 10:00pm

121 **B1** *Deregulation of ACTN1: a new pathogenic mechanism at stake in nemaline myopathy?* **Jordan Blondelle**[1], Jane T. Seto[2], Majid Ghassemian[4], Jeffrey D. Singer[3], Stephan Lange[1] ([1]Division of Cardiology, School of Medicine, UCSD, La Jolla, USA; [2]Neuromuscular Research, Murdoch Children's Research Institute, Royal Children's Hospital, Parkville, Australia; [3]Department of Biology, Portland State University, Portland, USA; [4]Department of Chemistry and Biochemistry, UCSD, La Jolla, USA)

122 **B2** *Therapeutic potential of slow muscle programming for muscular dystrophy and related diseases* **Gordon Lynch**[1], Karen Martins[1], Stefan Gehrig[1], Timur Naim[1], Jennifer Trieu[1], Rene Koopman[1], James Ryall[1], Gregory Steinberg[2], Justin Hardee[1] ([1]Centre for Muscle Research, Department of Physiology, The University of Melbourne, Australia; [2]Department of Biochemistry and Biomedical Sciences, McMaster University, Canada)

123 **B3** *CRISPR-engineered human stem cells for modelling Duchenne Muscular Dystrophy* **Amaia Paredes-Redondo** (Blizard Institute, Queen Mary University of London, United Kingdom)

124 **B4** *Characterization of R-DMDdels52, a preclinical rat model of Duchenne muscular dystrophy.* **Peggy Lafuste**[1,2], Melissa Goddard[1,2], Marie Lo[3], Tianxiang Yang[1,2], Fantin Lowenstein[1,2], Baptiste Périou[1,2], Bernadette Drayton[1,2], Frédéric Relaix[1,2] ([1]Inserm, IMRB U955-E10, Créteil, F-94010, France.|, France; [2]University Paris Est, Faculty of Medicine, F-94000, Créteil, France, France; [3]UMRS 974 INSERM UPMC, Myology Institute, Pitié Salpétrière, Paris, F-75013, France, France)

125 **B5** *A genome-wide CRISPR screen to identify modifiers of Dux4 cytotoxicity* **Ator Ashoti**[1], Limone Francesco[2], Melissa van Kranenburg[1], Menno Creyghton[1], Mirna Baak[1], Judith Vivié[1], Mauro Muraro[1], Kevin Eggan[2], Niels Geijsen[1] ([1]Hubrecht Institute, Netherlands; [2]Harvard stem cell institute, USA)

B6 Withdrawn

127 **B7** *Mechanisms of muscle stem cell homeostasis during development of muscle contractures in cerebral palsy* **Andrea A. Domenighetti**[1,4], Lydia A. Sibley[1], Wendy Gross[1], Austin Menezes[1], Henry G. Chambers[2], Vineeta T. Swaroop[3], Richard L. Lieber[1,4] ([1]Shirley Ryan AbilityLab, Chicago IL, United States; [2]Rady Children's Hospital and Health Center, San Diego CA, United States; [3]Ann & Robert H. Lurie Children's Hospital of Chicago, Chicago IL, United States; [4]Department of Physical Medicine & Rehabilitation, Northwestern University, Chicago IL, United States)

128 **B8** *GADD45A is a protective modifier of neurogenic skeletal muscle atrophy* **Jeffrey Ehmsen**[1], Riki Kawaguchi[2], Giovanni Coppola[2], Ahmet Hoke[1] ([1]Johns Hopkins School of Medicine, USA; [2]University of California, Los Angeles, USA)

129 **B9** *Targeting Endogenous Repair: A New Pharmacological Approach for the Treatment of Muscular Dystrophy.* **Emmeran Le Moal**[1], Jasmin Collerette-Tremblay[1], Junio Dort[2], Nicolas Dumont[2], Joris Michaud[3], Kien Tran[1], Hugo Giguère[1], Jerome N Feige[3], Eric Marsault[1], Mannix Auger-Messier[1], C. Florian Bentzinger[1] ([1]Département de pharmacologie-physiologie - Institut de pharmacologie de

Sherbrooke - Centre de Recherche du Centre Hospitalier Universitaire de Sherbrooke - Faculté de médecine et des sciences de la santé Université de Sherbrooke., Canada; [2]CHU Sainte-Justine Research Center University of Montreal., Canada; [3]Nestlé Research Ecole Polytechnique Federale de Lausanne (EPFL) Innovation Park Lausanne., Switzerland)

130 **B10** *Single nucleus RNA-sequencing of mouse skeletal muscle reveals transcriptional heterogeneity of myonuclei* **Michael Petrany**, Casey Swoboda, Kashish Chetal, Nathan Salomonis, Douglas Millay (Cincinnati Children's Hospital Medical Center, United States)

131 **B11** *Novel human FKRP iPSC model and large-scale screening identify a compound for functional glycosylation of α-dystroglycan* **Yung-Yao Lin**[1], Jihee Kim[1], Beatrice Lana[1], Silvia Torelli[2], David Ryan[3], Francesco Catapano[2], Pierpaolo Ala[2], Christin Luft[4], Elizabeth Stevens[2], Evangelos Konstantinidis[1], Sandra Louzada[3], Beiyuan Fu[3], Amaia Paredes-Redondo[1], A. W. Edith Chan[5], Fengtang Yang[3], Derek L. Stemple[3], Pentao Liu[3], Robin Ketteler[4], David L. Selwood[5], Francesco Muntoni[2] ([1]Centre for Genomics and Child Health, Blizard Institute, Barts and the London School of Medicine and Dentistry, Queen Mary University of London, 4 Newark Street, London E1 2AT, United Kingdom; [2]UCL Great Ormond Street Institute of Child Health, 30 Guilford Street, London WC1N 1EH, United Kingdom; [3]Wellcome Trust Sanger Institute, Wellcome Trust Genome Campus, Hinxton, Cambridge CB10 1SA, United Kingdom; [4]MRC Laboratory for Molecular Cell Biology, University College London, Gower Street, London WC1E, United Kingdom; [5]The Wolfson Institute for Biomedical Research, University College London, Gower Street, London WC1E 6BT, United Kingdom)

132 **B12** *Macrophage-mediated delivery of transgenic LIF reduces fibrosis and inflammation in mdx mice* **Ivan Flores**, Steven S. Welc, Michelle Wehling-Henricks, James G. Tidball (University of California, Los Angeles, United States of America)

133 **B13** *Breaking down the regulation of muscle length in growth and disease* **Sia Nikolaou**, Liangjun Hu, Roger Cornwall (Cincinnati Children's Hospital Medical Center, USA)

134 **B14** *Intracellular calcium response of a primary culture of mouse skeletal muscle* **Andrea Ulloa-Fernández**[1], Silvia Elena Castro-Piedra[1], Katherine Hidalgo-Rodríguez[2], Gabriela Campos-Quesada[1], Kimberly Castro-Roldán[1], José Arturo Molina-Mora[3], Rodrigo Mora-Rodríguez[3], Laura Monturiol-Gross[2] ([1]Instituto Tecnológico de Costa Rica, Centro de Investigación en Biotecnología, Escuela de Biología, Cartago, Costa Rica; [2]Instituto Clodomiro Picado, Facultad de Microbiología, Universidad de Costa Rica, San José, Costa Rica; [3]Centro de Investigación en Enfermedades Tropicales, Facultad de Microbiología, Universidad de Costa Rica, San José, Costa Rica)

135 **B15** *Novel epigenetic small molecule approaches and single-cell epigenetic analysis for DMD* **Lisa Maves**[3,4], Jean-Baptiste Dupont[1,2], Gist H. Farr III[3], Melanie Morris[3], Arianna Gomez[3], Thao Pham[3], David Mack[2] ([1]I-Stem, INSERM/UEVE UMR 861, Corbeil-Essonnes, France; [2]Institute for Stem Cell and Regenerative Medicine, University of Washington, Seattle, Washington, USA; [3]Center for Developmental Biology and Regenerative Medicine, Seattle Children's Research Institute, Seattle, Washington, USA; [4]Department of Pediatrics, University of Washington, Seattle, Washington, USA)

136 **B16** *Generation and correction of DMD ΔEx51 mutations in mice and human cells by genomic editing* **Francesco Chemello**[1,2], Yi-Li Min[1,2], Cristina Rodriguez-Caycedo[1,2], Efrain Sanchez-Ortiz[1,2], Alex A. Mireault[1,2], John M. Shelton[3], John R. McAnally[1,2], Rhonda Bassel-Duby[1,2], Eric N. Olson[1,2] ([1]Department of Molecular

Biology, Hamon Center for Regenerative Science and Medicine, University of Texas Southwestern Medical Center, USA; [2]Sen. Paul D. Wellstone Muscular Dystrophy Cooperative Research Center, University of Texas Southwestern Medical Center, USA; [3]Department of Internal Medicine, University of Texas Southwestern Medical Center, USA)

137 **B17** *Regulatory T cells suppress novel skeletal muscle macrophages identified by single-cell RNA sequencing* **Armando Villalta**, Jenna Kastenschmidt, Gerald Coulis, Ali Mannaa, Nicholas Pervolarakis, Kai Kessenbrock (University of California Irvine, United States)

138 **B18** *Expansion of laminin α2 in Duchenne muscular dystrophy impairs muscle stem cell function* **Kristen Stearns-Reider**[1], Michael Hicks[1], Katherine Hammond[1], Alok Maity[1], Yerbol Kurmangaliyev [1], Jesse Chin[1], Adam Steig[1], Nicholas Geisse [3], Sophie Hohlbauch[3], Stefan Kaemmer [4], Lauren Schmitt[2], Thanh Pham [2], Ken Yamauchi[1], Bennett Novitch[1], Roy Wollman[1], Kirk Hansen[2], April Pyle[1], Rachelle Crosbie[1] ([1]UCLA, United States; [2]University of Colorado, Denver, USA; [3]Asylum Research, United States; [4]JPK Instruments, Germany)

139 **B19** *Zebrafish as a model to understand how strength training and inactivity impact Duchenne Muscular Dystrophy* **Elisabeth Kilroy**[1], Kaylee Brann[1], Tashawna Spellen[1], Alex Lewis[1], Claire Schaffer[1], Devon Varney[1], Grace Zientara[1], Amélie Germond[2], Clarissa Henry[1] ([1]University of Maine, United States; [2]IUT de Quimper - Institut de l'Université de Bretagne Occidentale, France)

140 **B20** *Precise gene editing in primary human muscle stem cells* **Helena Escobar**[1,2], Stefanie Müthel[2], Andreas Marg[1,2], Janine Kieshauer[2], Simone Spuler[1,2] ([1]Charité Universitätsmedizin Berlin, Germany; [2]Max Delbrück Center for Molecular Medicine, Germany)

141 **B21** *Analysis of Gene-Edited Dystrophin Following Chronic Injury* **Dileep Karri**[1,2], Yi-Li Min[1,2,4], John Shelton[3], Alex Mireault[1,2], Rhonda Bassel-Duby[1,2], Eric Olson[1,2] ([1]Department of Molecular Biology, Hamon Center for Regenerative Science and Medicine, University of Texas Southwestern Medical Center, USA; [2]Sen. Paul D. Wellstone Muscular Dystrophy Cooperative Research Center, University of Texas Southwestern Medical Center, USA; [3]Department of Internal Medicine, University of Texas Southwestern Medical Center, USA; [4]Exonics Therapeutics, USA)

142 **B22** *Human pluripotent stem cell-derived PAX7::GFP+ cells can be engrafted to become quiescent satellite-like cells upon transplantation* **Congshan Sun** (Johns Hokpins School of Medicine, USA)

143 **B23** *Effects of exercise on the efficacy of microdystrophin gene therapy.* **Shelby Hamm**[1], Daniel Fathalikhani[1], Kate Bukovec[1], Adele Addington[1], Haiyan Zhang[1], Justin Perry[1], Alex Mansueto[1], Ryan McMillan[1], Mike Lawlor[2], Kirsten Coleman[3], David Brown[1], Carl Morris[4], Pat Gonzalez[4], Robert Grange[1] ([1]Virginia Tech, USA; [2]Medical College of Wisconsin, USA; [3]University of Florida, USA; [4]Solid Biosciences, Inc., USA)

151 **B24** *Epigenetic tuning of miR in FAP-derived Extracellular Vesicles promotes regeneration and inhibits fibrosis in dystrophic muscles.* M. Sandonà[1,2], S. Consalvi [1,3], L. Tucciarone[1,2], M. De Bardi[1], M. Scimeca[4,5,6], D. Angelini[1], V. Buffa[7], A. D'Amico[8], E. Bertini[8], S. Cazzaniga[9], P. Bettica[9], M. Bouché[2], A. Bongiovanni[7], P.L. Puri[1,3], and **V. Saccone** [1]

145 **B25** *Ribitol rescues functional alpha-dystroglycan glycosylation in a novel patient specific FKRP-associated Walker Warburg Syndrome iPS cell model* **Carolina Ortiz Cordero**[1,2], Alessandro Magli[2], Nelio Oliveira[2], Anne Bang[3], Rita C. Perlingeiro[1,2]

([1]Department of Integrative Biology and Physiology, University of Minnesota, United States; [2]Lillehei Heart Institute, Department of Medicine, University of Minnesota, United States; [3]Sanford Burnham Prebys Medical Discovery Institute La Jolla, United States)

146 **B26** *Straightjacket/α2δ3 deregulation is associated with cardiac conduction defects in Myotonic Dystrophy type 1* **Krzysztof Jagla**[1], Emilie Plantié[1], Masayuki Nakamori[2], Yoan Renaud[1], Aline Huguet[3], Caroline Choquet[4], Cristiana Dondi[1], Lucile Miquerol[4], Masanori Takahashi[2], Geneviève Gourdon[3], Guillaume Junion[1], Teresa Jagla[1], Monika Zmojdzian[1] ([1]GReD, CNRS UMR6293, INSERM U1103, University of Clermont Auvergne, 28, Place Henri Dunant, 63000 Clermont-Ferrand, France; [2]Department of Neurology, Osaka University Graduate School of Medicine, 2-2 Yamadaoka, Suita, Osaka 565-0871, Japan; [3]Imagine Institute, Inserm UMR1163, 24, boulevard de Montparnasse, 75015 Paris, France; [4]Aix-Marseille Univ, CNRS UMR 7288, IBDM, Marseille, France)

147 **B27** *Functional investigation of the role of Trps1 during myogenesis and in rhabdomyosarcoma* **Sören Hüttner**, Björn von Eyss, Julia von Maltzahn (Leibniz Institute on Aging – Fritz Lipmann Institute (FLI), Germany)

148 **B28** *Developing a suicide gene therapy for alveolar rhabdomyosarcoma* **Johanna Prueller**, Peter Zammit (Randall Centre for Cell and Molecular Biophysics, King's College London, United Kingdom)

149 **B29** *A genetic screening strategy to uncover rhabdomyosarcoma differentiation factors* **Martyna Sroka**[1,2], Osama El Demerdash[1], Joseph Milazzo[1], Kenneth Chang[1], Xiaoli Wu[1,3], Lukas Benjamin[1], Christopher Vakoc[1] ([1]Cold Spring Harbor Laboratory, USA; [2]Watson School of Biological Sciences, USA; [3]Stony Brook University, USA)

150 **B30** *Genetic Screening Identifies MYOD1 as a Potent and Specific Dependency in Rhabdomyosarcoma* **Cristian Lopez-Cleary**[1,2,3], Xiaoli Wu[2,3], Martyna Sroka[3,4], Christopher Vakoc[3] ([1]Stony Brook University Medical Scientist Training Program, USA; [2]Stony Brook University Graduate Program in Genetics, USA; [3]Cold Spring Harbor Laboratory, USA; [4]Watson School of Biological Sciences, USA)

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