



INTERNATIONAL CONFERENCE ON MUSCLE WASTING  
MOLECULAR MECHANISMS OF MUSCLE WASTING  
DURING AGING AND DISEASE

SUNDAY SEPTEMBER 21 TO FRIDAY SEPTEMBER 26, 2025  
CONGRESSI STEFANO FRANSCINI, MONTE VERITÀ, ASCONA, SWITZERLAND



Congressi  
Stefano Francini

**ETH** zürich

**REGENERON**  
SCIENCE TO MEDICINE®

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Molecular Life Sciences

## Program

**SUNDAY**

**21.09.2025**

### **Arrival**

16.00 - 18.00

Registration

18:00-19:00

Welcome Reception

**19.00**

### **Keynote Lecture 1**

Helen Blau, Stanford University, USA

*Enhancing muscle strength in aging by targeting the gerozyme 15-PGDH*

Followed by the welcome reception (continued)

<b>MONDAY</b>		<b>22.09.2025</b>
08.30 - 08.50	Welcome address from Congressi Stefano Franscini and Monte Verità	
	<b>Session 1</b>	<b>Stem cells and regeneration in aged and dystrophic muscle</b>
	<u>Chair</u>	David Glass
<b>Speakers</b>		
08.50 - 09.15	Thomas Braun	Redirection of the non-canonical TCA cycle induces muscle stem cell activation and myofiber hyperplasia
09.15 - 09.40	Foteini Mourkioti	The Silent Decline: Unravelling the Mechanical Roots of Muscle Aging
<b>Short talks</b>		
09.40 - 09.55	Donato D'Angelo	Role of mitochondrial calcium in the activation and differentiation of skeletal muscle stem cells and skeletal muscle regeneration
09.55 - 10.10	Cristina Mammucari	The role of testosterone in skeletal muscle mitochondrial calcium signalling
<b>10:10 – 10:40</b>	<b>Coffee break</b>	
<b>Speakers</b>		
10.40 - 11.05	Markus Rüegg	Development of a gene therapy for laminin- $\alpha$ 2-deficient muscular dystrophy
11.05 - 11.30	Michael Rudnicki	Developing Regenerative Therapeutics for Neuromuscular Disease
<b>Short talks</b>		
11.30 - 11.45	Minchul Kim	Myonuclei turnover in homeostatic muscle
11.45 - 12.00	Volkan Adak	A subsynaptic kinase regulates muscle fiber identity and its restoration ameliorates cancer cachexia
<b>12.00 - 13.30</b>	<b>Lunch break</b>	
	<b>Session 2</b>	<b>Mechanisms involved in muscle function loss</b>
	<u>Chair</u>	Markus Rüegg
<b>Speakers</b>		
13.30 - 13.55	Michael Hall	mTOR signaling in growth, metabolism and disease
13.55 - 14.20	Bert Blaauw	Neural stimulation suppresses mTORC1-mediated protein synthesis in skeletal muscle
<b>Short talks</b>		
14.20 - 14.35	Qingshuang Cai	LSD1 inhibition circumvents glucocorticoid-induced muscle wasting of male mice
14.35 - 14.50	Akiyoshi Uezumi	Elucidation of the mechanism by which kranocyte aging leads to age-related degeneration of neuromuscular junctions
<b>14.50 - 15.20</b>	<b>Coffee break</b>	
<b>Speakers</b>		
15.20 - 15.45	Simone Di Giovanni	Macrophages control muscle spindle activity and locomotion
15.45 - 16.10	Tom Cheung	Blood-based organ-specific biomarker discovery for the prediction of organ health as a determinant of frailty during human aging
<b>Short talks</b>		
16.10 - 16.25	Justin Fallon	Neuromuscular junction failure as a cause for sarcopenia: Linkage to NaV1.4 loss and reversal by CIC-1 inhibition

*Molecular mechanisms of muscle wasting during aging and disease 2025*

16.25 - 16.40	Remi Mounier	Alterations of the TGFb-sequestration complex member ADAMTSL1 levels are associated with muscular defects and rhabdomyosarcoma aggressiveness
<b>17.00 - 19.00</b>	<b>Poster Session (with drinks and snacks)</b>	
<b>19.15 - 20.45</b>	<b>Dinner</b>	

TUESDAY		23.09.2025
	<b>Session 3</b>	<b>Size adaptation and muscle aging</b>
	<u>Chair</u>	Helen Blau
<b>Speakers</b>		
08.50 - 09.15	Jorge L. Ruas	The other side of muscle E3 ligases, building instead of degrading
09.15 - 09.40	Doug Millay	Control of muscle size by nuclear number and transcriptional output
<b>Short talks</b>		
09.40 - 09.55	Sonia Sandhi	Effects of dietary restriction-induced longevity on muscle health and aging in the short-lived vertebrate, <i>Nothobranchius furzeri</i>
09.55 - 10.10	Andrea Graziani	Impaired cAMP/PKA/CREB1 signaling drives mitochondrial dysfunction in skeletal muscle in cancer cachexia
<b>10.10 - 10.40</b>	<b>Coffee break</b>	
<b>Speakers</b>		
10.40 - 11.05	Nathan LeBrasseur	Cellular senescence and skeletal muscle aging
11.05 - 11.30	Frank Schnorrer	How <i>Drosophila</i> flight muscles age – a transcriptomics and proteomics resource suggests mechanisms
<b>Short talks</b>		
11.30 - 11.45	Tang Cam Phung Pham	Mitochondrial mRNA destabilization causes hypermetabolism and contributes to aging-related muscle wasting
11.45 - 12.00	Giulia Ferrarese	Study of the muscle secretome during aging
<b>12.00 - 13.30</b>	<b>Lunch break</b>	
	<b>Session 4</b>	<b>Age-associated cellular pathways</b>
	<u>Chair</u>	Foteini Mourkioti
<b>Speakers</b>		
13.30 - 13.55	Tea Shavlakadze	Molecular signatures of aging: implications for skeletal muscle aging and sarcopenia
13.55 - 14.20	Daniel Ham	Identification, localization, and functional interrogation of pro-aging genes in sarcopenic mouse muscle
<b>Short talks</b>		
14.20 - 14.35	Anna Kneppers	Transcriptional rejuvenation of aged myofiber nuclei through myonuclear accretion
14.35 - 14.50	Shih-Yin Tsai	EIF4EBP1 activation as a therapeutic strategy to improve muscle proteostasis in sarcopenia
<b>14.50 - 15.30</b>	<b>Coffee break</b>	
<b>15:30</b>	<b>Keynote Lecture 2</b>	
	Guido Kroemer, Faculty of Medicine, University of Paris Cité, France	<i>A tissue stress hormone regulating body composition</i>
<b>17.00 – 19.00</b>	<b>Poster Session (with drinks and snacks)</b>	
<b>19.15 - 20.45</b>	<b>Dinner</b>	

**WEDNESDAY**

**24.09.2025**

**Session 5**

Chair

**Epigenetic processes in aging**

Thomas Braun

**Speakers**

08.50 - 09.15

Vittorio Sartorelli

Improving Muscle Regeneration and Reducing Fibrosis in the Aged Mouse Muscle

09.15 - 09.40

Yousin Suh

Mechanisms of ovarian aging: target for geroprotection in women

**Short talks**

09.40 - 09.55

Jeffrey Kellu

Muscle-intrinsic circadian clock regulates night-time protein degradation to delay onset of sarcopenia

09.55 - 10.10

Paul Gregorevic

Temporal features in cachexia etiology with sex-based heterogeneity

**10.10 - 10.40**

**Coffee break**

**Speakers**

10.40 - 11.05

David Glass

The effects of aging on skeletal muscle function

11.05 - 11.30

Marco Bolis

The role of ectodysplasin-A2-receptor EDA2R in aging and inflammation

**Short talks**

11.30 - 11.45

Danna Breen

Growth differentiation factor 11 (GDF-11) is not a key regulator of cancer cachexia

11.45 - 12.00

Martina Esposito

Fbxo30/MUSA1 is a novel critical regulatory element for Z-line homeostasis and skeletal muscle function

**12.00 - 13.30**

**Lunch break**

**AFTERNOON: free**

**EVENING: free (dinner at Monte Verità not available)**

<b>THURSDAY</b>		
<b>25.09.2025</b>		
	<b>Session 6</b> <u>Chair</u>	<b>New developments to target neuromuscular diseases</b> Michael Rudnicki
<b>Speakers</b>		
08.50 - 09.15	Katrien De Bock	Metabolic crosstalk in the muscle microenvironment Endothelial metabolic control of insulin sensitivity through resident macrophages
09.15 - 09.40	Frederic Relaix	Rat Duchenne muscular dystrophy models for preclinical studies and deciphering tissue repair mechanisms
<b>Short talks</b>		
09.40 - 09.55	Alan Russell	Development of a fast skeletal muscle myosin inhibitor for Becker Muscular Dystrophy and beyond
09.55 - 10.10	Helena Escobar	Dual precise repair of disease-causing mutations in compound heterozygous muscular dystrophy
<b>10.10 - 10.40</b>	<b>Coffee break</b>	
<b>Speakers</b>		
10.40 - 11.05	Jeffrey Chamberlain	Increasing the potency of AAV-dystrophin vectors
11.05 - 11.30	Carsten Bönnemann	Opportunities and Challenges for AAV mediated gene therapy for the muscular dystrophies: A clinician's perspective
<b>Short talks</b>		
11.30 - 11.45	Sweta Girgenrath	EEV-mediated delivery to satellite cells: Towards a comprehensive correction of pathophysiology in a preclinical model of Duchenne Muscular Dystrophy.
11.45 - 12.00	Eleonora Maino	Wif1 modulates the inflammatory microenvironment in LAMA2 muscular dystrophy
<b>12.00 - 13.30</b>	<b>Lunch break</b>	
	<b>Session 7</b> <u>Chair</u>	<b>Effect of muscle on metabolism and vice versa</b> Yousin Suh
<b>Speakers</b>		
13.30 - 13.55	Jerome Feige	Targeting mitochondria with nutrition in humans
<b>Short talks</b>		
13.55 - 14.10	Giuseppina Caretti	BET inhibitors rewire lipid metabolism in the aged skeletal muscle
14.10 - 14.25	Erika Di Domenico	Unraveling the role of the multifaceted protein HMGB1 in maintaining tissue homeostasis upon aging: spotlight on fat and skeletal muscle
<b>14.25 - 15.00</b>	<b>Coffee break / Please remove your posters!</b>	
<b>Speakers</b>		
15.00 - 15.25	Jason Mastaitis	Myostatin and activin A-inhibition to improve weight loss quality with GLP-1
15.25 - 15.50	Bo Falck Hansen	A human muscle 3D system representing mature muscle
<b>Short talks</b>		
15.50 - 16.05	Stella Monestier	Biofabrication of a 3D human skeletal muscle microenvironment to study the early steps of fibrosis
16.05 - 16.20	Eloisa Turco	Alterations in peroxisomal-mitochondrial interplay in skeletal muscle accelerate muscle dysfunction

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**16.20**                      **Poster Award Ceremony**

**19:00**                      **Transfer to restaurant**

GALA DINNER

**FRIDAY**                      **26.09.2025**                      **Departure**

## Posters list

### Poster session 1 – Monday 22 September, 17.00 – 19.00

**1. Hirotaka Araki**

*Biozentrum, University of Basel, Switzerland*

Optimal Protein Intake and mTORC1 Inhibition in Aging Mice: A Strategy to Prevent Sarcopenia

**2. Gzu-Un Bae**

*AniMusCure, Inc, Korea*

Targeting Mitochondrial Dysfunction and Metabolic Decline to Combat Sarcopenia

**3. Martina Baraldo**

*Biozentrum, University of Basel, Switzerland*

Muscle-secreted Proteins in Response to Exercise: New Methods for the Identification of Potential Myokines

**4. Giacomo Bincoletto**

*Veneto Institute of Molecular Medicine, Italy*

Tackling DNA damage and senescence to identify new therapeutic targets for SBMA

**5. Alexia Böck**

*Biozentrum, University of Basel, Switzerland*

Generation of a fluorescent reporter mice model to study skeletal muscle's denervation response

**6. Danna Breen**

*Pfizer Inc., USA*

Investigating the effects of growth differentiation factor 15 (GDF-15) neutralization in an aged rat model

**7. Nicholas Brennan**

*State University of New York Upstate Medical University, USA*

A Mitochondria-to-Lysosome Proteostatic Axis in Progressive Muscle Wasting

**8. Indigo Chan**

*The Hong Kong University of Science and Technology, China*

Revealing Blood-based Biomarkers for Assessing Muscle Pathologies

**9. Xin Je Chen**

*State University of New York Upstate Medical University, USA*

A Novel Pathway of Progressive Muscle Wasting Induced by Mitochondrial Precursor Overaccumulation Stress

**10. Tiago Costa**

*Gulbenkian Institute for Molecular Medicine, Portugal*

Cross-talk between immune and stem cells in skeletal muscle aging and regeneration

**11. Solene Daumas**

*Aix-Marseille University, France*

Mechanisms implicated in muscle aging in *Drosophila*

**12. Giulia Ferrari**

*University of Milano, Italy*

Figuring out Nfix role in Cancer-Associated Cachexia: a novel player in Muscle Wasting

**13. Manuel Gavian Herrera**

*CNIC, Spain*

Sarcomere loss triggers partial reprogramming of adult myofibers

**14. Barbara Gayraud-Morel**

*Université Claude Bernard Lyon 1, France*

Perturbations and recovery of stem cell function following exposure to systemic signals associated with pathologies

**15. Morten Lundh**

*Gubra, Denmark*

GUB-UCN2 Restores GLP-1 induced Lean Mass Loss and Potentiates Fat Reduction

**16. Romane Idoux**

*Children's Hospital of Eastern Ontario Research Institute, Canada*

Autosomal dominant rhabdomyolysis is associated with a missense variant in the ATP2A2 reducing SERCA2 calcium pump function in skeletal muscle

**17. Yideul Jeong**

*AniMusCure, Inc, Korea*

Cdon as a Biomarker and Regulator of Muscle Stem Cell Aging

**18. Wenjun Jiao**

*Kyung Hee University, Korea*

Sarcoplipin induces skeletal muscle wasting via driving excessive non-shivering thermogenesis in dexamethasone-induced muscle atrophy

## **Poster session 2 – Tuesday 23 September, 17.00 – 19.00**

### **19. Jeremy Kessler**

*University of Geneva, Switzerland*

New aspects of TGF $\beta$  signaling in muscle regeneration

### **20. Sandra Kleiner**

*Boehringer Ingelheim Pharma GmbH & Co., Germany*

Exploration of IGF-2R blocking as potential therapeutic for sarcopenia – effects on human skeletal muscle cell proliferation and differentiation

### **21. Max Hahn**

*Gubra, Denmark*

High-Throughput 3D Imaging and Quantification of Mouse Hindlimb Muscles Using Light Sheet Fluorescence Microscopy

### **22. Andrew Mikhail**

*McMaster University, Canada*

The neuromuscular system is regulated by AMPK signaling

### **23. Elena Monti**

*Stanford University, USA*

A novel role for the gerozyme 15-PGDH in human sarcopenia revealed by transcriptomic and spatial proteomics analyses

### **24. Daniela Morelli**

*San Raffaele Scientific Institute, Italy*

Evaluation of the therapeutic properties of an engineered HMGB1 protein on tumor growth and cancer cachexia

### **25. Padmakumar Narayanan**

*Wave Life Sciences, USA*

48-Week Data from the Phase 2 Open-Label FORWARD-53 Study of WVE-N531 in Boys with Duchenne Muscular Dystrophy Amenable to Exon 53 Skipping

### **26. Sean Ng**

*University of Basel, Switzerland*

Direct AMPK Activation Confers Mutation-Independent Therapeutic Benefit in Duchenne Muscular Dystrophy

### **27. Daniele Reggio**

*Biozentrum, University of Basel, Switzerland*

Machine-learned Design and Bioxography of Functional 3D Skeletal Muscle Tissues

**28. Joe Rizk**

*Institut de Génétique et de Biologie Moléculaire et Cellulaire, France*

Androgen Receptor Signalling in Satellite Cells: A Key Modulator of Mammalian Skeletal Muscle Regeneration

**29. Gabriele Rovetta**

*University of Milano, Italy*

Development of a high-throughput screening assay to identify Nfix-modulating drugs as a novel therapy for muscular dystrophy

**30. Julia Schedel**

*Biozentrum, University of Basel, Switzerland*

The role of Trp63 in age-induced muscle atrophy

**31. Tim McGowan**

*University of Basel, Switzerland*

Loss of cell-autonomously secreted laminin- $\alpha$ 2 drives muscle stem cell dysfunction in LAMA2-related muscular dystrophy

**32. Gahee Song**

*Kyung Hee University, Korea*

Regulating peroxisomal quality control alleviates muscle atrophy in cancer cachexia

**33. Xiaowen Wang**

*State University of New York Upstate Medical University, USA*

Mitochondrial Precursor Overaccumulation Stress Induces Progressive Muscle Wasting

**34. Alexandra Winant**

*University of Copenhagen, Denmark*

Towards a molecular understanding of critical illness myopathy: a single-cell functional and multi-omic approach

**35. Mee-Sup Yoon**

*Gachon University College of Medicine, Korea*

Lipid Nanoparticle-Delivered M12-UNE-L mRNA Enhances Muscle regeneration through mTORC1 activation

**36. Jelena Zurkovic**

*Boehringer Ingelheim Pharma GmbH & Co. KG, Germany*

Characterizing sarcopenia in a preclinical mouse model: age-related changes in muscle mass, fiber diameter, and gene expression

**37. Rui Yang**

*Vrije Universiteit Amsterdam, The Netherlands*

Exercise-induced muscle mechanical loading promotes pro-inflammatory macrophage activity and macrophage-muscle stem cell cross-talk