



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



ETH zürich

REGENERON
SCIENCE TO MEDICINE®

AFMTÉLÉTHON
INNOVER POUR GUÉRIR

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THEIR FUTURE - OUR FOCUS

 **NOVARTIS**



 **Edgewise**
THERAPEUTICS

BIOZENTRUM

University of Basel
The Center for
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 <i>Enhancing muscle strength in aging by targeting the gerozyme 15-PGDH</i> followed by a welcome drink and a dinner

MONDAY		22.09.2025
08.30 - 08.50	Welcome address from Centro Stefano Franscini and Monte Verità	
	Session 1	Stem cells and regeneration in aged and dystrophic muscle
	<u>Chair</u>	David Glass
Speakers		
08.50 - 09.15	Thomas Braun	CPT1A enables promoter-confined acetyl-CoA production to prevent muscle stem cell activation and myofiber hyperplasia
09.15 - 09.40	Foteini Mourkioti	The Silent Decline: Unravelling the Mechanical Roots of Muscle Aging
Short talks		
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
10:10 – 10:40	Coffee break	
Speakers		
10.40 - 11.05	Markus Rüegg	Development of a gene therapy for laminin- α 2-deficient muscular dystrophy
11.05 - 11.30	Michael Rudnicki	Developing Regenerative Therapeutics for Neuromuscular Disease
Short talks		
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
12.00 - 13.30	Lunch break	
	Session 2	Mechanisms involved in muscle function loss
	<u>Chair</u>	Markus Rüegg
Speakers		
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
Short talks		
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
14.50 - 15.20	Coffee break	
Speakers		
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
Short talks		
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
17.00 - 19.00	Poster Session (with drinks and snacks)	
19.15 - 20.45	Dinner	

TUESDAY

23.09.2025

Session 3
Chair

Size adaptation and muscle aging
Helen Blau

Speakers

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

Short talks

09.40 - 09.55

Sonia Sandhi

Effects of dietary restriction-induced longevity on muscle health and aging in the short-lived vertebrate, *Nothobranchius furzeri*

09.55 - 10.10

Andrea Graziani

Impaired cAMP/PKA/CREB1 signaling drives mitochondrial dysfunction in skeletal muscle in cancer cachexia

10.10 - 10.40

Coffee break

Speakers

10.40 - 11.05

Nathan LeBrasseur

Cellular senescence and skeletal muscle aging

11.05 - 11.30

Frank Schnorrer

How *Drosophila* flight muscles age – a transcriptomics and proteomics resource suggests mechanisms

Short talks

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

A new way of studying the muscular secretome in a prematurely aged model

12.00 - 13.30

Lunch break

Session 4
Chair

Age-associated cellular pathways
Foteini Mourikioti

Speakers

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

Short talks

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

14.50 - 15.30

Coffee break

15:30

Keynote Lecture 2

Guido Kroemer, Faculty of Medicine, University of Paris Cité, France
A tissue stress hormone regulating body composition

17.00 – 19.00

Poster Session (with drinks and snacks)

19.15 - 20.45

Dinner

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)

THURSDAY			25.09.2025		
			Session 6		
			<u>Chair</u>		
			New developments to target neuromuscular diseases		
Speakers			Michael Rudnicki		
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		
Short talks					
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		
10.10 - 10.40			Coffee break		
Speakers					
10.45 - 11.10			Jeffrey Chamberlain		
11.10 - 11.35			Carsten Bönnemann		
			Increasing the potency of AAV-dystrophin vectors		
			Preclinical precision genetic therapy developments for the collagen VI related muscular dystrophies		
Short talks					
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		
12.00 - 13.30			Lunch break		
			Session 7		
			<u>Chair</u>		
Speakers			Effect of muscle on metabolism and vice versa		
			Yousin Suh		
13.30 - 13.55			Jerome Feige		
			Targeting mitochondria with nutrition in humans		
Short talks					
13.55 - 14.10			Giuseppina Caretti		
14.10 - 14.25			Erika Di Domenico		
			BET inhibitors rewire lipid metabolism in the aged skeletal muscle		
			Unraveling the role of the multifaceted protein HMGB1 in maintaining tissue homeostasis upon aging: spotlight on fat and skeletal muscle		
14.30 – 15.00			Coffee break		
Speakers					
15.00 - 15.25			Jason Mastaitis		
			Myostatin and activin A-inhibition to improve weight loss quality with GLP-1		
15.25 - 15.50			Bo Falk Hansen		
			A human muscle 3D system representing mature muscle		
Short talks					
15.45 - 16.00			Stella Monestier		
			Biofabrication of a 3D human skeletal muscle microenvironment to study the early steps of fibrosis		
16.00 - 16.15			Eloisa Turco		
			Alterations in peroxisomal-mitochondrial interplay in skeletal muscle accelerate muscle dysfunction		

16.15 **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

Premature aging of skeletal muscle in Kennedy disease

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 β 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. Konstantin Schneider-Heieck

ETH Zurich, Switzerland

Expanding Pooled CRISPR Screening to Skeletal Muscle: Identification of atrophy regulators using AAV-Perturb-Seq

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