Programme

Sunday, 22 September 2024

07.30 – 12.45	**REGISTRATION**
08.30 – 12.00	**Early Careers Association (ECA) Symposium**
08.30 – 10.00	**ECA SESSION I** ***Chairs: Franziska Koser (Germany) and Maria Rosaria Pricolo (Spain)***
08.30 – 08.35	Introduction by chairs
08.35 – 08.50	**Saba Gharibi (Australia):** Gestational stress altered femoral bone microarchitecture but not skeletal muscle contractile function in the dystrophin-deficient mdx mouse
08.50 – 09.05	**Albin Berg (Sweden):** Miniaturized actin-activated myosin ATPase assay requires almost 1000-fold less protein than traditional methods – applications to omecamtiv mecarbil effects on human β cardiac myosin
09.05 – 09.20	**Annika J. Klotz (Germany):** Precise titin cleavage in intact cardiac muscle tissue using cell-penetrating peptides
09.20 – 09.35	**Nejc Umek (Slovenia):** *In situ* spatial transcriptomic analysis of human skeletal muscle using the Xenium platform
09.35 – 09.45	**Christine Loescher (Germany), Franziska Koser (Germany), Maria Rosaria Pricolo (Spain) and Emrulla Spahiu (Germany):** Introduction of the ECA
09.45 – 10.00	**Mohammad Khoonkari (Netherlands):** CUORE: Incorporating High-throughput screening into 3D muscle tissue engineering
10.00 – 10.30	Coffee break
10.30 – 11.20	**ECA SESSION II** ***Chairs: Christine Loescher (Germany), Emrulla Spahiu (Germany)***
10.30 – 10.35	Introduction by chairs
10.35 – 10.50	**Christine Delligatti (USA):** Methylglyoxal glycation competes with ubiquitination, disrupting sarcomere function
10.50 – 11.05	**Momcilo Prodanovic (Serbia):** Integrating a 3D explicit multi-sarcomere model with finite element solver for cardiac tissue simulation
11.05 – 11.20	**Osman Esen (Netherlands):** From stability to flexibility: the crucial role of cytoskeleton in muscle cell functionality across time
11.20 – 11.55	**Josine de Winter (Netherlands) and Diederik Kuster (Netherlands): Career story/Advice** ***Chair: Christine Loescher (Germany)***
11.55 – 12.00	ECA closing remarks
12.00 – 12.45	Lunch break

12.45 – 13.00	**OPENING** **Tomaž Marš**, Vice-Dean, Faculty of Medicine, University of Ljubljana **Sergej Pirkmajer**, Chair of Local Organizing Committee
13.00 – 14.00	**Keynote lecture I: The Jean Hanson Lecture** ***Chairs: Elisabeth Ehler (United Kingdom), Kristina Carugo Djinovic (France, Austria)*** **Juleen R. Zierath (Sweden, Denmark):** Exercise metabolism and adaptation in skeletal muscle: Implications for type 2 diabetes
14.00 – 14.30	Coffee break
14.30 – 16.00	**SESSION S1: Regulation of energy of metabolism** ***Chairs: Jitka Žurmanová (Czech Republic), Igor Križaj (Slovenia)***
14.30 – 14.45	**Igor Križaj (Slovenia):** Unraveling snake venom sPLA2 neuromuscular blockade mechanism provides insight into pathophysiology of Alzheimer's disease
14.45 – 15.00	**Jan Kopecký (Czech Republic):** Adaptive induction of nonshivering thermogenesis in muscle rather than brown fat could counteract obesity
15.00 – 15.15	**Lilya Lehka (Poland):** Loss of unconventional myosin VI results in altered muscle energy metabolism*
15.15 – 15.30	**Martino Franchi (Italy):** Unexpected molecular and physiological adaptations of human muscle in response to resistance exercise recovery after short-term unloading
15.30 – 15.45	**Stanislava Stevanovic (Norway):** Time-dependent reduction in oxidative capacity among cultured myotubes from spinal cord injured individuals
15.45 – 16.00	**Breanne Newell-Stamper (USA):** Tension and temperature modulation of oxygen consumption in resting murine skeletal muscle
16.00 – 16.30	Coffee break
16.30 – 17.30	**Keynote Lecture II** ***Chair: Simon Sedej (Austria)*** **Guido Kroemer (France):** A new tissue hormone regulating body mass and composition
18.30 – 21.00	**Satellite Event at the National Gallery** **Welcome Address:** **Igor Švab**, Dean of Faculty of Medicine, University of Ljubljana **Gregor Majdič**, Rector of University of Ljubljana
	Keynote Lecture III: Art & Science Lecture ***Chair: Tomaž Marš (Slovenia)*** **Gregor Jemec (Denmark):** The muscles behind our changing view of the world **Andrej Smrekar (Slovenia):** Franc Kavčič, Fokion's Wife and a Rich Ionian Woman: An exceptional painting of exemplum virtutis in the National Gallery of Slovenia
	Welcome reception

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Monday, 23 September 2024

09.00 – 10.00	**Keynote lecture IV** ***Chair: Marija Pfeifer (Slovenia)*** **Bente K. Pedersen (Denmark):** Exercise as medicine in a translational perspective – focus on the role of myokine IL-6
10.00 – 11.00	**Panel discussion: Ambiguity in Science** ***Panellists: Erich Gnaiger (Austria), Anne Houdusse (France), Coen Ottenheijm (Netherlands), Michelle Peckham (United Kingdom), Bente K. Pedersen (Denmark), Nada Rotovnik Kozjek (Slovenia)***
11.00 – 11.30	Coffee break
11.30 – 13.00	**SESSION S2: Myosin expression, function, and regulation** ***Chairs: Maria Jolanta Rędowicz (Poland), Marko Ušaj (Sweden)***
11.30 – 11.36	**Maria Jolanta Rędowicz (Poland):** In memoriam Ed Korn
11.36 – 11.48	**Amani Odeh (Israel):** Myosin heavy-chain isoform distribution and fiber-type composition in skeletal muscle of sarcopenia-resistant subterranean rodent
11.48 – 12.00	**Fanny Rostedt (Finland):** Investigating myosin dysregulation in X-linked myotubular myopathy
12.00 – 12.12	**David Heeley (Canada):** Myosin essential light chain isotype influences the mechanism of actomyosin ATP hydrolysis
12.12 – 12.24	**Mamta Amrute-Nayak (Germany):** Dysfunctional human ventricular myosin as a consequence of light chain-2 mutation linked to hypertrophic cardiomyopathy (HCM)
12.24 – 12.36	**Emrulla Spahiu (Germany):** Effect of native thin filament source on motility driven by atrial and ventricular myosin*
12.36 – 12.48	**Irene Pertici (Italy):** β-cardiac and slow skeletal muscle myosins share the heavy chain isoform, but exhibit different power outputs in the synthetic nanomachine*
12.48 – 13.00	**Marko Ušaj (Sweden):** Actomyosin under heavy metals
13.00 – 15.00	Lunch & Posters session I (S1 – S4)

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15.00 – 16.30	**SESSION S3: Myosin structure and regulation in the thick filament** ***Chairs: Michael Geeves (United Kingdom), Stefan Raunser (Germany)***
15.00 – 15.05	Introduction
15.05 – 15.20	**Christopher N. Johnson (USA):** Calmodulin enhanced myofilament function; potential for an interaction with cardiac myofilament protein(s)?
15.20 – 15.35	**Giulia Arecchi (Italy):** Probing the super-relaxed myosin state in cardiac myofilaments by second harmonic-generation microscopy*
15.35 – 15.55	**Elisabetta Brunello (United Kingdom):** Effect of load on the activation of myosin filaments in heart muscle cells
15.55 – 16.10	**Ilaria Morotti (Italy):** The dependence on the afterload of the degree of thick filament activation in the heart
16.10 – 16.30	**Marco Linari (Italy):** Transition kinetics between OFF and ON states of titin upon stimulation of skeletal muscle depends on temperature as expected from the Ca^{2+} transient
16.30 – 17.00	Coffee break
17.00 – 18.30	**SESSION S4: Structure of sarcomere across scales** ***Chairs: Kristina Djinovic Carugo (France, Austria), Mathias Gautel (United Kingdom)***
17.00 – 17.20	**Anne Houdusse (France):** Atomic resolution insights into thick filament regulation
17.20 – 17.40	**Michelle Peckham (United Kingdom):** Exploiting cryo-EM structures of actomyosin-5a to reveal the physical properties of its lever
17.40 – 17.52	**Belinda Bullard (United Kingdom):** Drosophila flight muscle has two titin-like molecules (Sls) associated with each thin filament
17.52 – 18.04	**Stefan Raunser (Germany):** Unlocking the secrets of heart muscle structure
18.04 – 18.16	**Qiuping Zhang (United Kingdom):** Nesprin-2 is a novel scaffold protein for telethonin and FHL-2 in the cardiomyocyte sarcomere
18.16 – 18.28	**Péter Görög (Hungary):** Flightless-I and Drosophila LRRFIP work together to regulate radial growth of the sarcomeres
20.15 – 23.30	Dinner at the Grand Hotel Union

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Tuesday, 24 September 2024

09.00 – 10.30	**SESSION S5: E-C coupling and calcium homeostasis** ***Chairs: Vincenzo Sorrentino (Italy), Pompeo Volpe (Italy)***
09.00 – 09.20	**Daniela Rossi (Italy):** The excitation-contraction coupling mechanisms in skeletal muscle: assembly and interactions of proteins of the calcium release complex
09.20 – 09.40	**Paola Lorenzon (Italy):** A novel role for Homer2 in the functional nAChRs/IP3Rs1 interplay regulating the endplate plasticity
09.40 – 10.00	**Vincent Jacquemond (France):** Pharmacological modulation of autophagy and excitation-contraction coupling in single isolated muscle fibers
10.00 – 10.15	**Lorenzo Marcucci (Italy):** A diffusion-reaction model to quantify the role of mitochondria calcium uptake and buffer in regulating the cytosolic calcium in murine skeletal muscle fibers
10.15 – 10.30	**Vid Jan (Slovenia):** Electroporation-induced decoupling of action potentials, calcium release, and contraction in adult rat cardiomyocytes
10.30 – 11.00	Coffee break
11.00 – 12.30	**SESSION S6: *In vitro* models of striated muscle diseases** ***Chairs: Chiara Tesi (Italy), Albano C. Meli (France)***
11.00 – 11.15	**Katja Gehmlich (United Kingdom):** Using stem cell derived cardiomyocytes to model rare cardiac diseases
11.15 – 11.30	**Albano C. Meli (France):** Can we model Duchenne cardiomyopathy in a dish?
11.30 – 11.45	**Jose R. Pinto (USA):** Hypertrophic and dilated cardiomyopathy associated TNNT2 variants induce divergent nucleus remodeling in human iPSC-CMs
11.45 – 12.00	**Tom Kerkhoff (Netherlands):** Impaired force generating capacity by single skeletal muscle fibers from immune-mediated necrotizing myopathy patients*
12.00 – 12.15	**Kerstin Filippi (Germany):** Skeletal muscle disruption and mitochondrial dysfunction cause BAG3P209L-myofibrillar myopathy*
12.15 – 12.30	**Carole Dabadie (France):** Nerve stimulation induced skeletal muscle contraction: an ex vivo model to better understand skeletal muscle biology*
12.30 – 14.30	Lunch & Poster session II (S5 – S8)

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14.30 – 16.00	**SESSION S7: Cardiac Sarcomeres: Disease mutations and targeted therapeutics** ***Chairs: Michael Regnier (USA), Josine de Winter (Netherlands)***
14.30 – 14.48	**Michael Regnier (USA):** Mechanisms of contractile dysfunction with the MYH7 R403Q mutation in porcine ventricle muscle
14.48 – 15.00	**Rylan Beckingham (United Kingdom):** Biophysical characterisation of human myomesin-2 mutations and their Implications for cardiomyopathy*
15.00 – 15.12	**Alexander Matyushenko (Russian Federation):** The properties of cardiac tropomyosin have been significantly impacted by the novel Lys30Glu mutation associated with dilated cardiomyopathy
15.12 – 15.30	**Sıla Algül (Netherlands):** Hypophosphorylation of S286 in cMyBP-C is associated with detyrosination and acetylation of microtubules in hypertrophic cardiomyopathy*
15.30 – 15.42	**Josè Manuel Pioner (Italy):** Long-term effect of mavacamten impact force and sarcomere density in a mybpc3 ipsc-cardiomyocyte model of hypertrophic cardiomyopathy
15.42 – 16.00	**Theresia Kraft (Germany):** Hypertrophic cardiomyopathy: burst-like transcription, allelic and contractile imbalance likely contribute to early development of hallmarks of the disease
16.00 – 16.30	Coffee break
16.30 – 18.00	**SESSION S8: Muscle contractility and its regulation** ***Chairs: Elisabetta Brunello (United Kingdom), Marco Linari (Italy)***
16.30 – 16.45	**Alf Månsson (Sweden):** Towards full kinetic characterization of actomyosin chemo mechanics using purified single cardiac myosin II motor fragments
16.45 – 17.00	**Hendrik Bruns (Germany):** Sarcomere, troponin, and myosin X-ray diffraction signals can be resolved in single cardiomyocytes*
17.00 – 17.15	**Samantha P. Harris (USA):** Loss of myosin binding protein-c confers stretch activation properties to skeletal muscles
17.15 – 17.30	**Anthony Hessel (Germany):** Titin underpins the history-dependent properties of residual force enhancement, residual force depression, and the stretch-shortening cycling effect
17.30 – 17.45	**Vincenzo Lombardi (Italy):** Regional hierarchy of myosin motor recruitment from the thick filament in relation to heart performance
17.45 – 18.00	**Cameron Hill (United Kingdom):** Dynamics of structural changes in the myosin-containing thick filaments of intact rat soleus muscle during twitch and tetanic contraction*
18.00 – 20.15	Ljubljana Walk and River Cruise
20.15 –	Early-Career Researchers Social Gathering

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Wednesday, 25 September 2024

08.30 – 10.00	**SESSION S9: Neuromuscular diseases: from bedside to molecules** ***Chairs: Rüdiger Rudolf (Germany), Boris Rogelj (Slovenia)***
08.30 – 08.45	**Evgeniia Motanova (Italy):** Effects of chronic inactivity on mitochondria and neuromuscular junctions in older adults*
08.45 – 09.00	**Jingyi Song (Netherlands):** Developmental processes of the m. gastrocnemius are impacted by nicotinamide nucleotide transhydrogenase (NNT) dysfunction as well as hypoxia exposure of 24-day-old mice*
09.00 – 09.15	**Fabio Sarto (Italy):** Functional and morphological alterations of the human neuromuscular junction following 21-day muscle disuse*
09.15 – 09.30	**Rüdiger Rudolf (Germany):** In a SOD1 D90A hiPSC-derived neuromuscular model evoked calcium signaling and nAChR cluster morphology are altered
09.30 – 09.45	**Boris Rogelj (Slovenia):** Membrane protein dysregulation in C9orf72 mutation-associated ALS and FTD
09.45 – 10.00	**Nir Nesher (Israel):** Dynamics of muscle activation in the soft limbs of the octopus
10.00 – 10.30	**ESMR Assembly** ***Chair: Wolfgang Linke (Germany)***
10.30 – 11.00	Coffee break
11.00 – 12.30	**SESSION S10: Interorgan communication: from cell to bedside** ***Chairs: Kathryn H. Myburgh (South Africa), Natasa Nikolic (Norway)***
11.00 – 11.15	**Kathryn H. Myburgh (South Africa):** Extracellular vesicles derived from myoblasts have more effective uptake by myoblasts than EVs derived from fibroblasts and differential effects on myoblast migration were observed
11.15 – 11.30	**Nimo Mukhtar Mohamud Osoble (Norway):** Interplay between cultured human osteoblastic and skeletal muscle cells: effects of conditioned media on glucose and fatty acid metabolism*
11.30 – 11.45	**Annalisa Bernareggi (Italy):** The pharmacological activation of Piezo1 channels modulates the release of exosomes in myogenic precursor cells
11.45 – 12.00	**Elisabeth Barton (USA):** Prospects for overall benefits of exercise training in the absence of muscle IGF-I
12.00 – 12.15	**Ola Ekström (Sweden):** Genetic variation at RAB3GAP2 is associated with skeletal muscle capillary density
12.15 – 12.30	**Anej Skočir (Slovenia):** Transcutaneous functional magnetic muscle stimulation in critically ill for prevention of ICU acquired weakness: pilot study
12.30 – 14.30	Lunch & Poster session III (S9 – S13)

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14.30 – 16.00	**SESSION S11: Titin and beyond** ***Chairs: Wolfgang Linke (Germany), Miklós Kellermayer (Hungary)***
14.30 – 14.45	**Wolfgang Linke (Germany):** Targeting titin in dilated cardiomyopathy
14.45 – 15.00	**Miklós Kellermayer (Hungary):** Unfolding force map of the entire I-band titin
15.00 – 15.15	**Roberto Silva-Rojas (Spain):** Titin mechanical knock-out triggers muscle disease with myonuclei internalization and sarcomere-free myofibers*
15.15 – 15.30	**Sarah Grover (United Kingdom):** Screening for small molecules targeting pathogenic titin domains*
15.30 – 15.45	**Walter Herzog (Canada):** Titin force regulation in skeletal muscle
15.45 – 16.00	**Christine Loescher (Germany):** Deciphering the effects of *in vivo* titin cleavage levels on cardiac function, structure, and immune response
16.00 – 16.30	Coffee break
16.30 – 18.00	**SESSION S12: Cytoskeleton** ***Chairs: Elisabeth Ehler (United Kingdom), Christine Loescher (Germany)***
16.30 – 16.45	**Henk Granzier (USA):** Layout of titin's C-terminus in the cardiac sarcomere
16.45 – 17.00	**Maria Rosaria Pricolo (Spain):** Titin cleavage disrupts sarcomere-adhesion tensional homeostasis triggering fast myocardial fibrosis
17.00 – 17.15	**Yaniv Hinits (United Kingdom):** The Zr-Zq of zebrafish ttn.2 is alternatively spliced in muscle and is dispensable for muscle formation and function under normal development
17.15 – 17.30	**Frieder Schoeck (Canada):** Filamin protects myofibrils from contractile damage through changes in its mechanosensory region
17.30 – 17.45	**Sophie Broadway-Stringer (United Kingdom):** From structure to function: understanding the impact of a FLNC missense variant and its role in hypertrophic cardiomyopathy*
19.15 – 21.00	Satellite Event at the Academy of Music
	Concert & Reception

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Thursday, 26 September 2024

09.00 – 10.30	**SESSION S13: Mitochondrial physiology and pathophysiology** ***Chairs: Pablo M. Garcia-Roves (Spain), Arild C. Rustan (Norway)***
09.00 – 09.15	**G. Hege Thoresen (Norway):** Loss of AMPKα2 subunit in cultured myotubes promotes reduced lipid oxidation and lipid synthesis but increases the response to mitochondrial uncoupling
09.15 – 09.30	**Erich Gnaiger (Austria):** Functional hypoxia in cardiac mitochondria: oxidative phosphorylation, mitochondrial membrane potential, coenzyme Q redox state, and calcium uptake
09.30 – 09.45	**Steen Larsen (Denmark):** Mitochondrial adaptations to weight loss: lifestyle, surgery or medication
09.45 – 10.00	**Grzegorz Sumara (Poland):** ERK3 deletion promotes mitochondrial function and oxidative capacity in skeletal muscle
10.00 – 10.15	**Jana Disch (Germany):** A computational model to study the control and dynamics of energy metabolism in contracting skeletal muscle fibers
10.15 – 10.30	**František Galatík (Czech Republic):** Beta-2 adrenergic signaling and the JAK/STAT pathway are essential for the cardioprotective effect of long-term cold acclimation*
10.30 – 11.00	Coffee break
11.00 – 12.00	**Keynote lecture V: The Closing Lecture** ***Chair: Carlo Reggiani (Italy)*** **Igor Mekjavić (Slovenia):** Mitigating muscle atrophy during the mission to Mars
12.00 – 12.30	**Announcement of Marcus Schaub Awards** ***Christina Karatzaferi (Greece), Stefan Galler (Austria)***
12.30 – 13.00	**Summary and Closing** ***Sergej Pirkmajer (Slovenia), Katarina Miš (Slovenia)***
13.00 – 14.00	Lunch break

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14.00 – 19.00	**Satellite Symposium and Workshop: Skeletal Muscle Research – from Cell to Human**
14.00 – 14.05	**OPENING** **Samo Ribarič (Slovenia)**, Head of Institute of Pathophysiology, Faculty of Medicine
14.05 – 15.20	**Symposium** ***Chairs: Erich Gnaiger (Austria), Steen Larsen (Denmark), G. Hege Thoresen (Norway)***
14.05 – 14.25	**Arild C. Rustan (Norway):** Cultured human skeletal muscle cells - interventions to modify energy metabolism
14.25 – 14.45	**Pablo M. Garcia-Roves (Spain):** Innovations in mitochondrial research: exploring exercise-induced mitochondrial adaptations in skeletal muscle
14.45 – 15.05	**Christina Karatzaferi (Greece):** Assessing skeletal muscle: texture, quantity and functionality
15.05 – 15.20	**Discussion and conclusions**
15.20 – 16.00	Coffee break and distribution into groups A and B
16.00 – 19.00	**Workshop**
Group A:	**High resolution respirometry**
16.00 – 19.00	**Pablo M. Garcia-Roves (Spain), Erich Gnaiger (Austria), and Klemen Dolinar (Slovenia):** High resolution respirometry and assessment of mitochondrial function in skeletal muscle cells
Group B:	**Cell-based experiments & assessment of skeletal muscle *in vivo***
16.00 – 17.00	**Thorsten Jonas (Netherlands), Mohammad Khoonkari (Netherlands):** Muscle building *in vitro*: Next-Gen 3D muscle tissue engineering with Cuore
17.00 – 18.00	**Giorgos K. Sakkas (Greece):** Muscle assessment using CT and MRI images-practical examples
18.00 – 19.00	**Arild C. Rustan (Norway):** Assessment of energy metabolism in skeletal muscle cells using radiolabeled substrates

Poster sessions

Monday, 23 September 2024

Poster session I (S1 – S4)

P I-1 **Petr Zouhar (Czech Republic):** Identification and validation of integrative biomarkers of physical activity level and health in children and adolescents

P I-2 **Rostyslav Bubnov (Ukraine):** Ultrasound assessment of collagen content in contracted and non-contracted muscle areas: a comparative study

P I-3 **Eliška Haasová (Czech Republic):** Postnatal imprinting of muscle proteome by ambient temperature in mice differing in propensity to obesity*

P I-4 **Petra Janovska (Czech Republic):** Effect of cachexia on metabolism in myocardium and epicardial adipose tissue in patients with heart failure

P I-5 **Dominika Wojton (Poland):** Involvement of unconventional myosin VI in lipolysis in hindlimb skeletal muscle*

P I-6 **Chiedozie Kenneth Ugwoke (Slovenia):** Beyond histochemistry: FTIR spectroscopy as a novel approach for analyzing skeletal muscle composition in metabolic disorders*

P I-7 **Efua Gyakye Ewusi Brown (Slovenia):** The effects of a high-fat diet on the biochemical and structural properties of tibialis anterior muscle of genetically lean and obese mice*

P I-8 **Žiga Šink (Slovenia):** Skeletal muscle fibre composition and 3D capillary network changes in streptozotocin-induced diabetic mice*

P I-9 **Carlos Acosta (Poland):** Unravelling the role of MK5 in the regulation of skeletal muscle biology*

P I-10 **Enrico Pierantozzi (Italy):** Deletion of the muscle-specific internal promoter of the ANK1 gene results in significant alteration of glucose and glucose-related parameters

P I-11 **Rok Blaž (Slovenia):** Analysis of the effects of individualized nutrition and physical activities on body composition during the treatment of breast cancer patients

P I-12 **Jitka Žurmanová (Czech Republic):** Short term acclimation shifts NAD(P)H lifetime on isolated cardiomyocytes

P I-13 **Klemen Dolinar (Slovenia):** Different inhibitors of purine metabolism can have divergent effects on AMPK, insulin signalling and glucose uptake in L6 myotubes

P I-14 **Nataša Pollak (Slovenia):** Age-related adaptations in fiber-type and capillary network characteristics of the human splenius capitis muscle

P I-15 **Mahdieh Shojaa (Germany):** Effect of whole-body electrical muscle stimulation (WB-EMS) on muscle strength and muscle mass in people with prediabetes: a pilot-study

P I-16 **Leonardo Nogara (Italy):** Reduced ATP turnover during hibernation in relaxed skeletal muscle

P I-17 **Frank Brozovich (USA):** Aging related decreases in NM myosin expression and contractility in a resistance vessel

P I-18 **Yuichiro Maeda (Japan):** What is common between actin ATPase and GroEL ATPase?

P I-19 **Mauro Montesel (Italy):** Piperine derivative binding site revealed by photoaffinity labelled compound*

P I-20 **Cosimo de Napoli (Italy):** Myosin SRX-DRX equilibrium is modulated in both directions by novel piperine analogues in fast skeletal muscle*

P I-21 **Weronika Ficerman (Poland):** Unconventional myosin VI affects organization of subcellular compartments structure in cardiac mesenchymal stem/stromal cells and the heart*

P I-22 **Tianbang Wang (Germany):** Identification of a new tension-sensing state in the actomyosin crossbridge cycle

P I-23 **Ayesha Sarfraz (Germany):** Investigating the effects of mavacamten on diaphragm muscle myosin*

P I-24 **Michel Nicolas Kuehn (Germany):** The effect of myosin inhibition on passive sarcomeric structures*

P I-25 **Masataka Kawai (USA):** Mechanisms of oscillatory work and force generation step in single myofibrils

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P I-26 **José Medina (Canada):** Analyzing the effects of Drosophila Zasp mutants on muscle architecture*

P I-27 **József Mihály (Hungary):** Myotrophin-CP antagonism governs muscle hypertrophy by regulating the number of myofilaments

P I-28 **David Casas-Mao (United Kingdom):** Effects of specific disease mutations in non-muscle myosin 2A on its structure and function

P I-29 **Luka Pušnik (Slovenia):** Diffusion tensor imaging of skeletal muscle using 9.4-T magnetic resonance microscopy: a pilot study*

P I-30 **Martina Esposito (Italy):** MUSA1 is a novel critical regulatory element for Z-line homeostasis and skeletal muscle function*

P I-31 **Alicia Cuber Caballero (United Kingdom):** Expansion microscopy for the case of the skeletal myofibril: optimisation and benchmarking*

Tuesday, 24 September 2024

Poster session II (S5 – S8)

P II-1 **Sara Stanic (Czech Republic):** Development of the technique for systemic assessment of the effects of cold exposure on metabolism and functional muscle parameters*

P II-2 **Ernő Zádor (Hungary):** Molecular acupuncture-like effect exerted on a scale free network mechanism in growth stimulation made by *in vivo* transfection of regenerating rat soleus

P II-3 **Cristian Romeo Revnic (Romania):** 1H nuclear magnetic resonance study of contraction-relaxation cycles in rat heart with experimental hyperthyroidism

P II-4 **Zoltán Singlár (Hungary):** Novel aspects on the role of the endocannabinoid system in murine skeletal muscles

P II-5 **Matteo Serano (Italy):** Transgenic overexpression of miR-486 ameliorates muscle function in mouse models of RyR1 myopathies*

P II-6 **Charlotte Gineste (France):** Testing tamoxifen as a potential therapeutic approach for recessive RYR1-related myopathy

P II-7 **Claude Collet (France):** Cardiotoxicity of the diamide insecticide chlorantraniliprole in the intact heart and in isolated cardiomyocytes from the honey bee

P II-8 **László Szabó (Hungary):** The altered function of the Piezo1 channel due to the effects on the skeletal muscle during space travel

P II-9 **Larissa Hartmann (Germany):** Unraveling heart and skeletal muscle dysfunctions in a stable VCP knockout zebrafish line

P II-10 **Fazeelat Mazhar (Italy):** An in-silico study of mavacamten action on alpha and beta myosin isoforms and human atrial and ventricular contractions*

P II-11 **Wilson Agyapong (Germany):** MicroRNA 17-5p modulation and its impact on hypertrophic cardiomyopathy pathogenesis*

P II-12 **Kenneth Campbell (USA):** Intracellular passive stress and ATP concentration as regulators of eccentric and concentric cardiac growth

P II-13 **Vladimir Vinarsky (Czech Republic):** Endogenous YAP1 activity promotes myofibril growth, maturation, and force generation in human cardiomyocytes

P II-14 **Mihaela Jurdana (Slovenia):** Effect of electrochemotherapy on C2C12 myogenesis in vitro

P II-15 **Eirini Chatzinikita (Greece):** Regulation of atrophy- and apoptosis-related genes in response to mechanical loading of young and aged myoblasts*

P II-16 **Mirjana Novkovic (Serbia):** The role of *ankrd1a* in zebrafish skeletal muscle repair

P II-17 **Christine Delligatti (USA):** Methylglyoxal glycation competes with ubiquitination, disrupting sarcomere function*

P II-18 **Federica Diofano (Germany):** Unraveling the impact of a novel SCN5A mutation in Long QT Syndrome*

P II-19 **Stanley Iyadurai (USA):** Effects of growth velocities in boys with DMD treated with vamorolone, prednisone and placebo – a post-hoc analysis

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P II-20 **Irene Tsioutsias (Australia):** Biomarker panel for Duchenne muscular dystrophy clinical trials*

P II-21 **Robert Johnson (Denmark):** Unravelling the molecular roles and signalling pathways of Cardiac Ankyrin Repeat Protein (CARP1) in dilated cardiomyopathy*

P II-22 **Olivier Cazorla (France):** Preventive eosinophilic depletion protects against cardiovascular dysfunction in a rat model of emphysema with exacerbation

P II-23 **Lok Priya Velayuthan (Sweden):** Biochemical characterization on single molecule level of various human β-cardiac myosin mutations causing hypertrophic cardiomyopathy*

P II-24 **Daniel Zornow Kruse (Denmark):** Piperine enhances dynamic contractility of fast- and slow-twitch rat muscles, but the effect is not correlated to biochemical myosin states*

P II-25 **Anabelle Cornachione (Brazil):** Long COVID leads to force decrease in single fibers from the vastus lateralis muscle of humans which is accompanied by morphological changes and trophism

P II-26 **Marco Caremani (Italy):** In demembraneted cardiac muscle lowering temperature reduces the force developed by the myosin motors without reducing the number of attached motors

P II-27 **Mark Mazin (Israel):** Features of skeletal muscle structure and contractility in hypoxia-tolerant long-lived subterranean rodent, Spalax: unusual aspects of electrophysiology in the study of fatigue*

P II-28 **Darren Hwee (USA):** Fast skeletal muscle troponin activator CK-4015089 improves muscle function in a FSHD mouse model with muscle weakness

P II-29 **Beatrice Pistolato (Italy):** Effects of firing frequency on length-force characteristics of octopus arm muscles*

P II-30 **Jenni Laitila (Finland):** Nemaline myopathy-linked TNNT1 mutations are associated with aberrant thin filament extensibility and myofibre hyper-contractility

P II-31 **Nicoletta Piroddi (Italy):** Myospryn knockout mice develop dilated cardiomyopathy associated with reduced sarcomere shortening and passive force

P II-32 **Marija Meznaric (Slovenia):** Differential dysferlin expression in rat muscle and a comparison with man

P II-33 **Masataka Kawai (USA):** Biomechanical evaluation of flash-frozen and cryo-sectioned papillary muscle samples: cross-bridge kinetics and the effect of partial Ca^{2+} activation

Wednesday, 25 September 2024

Poster session III (S9 – S13)

P III-1 **Dorjana Zerbo Šporin (Slovenia):** Prediction of sarcopenia in nursing home residents using simple physical performance tests

P III-2 **Vika Smerdu (Slovenia):** Expression of the "novel" MyHC-15 and -2x with other known MyHC isoforms in human and rat muscle spindles

P III-3 **Helena Motaln (Slovenia):** FUSp-Y526 localization during neurogenesis and neuromuscular junction formation

P III-4 **Gabija Anikevičiūtė (Lithuania):** Effects of four genetic variants on anaerobic performance and muscle function in Lithuanian elite athletes*

P III-5 **Andrea Martínez-Domínguez (Spain):** Effects in the transcriptomic response to exercise - a meta-analysis

P III-6 **Argyro Papadopetraki (Greece):** The effect of muscle cells secretome after mechanical loading and of exercise-conditioned human serum on breast cancer cells apoptosis regulation*

P III-7 **Giulia Ferrarese (Italy):** A new way of studying the muscular secretome in a prematurely aged model*

P III-8 **Barbara Žvar Baškovič (Slovenia):** Functional reserve of the cytokine IL-6 family receptors IL-6Rα, LIFR and gp130 in cultured human skeletal muscle cells

P III-9 **Anja Srpčič (Slovenia):** Expression of endogenous IL-6 in cultured human myoblasts modulates responsiveness of the JAK/STAT pathway to treatment with exogenous IL-6

* Competition for the Marcus Schaub Award

P III-10 Katja Fink (Slovenia): Dynamic expression patterns of FAM20C and FAM20A in cultured skeletal muscle cells during differentiation

P III-11 Danijela Herga (Slovenia): Sarcopenia: a hindrance to bone mesenchymal stem cell regenerative potential?

P III-12 Daniel Mc Gonigle (Ireland): The role of microRNA in predicting COVID-related frailty progression

P III-13 Franziska Koser (Germany): Lack of inflammatory proteomic signature in HFpEF versus HFrEF human hearts

P III-14 Johanna K. Freundt (Germany): Cardiac function of the living mouse after specific, graded cleavage of cardiac titin

P III-15 Katharina Voigt (Germany): Lipid droplet accumulation in isolated cardiomyocytes affects titin-based cardiomyocyte properties*

P III-16 Agata Bak (Spain): Intramolecular crosslinking glycation in titin stiffens cardiomyocytes*

P III-17 Andreas Unger (Germany): Microscopical characterization of pharmacological-modulated titin truncating variants (TTNtv) in CRISPR/-Cas9–edited hiPSC-cardiomyocytes

P III-18 Dalma Kellermayer (Hungary): Titin isoform expression in the left ventricle of Marfan-syndrome patients

P III-19 Miguel A. López-Unzu (Spain): Good neighbors communicate: consequences of mosaic titin mechanical unloading at the single-cardiomyocyte level*

P III-20 Annika J. Klotz (Germany): Precise titin cleavage in intact cardiac muscle tissue using cell-penetrating peptides*

P III-21 Brigitta Tillmann (Hungary): How cytoskeletal proteins cooperate in myogenesis?

P III-22 Osman Esen (Netherlands): From stability to flexibility: the crucial role of cytoskeleton in muscle cell functionality across time*

P III-23 Nikolai Ho (Canada): Exploring the role of Zasp52 in maintaining sarcomere integrity*

P III-24 Anja Katzemich (Canada): The function of the M-line protein obscurin in the assembly of the sarcomere in Drosophila flight muscle

P III-25 Dávid Farkas (Hungary): Sarcomere length short protein promotes peripheral thickening of the sarcomere and pointed end elongation of the thin filaments via formin interactions

P III-26 Victoria Nefedova (Russian Federation): Cytoplasmic tropomyosin isoforms differently modulate properties of cofilin, tropomodulin and caldesmon

P III-27 Ksenia Lapshina (Russian Federation): Unique properties of Tpm1.8 and Tpm1.9 cytoplasmic tropomyosins isoforms*

P III-28 Annabel Dawson (United Kingdom): Rapid diagnosis of a rare congenital myopathy in early infancy – demonstrating the prognostic value of whole genome sequencing*

P III-29 Péter Szentesi (Hungary): Reduced expression of Syndecan-4 alters mitochondrial function of skeletal muscle in mice

P III-30 Gulnaz Yildirim Koken (Czech Republic): Effect of mitochondrial supercomplex formation on muscle metabolism of cold-adapted mice*

P III-31 Kristina Bardova (Czech Republic): Electromyography, mechanomyography and indirect calorimetry to measure muscle heat production in brown adipose tissue-deficient mice

P III-32 Ivett Gabriella Szabo (Hungary): Examination of mitochondrial dynamics and oxidative metabolism in septin7 downregulated skeletal muscle cells

P III-33 Rianne Baelde (Netherlands): Unraveling mitochondrial pathomechanism in nemaline myopathy type 6, a hypercontractile myopathy*

P III-34 Francesco Mengarelli (Italy): Mitigating exercise-induced cellular damage in skeletal muscle: the role of CoQ10 supplementation in overtraining conditions

P III-35 Cristiana Sazzi (Italy): Reduction of daily steps alters whole body and muscle oxidative metabolisms without affecting mitochondrial dynamics and function*

P III-36 Blaž Kociper (Slovenia): Regulation of turnover of pyruvate dehydrogenase kinase 1 (PDK1) in cultured myotubes

P III-37 Darren Wilson (United Kingdom): LINC'ing Nesprin-1 to cardiomyocyte mechanotransduction*

* Competition for the Marcus Schaub Award