

Poster Listings

Poster Themes:

A – Firing

B – Plasticity

C – ALS

D – Development

E – Pathophysiology

F – Circuits

P1 – Poster Session 1: Monday June 16 & Tuesday June 17

P2 – Poster Session 2: Wednesday June 18 & Thursday June 19

The poster board numbers work in the following way:

Session – Theme – Board Number (E.g P1-A-1)

Poster Session 1: Monday, June 16 & Tuesday, June 17

P1-A-1 A new approach to evaluate near synchronous inputs to motor units

Oguz Sebik¹, Kemal Türker¹

¹Koç University

P1-A-2 Deficits in synaptic transmission in two mouse models of Charcot-Marie-Tooth Disease Type 2D (CMT2D).

Kevin Seburn¹, James Sleigh², Emily Spaulding¹, Robert Burgess¹

¹The Jackson Laboratory, ²University of Oxford

P1-A-3 Analysis of individual motor units in the decerebrate cat from multi-channel EMG

Francesco Negro¹, Chris Thompson², Michael Johnson², Matthew Holmes², Ales Holobar³, Charles Heckman², Dario Farina¹

¹Universitätsmedizin Göttingen, ²Northwestern University, ³University of Maribor

P1-A-4 Comparison of intrinsic discharge characteristics and contractile properties of rat triceps surae motoneurons.

Thomas Hamm¹, Vladimir Turkin¹, Derek O'Neill¹

¹Barrow Neurological Institute

P1-A-5 First systematic study of PICs in anesthetized adult mice using voltage clamp technique

Seoan Huh¹, Marin Manuel², CJ Heckman¹

¹Northwestern University, ²Universite Paris Descartes

P1-A-6 Torque vs frequency relationships when neuromuscular electrical stimulation is applied over the muscle belly, nerve trunk or alternated between the two.

Matheus Wiest¹, Abdulaziz Aldayel¹, Helen Schmidt², David Collins¹

¹University of Alberta, ²Universidade Federal do Pampa

P1-B-7 Sensitization of lumbar motoneurons by the "pain mediator" bradykinin

Frédéric Brocard¹, Mouloud Bouhadfane², Attila Kaszas³, Laurent Vinay²

¹CNRS/Institut de Neurosciences de la Timone, ²Institut de Neurosciences de la Timone. CNRS - Aix Marseille University, ³Institut de Neurosciences des Systèmes. INSERM - Aix Marseille University

P1-B-8 Evaluation of motor unit recruitment and discharge rates influence on sex-related differences in force steadiness

Kaylee Larocque¹, Jennifer Jakobi¹, Brad Harwood¹

¹UBC Okanagan

P1-C-9 The Involvement of Motoneuron Size in Amyotrophic Lateral Sclerosis

Su-Wei Kuo¹, CJ Heckman¹

¹Northwestern University

P1-C-10 Excitatory and inhibitory synaptic boutons and dendritic vacuolization in adult motoneurons of SOD1-G93A mice.

Nicolas Delestree¹, Clemence Martinot¹, Marin Manuel¹, Daniel Zytnicki¹

¹Paris Descartes University

P1-C-11 Dynamic profile of calcium signaling in hypoglossal motoneurons from adult wild-type and tgSOD1 mice

Bernhard Keller¹, Andrea Fuchs², Sylvie Kutterer³, Jochen Roeper³

¹University of Göttingen, ²Karolinska Institutet, ³Goethe University Frankfurt

P1-D-12 Activity-dependent synaptic plasticity at VLF-motoneuron synapses depends on the flexor-extensor nature of motoneurons and on mGluR expression during development

Sandrine Bertrand¹, Constanze Lenschow¹, Frederique Masméjean¹, Jean-René Cazalets¹

¹INCIA, CNRS, Université de Bordeaux

P1-D-13 Emergence of motor circuit activity

Chris Law¹, Michel Paquet¹, Artur Kania¹

¹Institut de recherches cliniques de Montréal

P1-E-14 Reorganization of VGLUT1 Synapses on Spinal Motoneurons Following Peripheral Nerve Injury

Travis Rotterman¹, Paul Nardelli², Timothy Cope², Francisco Alvarez¹

¹Emory University, ²Wright State University

P1-E-15 Stroke-related changes in motor unit firing behavior during fatiguing contractions

Allison Hynstrom¹, Spencer Murphy¹, Reivian Berríos¹, Sandra Hunter¹, Francesco Negro², Dario Farina², Brian Schmit¹, Kevin Keenan³

¹Marquette University, ²Gottingen University, ³University of Wisconsin Milwaukee

P1-E-16 Evidence of systemic depolarization & prolonged Ia EPSP in α motoneurons of hemispheric stroke survivors

Matthieu Chardon¹, Xiaogang Hu², Nina Suresh², Zev Rymer²

¹Northwestern University, ²Rehabilitation Institute of Chicago

P1-E-17 A revisit of motor unit firing properties in Parkinson's disease

Jessica Wilson¹, Christopher Thompson¹, CJ Heckman¹

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P1-E-18 Electrophysiological properties of medial motoneurons in a mouse model of mild SMA

Katharina Quinlan¹, Carolyn Chrzastowski², C Heckman¹, Christine DiDonato²

¹Northwestern University Feinberg School of Medicine, ²Children's Hospital of Chicago Research Center

P1-E-19 Frog Spinal Motoneuron Synaptic Activity and its Modulation by Group II Metabotropic Glutamate Receptors.

Nadezda Chmykhova¹, Nikolai Vesselkin¹, Hans-Peter Clamann²

¹Sechenov Institute of Russian Academy of Sciences, ²Bern University

P1-E-20 Post-activation depression changes following intramuscular injection of Botulinum toxin in post-stroke spastic patients

Christiane Rossi-Durand¹, Marjorie Kerzouf², Laurent Bensoussan², Jean-Michel Viton², Alain Delarque², Jacques Durand³

¹CNRS, ²Assistance Publique des Hopitaux de Marseille – UMR 7289 AMU / CNRS, ³UMR 7289 - AMU / CNRS

P1-E-21 Asymmetries in vestibular drive to ocular motoneuron pools following hemispheric stroke.

Derek Miller¹, William Rymer²

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P1-E-22 Increased central activation during eccentric contractions is associated with decreased spinal inhibition during muscle lengthening in human spinal cord injury

Hyosub Kim¹, Christopher Thompson², T. George Hornby¹

¹University of Illinois at Chicago/Rehabilitation Institute of Chicago, ²Northwestern University

P1-F-23 Synaptic mechanisms underlying C bouton-mediated modulation of motoneurons

Emily Witts¹, Ismini Rozani², Laskaro Zagoraiou², Gareth Miles¹

¹University of St Andrews, ²University of Athens

P1-F-24 Control of Motoneuron Excitability Via C-boutons

Adam Deardorff¹, Shannon Romer¹, Robert Fyffe¹

¹Wright State University

P1-F-25 Stromatoxin-Sensitive Currents Maintain Firing Rate and Increase Excitability in Postnatal Rat Lumbar Motoneurons

Shannon Romer¹, Robert Fyffe¹

¹Wright State University

P1-F-26 Decoding static hand position from human brain activity patterns

Hiske van Duinen¹, Malin Björnsdotter², Annie Butler³, Janet Taylor³, H. Henrik Ehrsson¹, Simon Gandevia³

¹Karolinska Institutet, ²Nanyang Technological University, ³Neuroscience Research Australia

P1-F-27 Expiratory motoneurons: bi-functional respiratory and locomotor spinal neurons?

Didier Morin¹, Jean-Patrick Le Gal¹, Laurent Juvin¹

¹Univ. Bordeaux

P1-F-28 The roles of central synaptic activity in shaping the morphology and activity of hypoglossal motor neurons during development.

Peter Noakes¹, M.J. Fogarty¹, R. Kanjhan¹, M.C. Bellingham¹, P.G. Noakes¹

¹The University of Queensland

Poster Session 2: Wednesday, June 18 & Thursday, June 19

P2-A-29 Development of method to record motor unit activity during voluntary contractions in the rat

Brad Harwood¹, Hilary Wakefield¹, Andrew Fuglevand¹

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P2-A-30 The amplitude of reflex inhibition follows the discharge rate rather than the size principle

Ş. Utku Yavuz¹, Francesco Negro², Oguz Sebik³, Dario Farina², Kemal Turker³

¹Georg-August University of Göttingen, ²University Medical Center Göttingen, ³Koc University

P2-A-31 Characterization of motor units in behaving adult mice shows a wide primary range

Vicki Tysseling¹, Laura Ritter¹, Matthew Tresch¹, CJ Heckman¹, Marin Manuel²

¹Northwestern University, ²Université Paris Descartes

P2-B-32 Plasticity-dependent modulation of mitochondrial biogenesis determining motor neuron function and vulnerability

Camille Lancelin¹, Pitchaiah Cherukuri¹, Lena Grosse², Stefan Jakobs², Till Marquardt¹

¹European Neuroscience Institute Göttingen, ²Max Planck Institute for Biophysical Chemistry

P2-B-33 Spike-Timing-Dependent Plasticity in the Human Spinal Cord is Enhanced by a Greater Number of Stimulus Pairs

Janet Taylor¹, Siobhan Fitzpatrick¹

¹Neuroscience Research Australia

P2-C-34 **One subpopulation of spinal motoneurons, likely S-type, is hyperexcitable in neonatal SOD1-G93A mice.**

Felix Leroy¹, Boris Lamotte d'Inacamps², Rebecca Imhoff-Manuel², Daniel Zytnicki²

¹Columbia University, ²CNRS

P2-C-35 **Long-term measurement of muscle denervation and motor impairment in vivo in ALS model mice**

Turgay Akay¹

¹Dalhousie University

P2-D-36 **Genetic regulation of motor neuron birth**

Jessica Clark¹, Angelo Iulianella¹

¹Dalhousie University

P2-D-37 **Contribution of DSCAM in the development of the spinal locomotor circuit**

Frederic Bretzner¹, Louise Thiry¹, Maxime Lemieux¹

¹Université Laval/CRCHU de Québec

P2-E-38 **Plasticity of the serotonergic system after spinal cord injury: activity-dependent neurotransmitter re-specification?**

Raúl Russo¹, Gabriela Fabbiani¹, Carina Aldecosea¹, María Rehermann¹, Lucía Pérez¹, Omar Trujillo-Cenóz¹

¹Instituto de Investigaciones Biológicas Clemente Estable

P2-E-39 **Rescuing motor unit numbers and muscle properties after sciatic nerve crush in neonatal rats: Lamotrigine vs. Riluzole**

Urszula Slawinska¹, Anna Cabaj²

¹Nencki Institute of Experimental Biology PAS, ²Nalecz Institute of Biocybernetics and Biomedical Engineering PAS

P2-E-40 **Bite-force tremor during force tracking is altered in patients with Bruxism**

Christopher Laine¹, Ş.Utku Yavuz², Jessica D'Amico³, Monica Gorassini³, Kemal Türker⁴, Dario Farina⁵

¹Universitaetsmedizin Goettingen, ²Georg-August University, Goettingen, ³University of Alberta, ⁴Koç University, ⁵University Medical Center, Goettingen

P2-E-41 **The Effects of Motor Neuron Pre-Conditioning with Botulinum Toxin**

Colin Franz¹, Zev Rymer², C.J. Heckman³

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P2-E-42 **Effects of acute spinal cord injury on the sensory input of mouse deep dorsal horn neurons**

Theeradej Thaweerattanasin¹, Charles Heckman², Vicki Tysseling²

¹Northwestern University, ²Northwestern University, Feinberg School of Medicine

P2-E-43 Development of miniaturized, wirelessly powered neuromuscular recording devices for use in mice.

Kevin Seburn¹, Rebecca Bercich², Pedro Irazoqui²

¹The Jackson Laboratory, ²Purdue University

P2-E-44 Motor unit firing behavior during spasms of paralyzed thenar muscles

Inge Zijdwind¹, Christine Thomas²

¹UMCG, ²The Miami Project to Cure Paralysis, University of Miami MILLER School of Medicine

P2-E-45 Developmental nicotine exposure enhances motor neuron responsiveness to serotonin

Hilary Wakefield¹, Richard Levine¹, Ralph Fregosi¹, Andrew Fuglevand¹

¹University of Arizona

P2-E-46 Reinnervation following delayed transplantation of embryonic stem cell-derived motoneurons

Philippe Magown¹, Robert M Brownstone¹, Victor F Rafuse¹

¹Dalhousie University

P2-F-47 Maturation of C-bouton regulation of motoneuron excitability

Abi Thana¹, Izabela Panek¹, Robert Brownstone¹

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P2-F-48 Are acetylcholine and glutamate released by the same bouton at the motoneuron-Renshaw cell synapse?

Boris Lamotte d'Incamps¹, Philippe Ascher²

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P2-F-49 Motor axon synaptic boutons are enriched in aspartate

Francisco Alvarez¹, Dannette Richards², Shannon Romer², Ronald Griffith¹

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P2-F-50 Effect of Direct Triceps Brachii Tendon Vibration on Motor Unit Activity in the Contralateral Homonymous Muscle

Jennifer Jakobi¹, Kaylee Larocque¹, Brad Harwood³

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P2-F-51 Motor unit activity in biceps brachii in response to contralateral neuromuscular electrical stimulation

Jeffrey Gould¹, Ioannis Amiridis², Diba Mani¹, Awad Almklass¹, Boris Matkowski¹, Roger Enoka¹

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P2-F-52 The function of spinal V3 interneurons in locomotion

Han Zhang¹

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P2-F-53 Sim1 is required for the proper formation of subpopulations of V3 interneurons in the mouse spinal cord

Jake Blacklaws¹ , Dylan Deska-Gauthier¹ , Ying Zhang¹

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P2-F-54 The characterization of calretinin expressing V3 interneurons in the mouse spinal cord

Dylan Deska-Gauthier¹ , Jake Blacklaws¹ , Ying Zhang¹

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P2-F-55 Spinal sensorimotor circuits involved in locomotor circuit plasticity

Nicolas Stifani¹, Amrit Sampalli¹, Tuan Bui², Turgay Akay¹, Robert Brownstone²

¹Atlantic Mobility Action Project, Dalhousie University, ²Department of biology, University of Ottawa

P2-F-56 Are Hb9 interneurons involved in walking?

Lina Koronfel¹, Kevin Kanning², and Rob Brownstone¹

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