

Aram Megighian, *curriculum vitae*

Profile

Born: Padova, Italy, May, 14, 1962 Italian Citizenship

Married since July, 1, 1995

One child

Bibliometric Data (Scopus)

h index 18

citations 962

Papers published in international peer reviewed Journals 42

Since 2003 (last 15 years)

h index 16

citations 837

Documents 33

Education and training

Education

1981 – High School degree: Liceo Classico "T.Livio", Padova

1988 – **Doctor in Medicine and Surgery**, *magna cum laude*. School of Medicine, University of Padova – University of Padova. Thesis Title: Role of climbing fiber input in cerebellar control of optokinetic nystagmus and optokinetic after-nystagmus in guinea pig.

1988 – Minister of Health **licensure for medical practice**

1992 – **Board Certified in Neurology**, *magna cum laude*, Neurological Institute, University of Padova – University of Padova. Thesis Title: Electrophysiological modifications in the early phase after denervation of slow and fast rat skeletal muscle fibres.

Position

Research Assistant, Institute of Human Physiology and Residency, Institute of Neurology, University of Padova 1988–1992

Assistant Professor, tenure position, Institute of Human Physiology, University of Padova, 1992–2010

Associate Professor, tenure position, Department of Biomedical Sciences (DBS), University of Padova, 2010–

Head of the Neurobiology and Electrophysiology Lab, in Neurotoxins, Neuroparalysis and Regeneration Research Group (Head Prof. C. Montecucco). Department of Biomedical Sciences, University of Padova, 1997–

Scientist, Padova Neuroscience Center, University of Padova, 2017-

Scientist, University of Padova interdepartmental Center for Science History, 2013-

Adjunct Professor, Molecular Biology Institute, Dep of Biology, SDSU, California, USA
1996–1997

Research Associate, Molecular Biology Institute, Dep of Biology, SDSU, California,
USA, 1997-

Faculty Committees

- “Vallisneri” Biomedical Library Executive Committee
- Departmental Advisory Board for Science, Department of Biomedical Science, University of Padova
- Interdepartmental Center for Cognitive Neuroscience, University of Padova
- Interdepartmental Center for the History of Science, University of Padova
- Executive Committee, Department of Biomedical Sciences, University of Padova
- Departmental Advisory Board for Education, Department of Biomedical Sciences, University of Padova
- Teaching Evaluation Committee, School of Medicine, Pharmacy Course. University of Padova
- Faculty Council of PhD program in Biomedical Sciences, Department of Biomedical Sciences, University of Padova

Teaching experience

PhD Programs, University of Padova

School of Biomedical Sciences, Neurobiology
Member of the Faculty Board 2013-

School of Neuroscience
Member of the Faculty Board 2008-2013

Graduate Schools

School of Medicine, University of Padova

Professor of Human Physiology, Human Physiology Course, Course of Medicine and Surgery, 2003–

Professor of Physiology, Physiology Course, Course of Pharmacy, University of Padova
2007–

Professor of Physiology, Chemistry and Pharmaceutical Technology Course, 2012

MD residencies

Professor of Neurophysiology, Neurophysiology Course, Specialization in Neurosurgery, University of Padova, 2015-

Professor of Neurophysiology, Neurophysiology Course, Specialization in Otolaryngology, University of Padova, 2013-

Professor of Neurophysiology, Neurophysiology Course, Specialization in Neurology, University of Padova 2000–2009

Professor of Neurophysiology, Neurophysiology Course, Specialization in Neuropsychiatry, University of Padova 2000–2009

Professor of Physiology, Physiology Course, Specialization in Pediatrics, University of Padova 2000–2009

Professor of Neurophysiology, Neurophysiology Course, Specialization in Otolaryngology and Audiology, University of Padova 1998–2007

Professor of Physiology, Physiology Course, Specialization in Toxicology, University of Padova 1998–2007

Professor of Vascular Biophysics, Specialization in Vascular Surgery, University of Padova 1998–2007

INVITED LECTURES in 2013-2018

INTERNATIONAL

2018 *Drosophila melanogaster* from neurophysiology to behavior. ICGEB Master school on: *Drosophila melanogaster* as a model for neurodegenerative disorders

2017 Spatial and cenesthetic perception in modelling architectural structures. Master of Neuroarchitecture, IUAAV, Venice

2015 *Drosophila melanogaster* as animal model for studying genetic, molecular, functional and behavioral alterations in psychiatric and nervous diseases. Department of Neurobiology and Genetics, University of Wurzburg

2013 *Third jubilee International Conference of Neuroscience and Biological Psychiatry*. Armenian Academy of Sciences (Yerevan, Armenia, September)
Behavioral responses of *Drosophila melanogaster* lines carrying SNAP-25 or Syntaxin point mutations.

2013 Neuroexcitosis nanomachine: from synapse to psychiatric disease. International Centre for Genetic Engineering and Biotechnology (Trieste, March)

NATIONAL

2018. Hair cell. VI Corso di Vestibologia (Padova, March).

2017. Velocity storage mechanisms. V Corso di Vestibologia (Padova, March)

2010-2016

Graduate Course in “Models in genetic disease research” in collaboration with the Université Paris 7-Denis Diderot (Organizer MA Zordan, Dip of Biology, Università di Padova) (Graduate Course in Biology)

2016. I nuclei Vestibolari. IV Corso di Vestibologia (Padova, March).

2015. Il Vestibolo-cerebello. III Corso di Vestibologia (Padova, February).

2014. Modelli sperimentali nella ricerca audio-vestibolare. Colloquia Oto-Rhino-Laryngologica et Audio-Phoniatica Patavina (Padova, February)

2014. FOCUS ON. I neurotrasmettitori del sistema vestibolare. II Corso di Vestibologia (Padova, February)

2014. Dalla sinapsi al sonno in *Drosophila*. Collegare la funzione/ disfunzione sinaptica al comportamento in un modello per lo studio delle malattie neuropsichiatriche. XVIII Meeting of the Italian Society of Psychopathology. (Turin, February).

ORGANIZED INTERNATIONAL MEETINGS

2012 *XIV European Neurobiology Conference - Neurofly 2012* (Padova, 3-5 Settembre, 2012)

Organizing Committee (R.Costa, A.Megighian, MA Zordan)

PUBLIC SEMINARS

2012 Dipartimento alla Educazione, Cultura e Sport. Bellinzona, Canton Ticino (CH). (Continuous education for high school teachers)
Funzioni e disfunzioni del Sistema Nervoso.

2011 Brain Awareness Week (March, 2011)

Incontri: serpenti, insetti, batteri....possiamo imparare a conoscere il cervello da questi organismi ? (Organizer: A.Megighian) (General Audience)

2013 Rotary Club, Abano Terme. Le mosche nel cervello.....come si possono studiare le malattie psichiatriche utilizzando il moscerino della frutta.

2014 Brain Awareness Week (March 2014)

Il Sonno: Evoluzione, Funzione e Patologia. Settimana del Cervello

2016 Galileo Festival (March 2016)

Siamo tutti matti ? Malattie mentali e moscerini. Uso di questo modello sperimentale per lo studio delle malattie mentali e la valutazione in prima istanza di possibili principi attivi farmacologici

Invited reviewer for peer-review journals

Elife

Journal of Cell Science

Neuroscience Letters

Scientific Reports

Journal of Neurogenetics

Neurotoxic Research

Journal of Applied Physiology

Journal of Neuroscience Methods

Physiological Research

Bioessays

Journal of Physiological Sciences

Toxins

Molecular neurobiology

Frontiers in Physiology

Frontiers in Neuroscience

Frontiers in Molecular Neuroscience

Frontiers in Invertebrate Physiology (board of Editors)

Invited reviewer for funding Agencies

Medical Research Council, UK

National Science Foundation, USA

Ministero dell'Istruzione, dell'Università e della Ricerca Scientifica, Italy

Regione Puglia

Istituto Italo-Francese

Ministero della Ricerca Scientifica, Poland

Research Projects as PI or participant

Ankirina 1.5: ruolo funzionale nelle tre fasi (eccitazione, accoppiamento eccitazione-contrazione, contrazione) della risposta del muscolo scheletrico. PI of Research Unit: A. Megighian. National Coordinator: Vincenzo Sorrentino. Period covered: 2011-2013; Funding 55.000 Euro; Agency: Ministry of Education, University and Research; PRIN funds.

Physiopathology of the synapse: neurotransmitters, neurotoxins and novel therapies. (PI of Research Unit: M. Zordan; Coordinator: Cesare Montecucco, University of Padova, Italy). Period covered: 2008–2010.; Funding: (470.000 Euro); Agency: Cassa di Risparmio di Padova e Rovigo (Private Research Foundation).

Ruolo degli Sfingolipidi nell'integrità funzionale del sistema nervoso e muscolare: studio integrato utilizzando l'organismo modello *Drosophila melanogaster*. (PI A.Megighian, University of Padova) Progetto Assegni di Ricerca Ateneo di Padova. Period covered 2010–2011 CPDR095880/09; Co–Funding 30.000 Euro. Agency: Università di Padova.

Ruolo degli Sfingolipidi nell'integrità funzionale del sistema nervoso e muscolare: studio integrato utilizzando l'organismo modello *Drosophila melanogaster*. (PI A.Megighian, University of Padova) Progetto Assegni di Ricerca Ateneo di Padova. Periodo coperto 2008–2009 CPDR078721/07; Funding 37.000 Euro. Agency: Università di Padova.

Caratterizzazione funzionale dei componenti di un complesso multiproteico coinvolto nel "trafficking" a livello sinaptico (PI A.Megighian, Università di Padova). Covered period 2004–2006 CPDA048818; Funding 33.000 Euro; Agency: Università di Padova.

Identification and characterization of nuclear genes responsible for human mitochondrial disorders. (PI Research Unit: R. Costa; Coord.: M. Zeviani, Besta Inst., Milano, Italy). Period covered: 2004–2006; Funding: (95.000 Euro); Agency: Telethon (Progetto multicentrico, Project N° GGP030039A).

Functional genomics of skeletal muscle: Systematic knock-out and functional characterization of human muscle gene homologs in *Drosophila*. (PI Research Unit: R. Costa; Coord.: L. Luzzatto, Ist. Tumori, Genova, Italy). Period covered: 2002–2004; Funding: (104.331 Euro); Agency: CNR Genomica funzionale, Legge 449/97 (Sottoprogetto 2: Basi molecolari e cellulari delle malattie).

Functional knock-out and characterization of *Drosophila* genes homologous to a selected subset of human muscle genes. (PI Research Unit: R. Costa; Coord.: M. Zeviani, Besta Inst., Milano, Italy). Period covered: 2001–2003; Funding: (103.291 Euro); Agency: Telethon (Progetto multicentrico, Project N° GP0048Y01).

Scientific activity

Past scientific activity

Optokinetic nystagmus (OKN) and Optokinetic after-nystagmus (OKAN) in different body positions. Horizontal and vertical OKN and OKAN were elicited in healthy subjects at different visual stimulus velocities and various body positions from supine (head up) or prone (head down) to upright position. It was demonstrated that vertical OKN and OKAN were asymmetric, irrespective of visual stimulus velocity, and that the asymmetry is not consequent from vestibular gravitoreceptors stimulation.

Neuromotor and neurotrophic regulation of mammalian skeletal muscle contractile proteins. Using different experimental protocols (denervation, denervation without fibrillation, nerve activity block, nerve transport block, muscle regeneration) it was shown that slow contractile proteins expression is linked to neuromotor activity, while fast type contractile proteins are differently regulated by neuromotor and/or neurotrophic factors.

Electrophysiological and mechanical properties of mammalian skeletal muscle during ageing. During ageing mammalian skeletal muscle undergoes to a slow-to-fast shift in both contractile and electrophysiological properties.

Neurophysiological activity in *Drosophila melanogaster* null mutants of circadian pacemaker genes *tim* and *per*. The neurophysiological response and synaptic plasticity phenomena of a specified neuronal circuit (giant fiber pathway of adult flies) are changed in flies with no circadian rhythm behaviour.

Neurophysiological analysis of *D.melanogaster* genes mutations involving visual behaviour. Specific promoter regions of *NonA* are differently affecting optomotor behaviour and eye electrophysiological responses to light stimuli. N

Regulatory role upon neurotransmitter release, of MAGUK presynaptic protein *CASK*. Null mutation of *D.melanogaster caki*, homolog of human gene *CASK*, is associated to an increase in spontaneous synaptic release and a decrease in evoked synaptic release.

Postsynaptic NFκB and IκB mobilization related to synaptic activity. In this study it was demonstrated that: a) *D.melanogaster* NFκB and IκB are localized at the postsynaptic membrane of neuromuscular junction in third instar larvae; b) they are mobilized following high frequency synaptic activity.

Actual scientific activity

Morphological, neurophysiological and behavioural characterisation of null mutations or functional KDs (by RNAi) of *D.melanogaster* homologs of human genes linked to inherited mitochondrial encephalo(-myo)pathies. *Surf1* is

D.melanogaster homolog of the human gene linked to Leigh disease, the most common mitochondrial encephalomyopathy. Surf1 tissue selective functional silencing using RNAi and UAS/Gal4 binary system is associated to nervous system behavioural and functional alterations, as well as muscle functional and ultrastructural changes. DLETM1 is D.melanogaster homolog of human LETM1, which is linked to Wolf–Hirschorn syndrome, a disease associated to mental and growth retardation, malformations and epilepsy. Its tissue selective functional silencing using RNAi and UAS/Gal4 binary system, causes the appearance of behavioural, functional and morphological alterations at the level of nervous system and compound eye.

Functional role of membrane lipid composition in regulating neurotransmitter vesicle fusion with presynaptic membrane during exocytosis at the

D.melanogaster neuromuscular junction. Artificial (adding artificial lipids to the experimental bath) or genetical (using null mutants for key enzymes of sphingolipid metabolic pathway) alterations of synaptic membranes lipid composition are associated to an increase or a decrease in vesicle release, according to the energetic profile favouring or interfering the biophysical fusion between vesicle and presynaptic membrane.

Analysis of SNARE complexes aggregation in mediating synaptic vesicle exocytosis at the D.melanogaster neuromuscular junction. Point mutation of SNAP25 residue involved in SNARE complexes aggregation into a rosette supercomplex around the fusion point of synaptic vesicle with presynaptic membrane, is associated to a decreased spontaneous and evoked synaptic release.

Evolutionarily maintenance of complex basic behaviors: Cognitive, computational modelling and neurophysiological study of social interaction, decision-making and action selection. Using *D.melanogaster* powerful genetics and the possibility to combine this with sophisticated neurophysiological and behavioral techniques, we want to exploit if similar adaptive behavioral responses in both vertebrates and invertebrates are processed by similar neuronal circuits as preliminary experimental data seem to suggest.

Recently submitted

Mechanisms of selection for the control of action in *Drosophila melanogaster*

Peer reviewed Publications since 2000

Negro S, Lessi F, Duregotti E, Aretini P, La Ferla M, Franceschi S, Menicagli M, Bergamin E, Radice E, Thelen M, Megighian A, Pirazzini M, Mazzanti CM, Rigoni M, Montecucco C. CXCL12 α /SDF-1 from perisynaptic Schwann cells promotes regeneration of injured motor axon terminals. *EMBO Mol Med*. 2017 Aug;9(8):1000-1010. doi: 10.15252/emmm.201607257. PubMed PMID: 28559442; PubMed

Central PMCID: PMC5538331.

Zornetta I, Scorzeto M, Mendes Dos Reis PV, De Lima ME, Montecucco C, Megighian A, Rossetto O. Electrophysiological Characterization of the Antarease Metalloprotease from *Tityus serrulatus* Venom. *Toxins* (Basel) 9. pii: E81. doi: 10.3390/toxins9030081. PubMed PMID: 28264432; PubMed Central PMCID: PMC5371836.

Duregotti E, Zanetti G, Scorzeto M, Megighian A, Montecucco C, Pirazzini M, Rigoni M. Snake and Spider Toxins induce a Rapid Recovery of Function of Botulinum Neurotoxin paralysed Neuromuscular junction. *Toxins* (Basel) 7:5322-5336, 2015

Romano G, Appocher C, Scorzeto M, Klima R, Baralle FE, Megighian A, Feiguin F. Glial TDP-43 Regulates Axon Wrapping, GluRIIA Clustering and Fly Motility by Autonomous and Non-Autonomous Mechanisms. *Hum Mol Genet.* 2015 Aug 13. pii: ddv330. [Epub ahead of print] PubMed PMID: 26276811.

Massimino ML, Peggion C, Loro F, Stella R, Megighian A, Scorzeto M, Blaauw B, Toniolo L, Sorgato MC, Reggiani C, Bertoli A. Age-dependent neuromuscular impairment in prion protein knock-out mice. *Muscle Nerve.* 2015 May 20. doi: 10.1002/mus.24708. [Epub ahead of print] PubMed PMID: 25989742.

Caccin P, Scorzeto M, Damiano N, Marin O, Megighian A, Montecucco C. The synaptotagmin juxtamembrane domain is involved in neuroexocytosis. *FEBS Open Bio* 5:388-96, 2015.

Bosco G, Clamer M, Messulam E, Dare C, Yang Z, Zordan M, Reggiani C, Hu Q, Megighian A. Effects of oxygen concentration and pressure on *Drosophila melanogaster*: oxidative stress, mitochondrial activity, and survivorship. *Arch Insect Biochem Physiol.* 88:222-34, 2015.

Pirazzini M, Azarnia Tehran D, Zanetti G, Megighian A, Scorzeto M, Fillo S, Shone CC, Binz T, Rossetto O, Lista F, Montecucco C. Thioredoxin and its reductase are present on synaptic vesicles, and their inhibition prevents the paralysis induced by botulinum neurotoxins. *Cell Rep,* 8:1870-8, 2014.

Chen P, Cescon M, Megighian A, Bonaldo P. Collagen VI regulates peripheral

nerve myelination and function. *FASEB J.* 28:1145-56, 2014

Megighian A, Zordan M, Pantano S, Scorzeto M, Rigoni M, Zanini D, Rossetto O, Montecucco C. Evidence for a radial SNARE super-complex mediating neurotransmitter release at the *Drosophila* neuromuscular junction. *J Cell Sci.* 126:3134-40, 2013.

Rossetto O, Megighian A, Scorzeto M, Montecucco C. Botulinum neurotoxins. *Toxicon.* 67:31-6, 2013

Rossetto O, Scorzeto M, Megighian A, Montecucco C. Tetanus neurotoxin. *Toxicon.* 66:59-63, 2013

Bortoloso E, Megighian A, Furlan S, Gorza L, Volpe P. Homer 2 antagonizes protein degradation in slow-twitch skeletal muscles. *Am J Physiol Cell Physiol.* 304: C68-77, 2013.

Rossetto MG, Zanarella E, Orso G, Scorzeto M, Megighian A, Kumar V, Delgado-Escueta AV, Daga A. Defhc1.1, a homologue of the juvenile myoclonic gene EFHC1, modulates architecture and basal activity of the neuromuscular junction in *Drosophila*. *Hum Mol Genet.* 20: 4248-57, 2011.

Megighian A, Scorzeto M, Zanini D, Pantano S, Rigoni M, Benna C, Rossetto O, Montecucco C, Zordan M. Arg206 of SNAP-25 is essential for neuroexocytosis at the *Drosophila melanogaster* neuromuscular junction. *J Cell Sci.* 123: 3276-83, 2010.

Canato M, Dal Maschio M, Sbrana F, Raiteri R, Reggiani C, Vassanelli S, Megighian A. Mechanical and electrophysiological properties of the sarcolemma of muscle fibers in two murine models of muscle dystrophy: col6a1-/- and mdx. *J Biomed Biotechnol.*, 2010: 981-945, 2010

McQuibban AG, Joza N, Megighian A, Scorzeto M, Zanini D, Reipert S, Richter C, Schweyen RJ, Nowikovsky K. A *Drosophila* mutant of LETM1, a candidate gene for seizures in Wolf-Hirschhorn syndrome. *Hum Mol Genet.*, 19: 987-1000, 2010.

Benna C, Peron S, Rizzo G, Faulkner G, Megighian A, Perini G, Tognon G, Valle G, Reggiani C, Costa R, Zordan MA. Post-transcriptional silencing of the *Drosophila* homolog of human ZASP: a molecular and functional analysis. *Cell Tissue Res.* 337: 463-76, 2009

Peron S, Zordan MA, Magnabosco A, Reggiani C, Megighian A. From action potential to contraction: neural control and excitation-contraction coupling in larval muscles of *Drosophila*. *Comp Biochem Physiol A Mol Integr Physiol.* 154: 173-83, 2009.

Suggs JA, Cammarato A, Kronert WA, Nikkhoy M, Dambacher CM, Megighian A, Bernstein SI. Alternative S2 hinge regions of the myosin rod differentially affect muscle function, myofibril dimensions and myosin tail length. *J Mol Biol* 367:1312-29, 2007

Megighian A, Rigoni M, Caccin P, Zordan MA, Montecuccio C. A lysolecithin/fatty acid mixture promotes and then blocks neurotransmitter release at the *Drosophila melanogaster* larval neuromuscular junction. *Neurosci Lett.* 416: 6-11, 2007

Raffaello A, Laveder P, Romualdi C, Bean C, Toniolo L, Germinario E, Megighian A, Danieli-Betto D, Reggiani C, Lanfranchi G. Denervation in murine fast-twitch muscle: short-term physiological changes and temporal expression profiling. *Physiol Genomics.* 25: 60-74, 2006

Bortoloso E, Pilati N, Megighian A, Tibaldo E, Sandonà D, Volpe P. Transition of Homer isoforms during skeletal muscle regeneration. *Am J Physiol Cell Physiol* 290:C711-8, 2006.

Zordan MA, Cisotto P, Benna C, Agostino A, Rizzo G, Piccin A, Pegoraro M, Sandrelli F, Perini G, Tognon G, De Caro R, Peron S, Kronniè TT, Megighian A, Reggiani C, Zeviani M, Costa R. Post-transcriptional silencing and functional characterization of the *Drosophila melanogaster* homolog of human Surf1. *Genetics* 172:229-41, 2006

Beramendi A, Peron S, Megighian A, Reggiani C, Cantera R. The inhibitor kappaB-ortholog Cactus is necessary for normal neuromuscular function in *Drosophila melanogaster*. *Neuroscience.*134:397-406, 2005.

Zordan MA, Massironi M, Ducato MG, Te Kronnie G, Costa R, Reggiani C, Chagneau C, Martin JR, Megighian A. *Drosophila* CAKI/CMG protein, a homolog of human CASK, is essential for regulation of neurotransmitter vesicle release. *J Neurophysiol.* 94:1074-83, 2005.

Danieli-Betto D, Germinario E, Esposito A, Megighian A, Midrio M, Ravara B, Damiani E, Libera LD, Sabbadini RA, Betto R. Sphingosine 1-phosphate protects mouse extensor digitorum longus skeletal muscle during fatigue. *Am J Physiol Cell Physiol.* 288:C1367-73, 2005.

Germinario E, Esposito A, Megighian A, Midrio M, Betto R, Danieli-Betto D. Effects of modulators of sarcoplasmic Ca²⁺ release on the development of skeletal

muscle fatigue. *J Appl Physiol*. 96:645-9, 2004.

Irwin WA, Bergamin N, Sabatelli P, Reggiani C, Megighian A, Merlini L, Braghetta P, Columbaro M, Volpin D, Bressan GM, Bernardi P, Bonaldo P. Mitochondrial dysfunction and apoptosis in myopathic mice with collagen VI deficiency. *Nat Genet*. 35:367-71, 2003.

Bolatto C, Chifflet S, Megighian A, Cantera R. Synaptic activity modifies the levels of Dorsal and Cactus at the neuromuscular junction of *Drosophila*. *J Neurobiol*. 54:525-36, 2003.

D'Antona G, Megighian A, Bortolotto S, Pellegrino MA, Marchese-Ragona R, Staffieri A, Bottinelli R, Reggiani C. Contractile properties and myosin heavy chain isoform composition in single fibre of human laryngeal muscles. *J Muscle Res Cell Motil*. 23:187-95, 2002.

Megighian A, Zordan M, Costa R. Giant neuron pathway neurophysiological activity in *per(0)* mutants of *Drosophila melanogaster*. *J Neurogenet*. 15:221-31, 2001.

Germinario E, Esposito A, Megighian A, Midrio M, Biral D, Betto R, Danieli-Betto D. Early changes of type 2B fibers after denervation of rat EDL skeletal muscle. *J Appl Physiol* 92:2045-52, 2002.

Sandrelli F, Campesan S, Rossetto M, Benna C, Zieger E, Megighian A, Couchman M, Kyriacou C, Costa R. Molecular Dissection of the 5' Region of non-on-transientA of *Drosophila melanogaster* Reveals cis-Regulation by Adjacent dGpi1 Sequences. *Genetics*. 157:765-75, 2001.

Campesan S, Chalmers D, Sandrelli F, Megighian A, Peixoto AA, Costa R, Kyriacou CP. Comparative analysis of the nonA region in *Drosophila* identifies a highly diverged 5' gene that may constrain nonA promoter evolution. *Genetics*. 157:751-64, 2001.

Megighian A, Germinario E, Rossini K, Midrio M, Danieli-Betto D. Nerve control of type 2A MHC isoform expression in regenerating slow skeletal muscle. *Muscle Nerve*. 24:47-53, 2001.

Top peer-reviewed publications

1. Irwin WA, Bergamin N, Sabatelli P, Reggiani C, Megighian A, Merlini L, Braghetta P, Columbaro M, Volpin D, Bressan GM, Bernardi P, Bonaldo P. Mitochondrial dysfunction and apoptosis in myopathic mice with collagen VI deficiency. *Nat Genet.* 35: 367–71, 2003
2. Megighian A, Zordan M, Pantano S, Scorzeto M, Rigoni M, Zanini D, Rossetto O, Montecucco C. Evidence for a radial SNARE super-complex mediating neurotransmitter release at the *Drosophila* neuromuscular junction. *J Cell Sci.* 126:3134-40, 2013.
3. Megighian A, Scorzeto M, Zanini D, Pantano S, Rigoni M, Benna C, Rossetto O, Montecucco C, Zordan M. Arg206 of SNAP–25 is essential for neuroexocytosis at the *Drosophila melanogaster* neuromuscular junction. *J Cell Sci.* 123: 3276–83, 2010
4. Chen P, Cescon M, Megighian A, Bonaldo P. Collagen VI regulates peripheral nerve myelination and function. *FASEB J.* 28:1145-56, 2014
5. Zordan MA, Massironi M, Ducato MG, Te Kronnie G, Costa R, Reggiani C, Chagneau C, Martin JR, Megighian A. *Drosophila* CAKI/CMG protein, a homolog of human CASK, is essential for regulation of neurotransmitter vesicle release. *J Neurophysiol.* 94: 1074–83, 2005
6. Suggs JA, Cammarato A, Kronert WA, Nikkhoy M, Dambacher CM, Megighian A, Bernstein SI. Alternative S2 hinge regions of the myosin rod differentially affect muscle function, myofibril dimensions and myosin tail length. *J Mol Biol.* 367: 1312–29, 2007.
7. McQuibban AG, Joza N, Megighian A, Scorzeto M, Zanini D, Reipert S, Richter C, Schweyen RJ, Nowikovsky K. A *Drosophila* mutant of LETM1, a candidate gene for seizures in Wolf–Hirschhorn syndrome. *Hum Mol Genet.*; 19: 987–1000, 2009.
8. Rossetto MG, Zanarella E, Orso G, Scorzeto M, Megighian A, Kumar V, Delgado-Escueta AV, Daga A. Defhc1.1, a homologue of the juvenile myoclonic gene EFHC1, modulates architecture and basal activity of the neuromuscular junction in *Drosophila*. *Hum Mol Genet.* 20: 4248-57, 2011.