

**PERSONAL
INFORMATION**

Name
 Birthdate
 Birthplace
 Nationality
 Languages

Perin, Paola
 May 12th, 1970
 Viadana (MN), ITALY
 Italian
 Italian, English

**CURRENT
POSITION**

Assistant Professor of Physiology, Dept. Brain and Behavioral Sciences, University of Pavia.
 PI of Sensory Encoding Lab.
 Co-PI Neuroimmunology Lab (Dept. of Molecular Medicine, University of Pavia – PI Prof. Roberto Pizzala)

EDUCATION

Dates (from-to)
 Organization
 Subject

1988-1992
 University of Pavia
 M.Sc. in Biology (summa cum laude)

Dates (from-to)
 Organization
 Subject

1992-1996
 Joint Universities ("Consorzio") of Pavia, Milan, Genoa, Turin
 Ph.D. in Physiological Sciences

**WORK
EXPERIENCE**

Dates (from-to)

June-December 1993
 Predoctoral fellowship from the University of Pavia for lab work at Baylor College of Medicine (Houston, TX), PI: Prof. Arthur M. Brown

January-July 1994
 Research Associate, Baylor College of Medicine, Houston (TX)

1997-1998
 Postdoctoral Fellow, Dept. Pharmacology, Tulane University, New Orleans (LA). PI: Prof. Paul S. Guth

1998-current
 Assistant Professor in Physiology, Faculty of Pharmacy, University of Pavia

July-September 1999
 Research Associate, Wayne State University, Detroit (MI). PI: Prof. Dennis G. Drescher

July 2003- February 2005

Research Associate,
University of
Chicago, Chicago
(IL). PI: Prof. Jay M.
Goldberg

HUNIMED

PROFESSIONAL MEMBERSHIPS

Other

Scientific societies:

DISSEMINATION

Charities:

AINI (Associazione Italiana di Neuroimmunologia)
OCNS (Organization for Computational Neuroscience)
ARO (Association for Research in Otolaryngology)
Society for Neuroscience

Other:

AIT (Associazione Italiana Tinnitus- Scientific Advisor)
AU-TU (Acufene Uniti – Tinnitus United- Founding member)
EUTI

EDITORIAL ACTIVITY

Journals:

COST TINNET (2014-2018)

Current:

Review Editor for Neuro-Otology and for Auditory Cognitive Neuroscience.

Topic Editor for Brain Sciences

Member of the Scientific Committee of the journal "Argomenti di Otolaringoiatria Moderna"

Reviewer for: Frontiers in Cellular Neuroscience, Frontiers in Immunology, Frontiers in Neuroanatomy, BMC Neuroscience, Journal of Physiology, Trends in Hearing, JoVE.

2019-20

Editor for the Frontiers Special Topic: "Neuroimmunology of the inner ear"

2021

Editor for the Brain Sciences Special Topic: "'Biomarkers in neurotology'"

Textbooks:

Co-author in the following textbooks:

2010 - Fisiologia: molecole, cellule e sistemi (D'Angelo, Peres), EdiErmes

2013- Cellule, tessuti, sistemi (Zaccheo, Pestarino), Pearson

TEACHING ACTIVITY

University of Pavia

2020/21-current

General Pathology and Pathophysiology (5CFU, CTF)

2008/09-current

Anatomy and Cell
Physiology (9 CFU,
L.M. Pharmacy)
2010/11-current
Sensory Physiology
and Analysis (3CFU,
L.M. Pharmacy/CTF)
2008/09-2015/16
Physiology of
Sensory Receptors
(3CFU,
Neurobiology)
2003/04-2007/08
Ion Channel
Biophysics (2CFU,
Pharmacy/CTF)
2014/15-16/17
Human Physiology
(Nursing School)

2015-current
Lecturer for the topic
“Mechanisms of
tinnitus onset” in
several Continuing
Medical Education
courses

SCIENTIFIC EXPERTISE

SCIENTIFIC INTERESTS

Speaker at several open meetings for tinnitus patients
sponsored by AIT/AU-TU
Host and speaker at Tinnitus Week initiatives for Italy

Histology

Anatomy and histology of the nervous system and inner ear;
Immunofluorescence;
Cryoslicing;
iDISCO;
Temporal bone imaging;
Stereology;
Image analysis (FIJI, ITK-SNAP, MATLAB);
Lightsheet microscopy;
Confocal microscopy

Computational neuroscience:

Neuronal modeling with NEURON;
Dynamic analysis of complex systems;
MATLAB;
Python

Electrophysiology:

Whole-cell patch clamp (ruptured and perforated);
Capacitance measurements;
Oocyte recording;
Stimulation and recording from peripheral vestibular organs;
Brain and sensory organ slices;
Rodent ABR

Other

Ca²⁺-imaging;
RT-PCR
Hearing and Tinnitus behavioural testing

My scientific interest has been focused on signal transmission in sensory systems, and in particular signal encoding and synaptic transmission in the auditory and vestibular system.

For the first part of my career, I mainly studied signal processing by vestibular hair cells, especially as regards the influence of ion channels and Ca²⁺ on response dynamics. Subsequently, my main research topic shifted to the central vestibular and auditory system, and in particular neuroimmune interactions affecting it in health and pathology. Currently I am on a pretty

interesting detour following the ins and outs of brain macrophages in the choroid plexus, and where they move upon neuroinflammation. The main question I would like to solve is what are the signals that say that a neural activity pattern is “wrong” in the auditory system and trigger plastic changes (helpful or maladaptive) in the neuronal circuits. Answering this question will help treating disorders such as tinnitus, where maladaptive plasticity appears to be key.

GRANTS

COLLABORATIONS

2008-current

Donations from AIT Onlus (PI: Prof. Paola Perin, 5000-15000 EUR-yr)

2018

Internal Research funding from the Dept. of Molecular Medicine (PI: Prof. Roberto Pizzala, 16000 EUR)

2017

Universitiamo crowdfunding campaign (PI: Prof. Paola Perin, 17000 EUR)

2011

Miroglia grant for the project "Study of afferent transmission in vestibular organs" (PI: Prof. Paola Perin, 10000 EUR)

2005-2008

MURST Cofinancing extension:
"Processes determining the sensory discharge dynamics in

semicircular canals". PI Prof. Paola Perin
2002-2007

NIH R01 Grant: "Cellular mechanisms of the vestibular system":
PI: Prof. J. Goldberg

2002-2004

MURST Project: "Presynaptic modulation of transmitter release at the hair cell afferent synapse". PI: Prof. P. Valli

Fritjof Helmchen, Philipp Bethge, Fabian Voigt, University of Zurich

Arnaud Norena, CNRS Marseille

Paolo Enrico, Università di Sassari

Marco Cosentino, Università dell'Insubria, Varese

Alberto Eibenstein, Alessandra Fioretti, Tinnitus Center, Roma

Giovanni Naldi, Paola Causin, UniMI

Stefania Barozzi, UniMI

Agnieszka Szczeppek, Charité Hospital, Berlin

Cinzia Boselli, Unipv

Laura Batti, Wyss Center, Geneva

PUBLICATIONS

Full papers

1. Perin P, Marino F, Varela-Nieto I, Szczeppek AJ. Editorial: Neuroimmunology of the Inner Ear. *Front Neurol.* 2021 Feb 9;12:635359. doi: 10.3389/fneur.2021.635359.
2. Perin P, Mabou Tagne A, Enrico P, Marino F, Cosentino M, Pizzala R, Boselli C. Cannabinoids, inner ear, hearing and tinnitus: a neuroimmunological perspective. *Front. Neurol.* 11:505995 doi:10.3389/fneur.2020.505995

3. Barozzi S, Soi D, Intieri E, Giani M, Aldè M, Tonon E, Signorini L, Renieri A, Fallerini C, Perin P, Montini G, Ambrosetti U. Vestibular and audiological findings in the Alport syndrome. *Am J Med Genet A*. 2020 Aug 20. doi: 10.1002/ajmg.a.61796.
4. Voigt FF, Kirschenbaum D, Platonova E, Pagès S, Campbell RAA, Kastli R, Schaettin M, Egolf L, van der Bourg A, Bethge P, Haenraets K, Frézel N, Topilko T, Perin P, Hillier D, Hildebrand S, Schueth A, Roebroek A, Roska B, Stoeckli ET, Pizzala R, Renier N, Zeilhofer HU, Karayannis T, Ziegler U, Batti L, Holtmaat A, Lüscher C, Aguzzi A, Helmchen F. The mesoSPIM initiative: open-source light-sheet microscopes for imaging cleared tissue. *Nat Methods*. 2019 Sep 16. doi: 10.1038/s41592-019-0554-0.
5. Perin P, Voigt F.F., Bethge P., Helmchen F., Pizzala R. (2019) iDISCO+ for the study of neuroimmune architecture of the rat auditory brainstem. *Front. Neuroanat*. 13:15. doi: 10.3389/fnana.2019.00015
6. Gallus S, Lugo A, Garavello W, Bosetti C, Santoro E, Colombo P, Perin P, La Vecchia C, Langguth B. Prevalence and Determinants of Tinnitus in the Italian Adult Population. *Neuroepidemiology*. 2015;45(1):12-9. doi: 10.1159/000431376.
7. Venturino A, Oda A, Perin P. Hair cell-type dependent expression of basolateral ion channels shapes response dynamics in the frog utricle. *Front Cell Neurosci*. 2015 Sep 7;9:338.
8. Subramaniam S, Solinas S, Perin P, Locatelli F, Masetto S, D'Angelo E. Computational modeling predicts the ionic mechanism of late-onset responses in unipolar brush cells. *Front Cell Neurosci*. 2014 Aug 20;8:237.
9. Perin P, Botta L, Tritto S, Laforenza U (2012). Expression and localization of ryanodine receptors in the frog semicircular canal, *J Biomed Biotechnol*. vol. 2012, Article ID 398398, 6 pages, 2012. doi:10.1155/2012/398398.
10. Andreescu CE, Prestori F, Brandalise F, D'Errico A, De Jeu MT, Rossi P, Botta L, Kohr G, Perin P, D'Angelo E, De Zeeuw CI (2011) NR2A subunit of the N-methyl D-aspartate receptors are required for potentiation at the mossy fiber to granule cell synapse and vestibulo-cerebellar motor learning. *Neuroscience*;176:274-83.
11. Nigro MJ, Perin P, Magistretti J (2011) Differential effects of Zn²⁺ on activation, deactivation, and inactivation kinetics in neuronal voltage-gated Na⁺ channels. *Pflugers Arch*. 2011 Aug;462(2):331-47.
12. Perin P, Caldirola E, Cofrancesco P, Marini A (2011) Monitoring academic progress in a Faculty of Pharmacy, *Je-LKS*, v.7, n.1, 31-40.
13. Perin P, Tritto S, Botta L, Fontana JM, Gastaldi G, Masetto S, Tosco M, Laforenza U (2010) Aquaporin-6 expression in the cochlear sensory epithelium is downregulated by salicylates. *J Biomed Biotechnol*. Epub 2010 Jan 12.
14. Perin P, Lucchelli A (2010) I farmaci ototossici. *Tema Farmacia Anno XXVIII*, n.5, maggio 2010
15. Botta L, Tritto S, Perin P, Laforenza U, Gastaldi G, Zampini V, Zucca G, Valli S, Masetto S, Valli P. (2008). Histamine H1 receptors are expressed in mouse and frog semicircular canal sensory epithelia. *Neuroreport* 19; p. 425-429.
16. Catacuzzeno L, Fioretti B, Perin P, Franciolini F (2004). Spontaneous low-frequency voltage oscillations in frog saccular hair cells. *J Physiol* vol. 561, pp. 685-701.

17. Catacuzzeno L, Fioretti B, Perin P, Franciolini F (2003). Frog saccular hair cells dissociated with protease VIII exhibit inactivating BK currents, K(V) currents, and low-frequency electrical resonance. *Hearing res.* vol. 175, pp. 36-44.
18. Lelli A, Perin P, Martini M, Ciubotaru CD, Prigioni I, Valli P, Rossi ML, Mammano F (2003). Presynaptic calcium stores modulate afferent release in vestibular hair cells. *J Neurosci.* vol. 23, pp. 6894-6903.
19. Masetto S, Bosica M, Correia MJ, Ottersen OP, Zucca G, Perin P, Valli P. (2003). Na⁺ currents in vestibular type I and type II hair cells of the embryo and adult chicken. *J Neurophysiol* vol. 90, pp. 1266-1278.
20. Ramahrishnan NA, Green GE, Pasha R, Drescher MJ, Swanson GS, Perin P, Lakhani RS, Ahsan SF, Hatfield JS, Khan KM, Drescher DG. (2002). Voltage-gated Ca²⁺ channel Cav1.3 subunit expressed in the hair-cell epithelium of the sacculus of the trout *Oncorhynchus mykiss*: cloning and comparison across vertebrate classes. *Mol Brain Res.* vol. 109, pp. 69-83.
21. Botta L, Valli P, Asti A, Perin P, Zucca G., Racchi M., Govoni S., Pascale A. (2001). beta amyloid-induced disruption of ionic balance: studies on the isolated frog labyrinth. *NEUROREPORT.* vol. 12, pp. 2493-2497.
22. Holt JC, Lioudyno M, Athas G, Garcia MM, Perin P, Guth PS (2001). The effect of proteolytic enzymes on the alpha9-nicotinic receptor-mediated response in isolated frog vestibular hair cells. *Hearing Res.* vol. 152, pp. 25-42.
23. Perin P., Masetto S., Martini M, Rossi ML, Rubbini G, Rispoli G, Guth PS, Zucca G, Valli P (2001). Regional distribution of calcium currents in frog semicircular canal hair cells. *Hearing Res.* vol. 152, pp. 67-76.
24. Botta L, Mira E, Valli S, Zucca G, Perin P, Benvenuti C, Fossati A, Valli P (2000). Effects of betahistine metabolites on frog ampullar receptors. *Acta Otolaryngol.* vol. 120, pp. 25-27.
25. Masetto S, Perin P, Malusà A, Valli P (2000). Membrane properties of chick semicircular canal hair cells in situ during embryonic development. *J Neurophysiol.* vol. 83, pp. 2740-2756.
26. Zucca G, Botta L, Valli S, Giannoni B, Mira E, Perin P, Buizza A, Valli P (1999). Effects of caloric stimuli on frog ampullar receptors. *Hearing Res.* vol. 37, pp. 8-14.
27. Zucca G, Botta L, Valli S, Giannoni B, Mira E, Perin P, Valli P (1999). Caloric stimulation of ampullar receptors: a new method to produce mechanically-evoked responses in frog semicircular canals. *J Neurosci Meth.* vol. 88, pp. 141-151.
28. Perin P, Soto E, Vega R, Botta L, Masetto S, Zucca G, Valli P (2000). Calcium channels functional roles in the frog semicircular canal. *Neuroreport* vol. 11, pp. 417-420.
29. Botta L, Mira E, Valli S, Perin P, Zucca G, Valli P (1998). Effects of Betahistine on vestibular receptors of the frog. *Acta Otolaryngol.* vol. 118, pp. 519-523.
30. Guth PS, Holt JC, Perin P, Athas G, Garcia M, Puri A, Zucca G, Botta L, Valli P (1998). The metabotropic glutamate receptors of the vestibular organs. *Hearing Res.* vol. 125, pp. 154-162.
31. Guth PS, Perin P, Norris CH, Valli P (1998). The vestibular hair cell: post-transductional signal processing. *Prog Neurobiol.* vol. 54, pp. 193-247.
32. Norris CH, Miller AJ, Perin P, Holt JC, Guth PS (1998). Mechanisms and effects of transepithelial polarization in the isolated semicircular canal. *Hearing Res.* vol. 123, pp. 31-40.

33. Zucca G, Valli S, Valli P, Perin P, Mira E (1998). Why do benign paroxysmal positional vertigo (BPPV) episodes recover spontaneously?. J Vestib Res. vol. 8, pp. 325-329.
34. Toselli M, Perin P, Taglietti V. (1995). Muscarine inhibits w-conotoxin-sensitive calcium channels in a voltage- and time-dependent mode in the human neuroblastoma cell line SH-SY5Y. J Neurophysiol. vol. 74, pp. 1730-1741.

Meeting presentations

1. Cossellu D, Ricci C, Rossetti R, Perin P, Pizzala R (2020) "Bone channels and inflammation routes in the rat auditory system " BraYn – 3rd Brainstorming Research Assembly for Young Neuroscientists November 25-26, 2020 (online) NI07
2. Ricci C, Rossetti R, Cossellu D, Cobianchi L, Dondi D, Perin P, Pizzala R (2020) "Tools for large specimen clearing: applying SOCRAT to the auditory system of small and large mammals " BraYn – 3rd Brainstorming Research Assembly for Young Neuroscientists November 25-26, 2020 (online) NI24
3. Rossetti R, Ricci C, Cossellu D, Perin P, Pizzala R (2020) "What does the microanatomy of the choroid plexus tell us on its function? " BraYn – 3rd Brainstorming Research Assembly for Young Neuroscientists November 25-26, 2020 (online) NI25
4. Perin P. (2019) Vascular districts in the intact 4th ventricle of the rat: do we have the whole picture on circumventricular organs? LSFM2019, December 4-6, Frankfurt
5. Perin P, Scarpa S, D'Onofrio S, Pizzala R (2019) "Vascular networks of rat choroid plexus and cochlear nucleus: do they communicate?" BraYn - 2nd Brainstorming Research Assembly for Young Neuroscientists November 14 - 16, 2019, Milano, Istituto Mario Negri
6. Barozzi S, Perin P, Ginocchio D. (2019) Possibile ruolo dei melanociti nei disturbi audio-vestibolari. XXXVII Congresso SIAF – November 6-9, Modena.
7. Perin P, Barcio V, D'Onofrio S, Scarpa S, Pizzala R. (2019) Vascular associations in the choroid plexus: do they matter for the auditory system?, 56th Workshop on Inner Ear Biology, September 7-10th, Padua.
8. Perin P, Barcio V, D'Onofrio S, Scarpa S, Pizzala R. (2019) Vascular network of the rat cochlear nuclei, 56th Workshop on Inner Ear Biology, September 7-10th, Padua.
9. Perin P. (2019) Acufeni e neuropatia, Cenacolo Italiano d Audiovestibologia, September 5-7th, Chieti
10. Perin P, 3D imaging and segmentation of the rat choroid plexus, Swiss Light-Sheet Microscopy Workshop, Zurich, 24-25 Apr 2019
11. Perin P, "Acufeni e plasticità sinaptica", 4° Update in vestibologia tra ricerca e clinica Arenzano (GE) 11 november 2018
12. Perin P, "Compensazione adattativa e patologica nelle vie acustiche centrali", VI Congresso Gruppo Campano ORL - Salerno, 15/17 november 2018
13. Perin P, Ceccarini M, Centineo A, Pizzala R. (2018) Choroid plexus association to the auditory system: observations in a clarified brainstem-inner ear preparation, 55th Workshop on Inner Ear Biology, September 6-8th, Berlin.

14. Perin P, Ceccarini M, Centineo A, Pizzala R. (2018) Segmentation and cell feature extraction in the clarified auditory system 55th Workshop on Inner Ear Biology, September 6-8th, Berlin.
15. Ceccarini M, Centineo A, Perin P, Pizzala R. (2018) Reconstruction of neuroimmune communication pathways between the cochlea and the 4th ventricle, XXVII AINI CONGRESS, May 8-11, Trieste.
16. Centineo A, Ceccarini M, Perin P, Pizzala R (2018) Stereological analysis of Iba1+ cells in clarified brain regions, XXVII AINI CONGRESS, May 8-11, Trieste.
17. Perin P, Ceccarini M, Centineo A, Pizzala R (2018) A clarified rat cochlea – brainstem preparation for the visualization of inflammation spread after ototoxic treatment, XXVII AINI CONGRESS, May 8-11, Trieste.
18. Perin P (2018), A clarified cochlea-auditory brainstem preparation for the visualization of inflammation spread after ototoxic treatment. Lightsheet microscopy workshop, March 19-20, Wyss Center, Geneva
19. Perin P, Venturino A, Ceccarini M, Centineo A, Pizzala R (2018), Neuroinflammatory responses in choroid plexus and dorsal cochlear nuclei after unilateral cochlear damage. TRI/TINNET Meeting, March 14-16, Regensburg
20. Perin P, Pizzala R (2017), Age-related changes in cochlear nuclei microglia and macrophages in the rat. 54th Workshop on Inner Ear Biology, September 13-16th, Hannover
21. Perin P, Venturino A, Pizzala R (2017) Choroid plexus trafficking of immune cells towards the rat cochlear nuclei after noise trauma or cochlear destruction XIII European Meeting on Glial Cells in Health and Disease July 8 –11th, Edimburgh
22. Venturino A; Colombo G; Sanchini G; Vitale V; Bertone V; Oda A; Pizzala R; Perin P. (2016) Does blocking microglial activation prevent tinnitus onset? Journal of Neuroimmune Pharmacology; 11:1, #16
23. Vitale V, Sanchini G, Solinas S, Pizzala R, Perin P (2016) Microglial subpopulations in rat DCN and their changes in tinnitus models Inner Ear Biology Workshop, September 17-21st, Montpellier
24. Perin P, Venturino A, Sanchini G, Vitale V, Pizzala R (2016) Microglial functional state modulation and tinnitus onset: comparison of different rat models. FENS Forum, July 5-9th, Copenhagen
25. Perin P, Venturino A, Solinas S, Bertone V, Pizzala R (2016) DCN microglia in rat tinnitus models: density, activation and possible roles. TRI/TINNET Meeting, March 15-18th, Nottingham (UK)
26. Perin P, Pizzala R, Oda A, Colombo G. Capetta A, Sanchini G, Vitale V, Venturino A (2015) Does blocking microglial activation prevent tinnitus onset? 52nd Workshop on Inner Ear Biology Workshop, August 30th-September 2nd, Rome
27. Perin P, Venturino A, Oda A, Capetta A, Colombo G, Sanchini G, Vitale V, Bertone V, Pizzala R. (2015) Microglia changes in rat dorsal cochlear nucleus correlate to behavioural tinnitus evidence. XII European Meeting on Glial Cells in Health and Disease, July 15–18th 2015, Bilbao
28. Venturino A, Rizza M, Pedrazzoli M, Perin P (2013). Trying hard not to listen: the evolution of information processing in vestibular hair cells. CNS meeting 2013, Paris.
29. Subramaniam S, Perin P, Solinas S, D'Angelo E (2013) The mechanisms of late-onset synaptic responses in a realistic model of Unipolar Brush Cells. CNS meeting 2013, Paris.

30. Venturino A, Barbaro S, Oda A, Boselli C, Ferraro D, Pizzala R, Perin P (2013). Microglia in the rat cochlear nuclei: a player in tinnitus-related circuit reorganization? TRI Meeting 2013, Valencia.
31. Perin P., Venturino A., Tritto S., Mansi R., Laforenza U (2012). Resonance and release shape afferent responses in the frog utricle. Fens forum 2012, Barcelona.
32. Subramaniam S, Perin P, Solinas S, D'Angelo E (2011) Modeling UBC intrinsic excitability BMC Neurosci. vol. 12, pp. 1-2.
33. Mansi R. Perin P.(2010) How Do Hair Cell Currents Shape Afferent Responses in the Frog Vestibular Organs? In: ARO Meeting. Anaheim CA
34. Perin P., Tritto S., Botta L., Laforenza U., Gastaldi G., Valli P. (2008). Salicylates Decrease AQP6 Expression in the Mouse Organ of Corti. In: ARO Abstracts 2008. Phoenix, AZ, 16-21 Feb 2008
35. Tritto S, Botta L, Laforenza U, Gastaldi G, Valli P, Perin P. (2008). Salicylates decrease AQP6 expression in the mouse organ of Corti. In: 45th Inner Ear Biology Workshop. Ferrara, 21 - 24 settembre 2008
36. Tritto S, Botta L, Laforenza U, Gastaldi G, Perin P. (2007). Localization of calcium stores in the frog labyrinth. In: Segnali di Calcio in Piemonte. Novara
37. Perin P., D'Angelo E (2006) Electrotonic analysis of UBCs. In The node and the network, Pavia
38. Perin P., Pascale A, Amadio M, Botta L, Valli P (2004). Voltage-dependent and store-mediated Ca²⁺ sources in frog vestibular hair cells. In: ARO meeting. Daytona Beach FL
39. Perin P. (2003). Calcium channels and exocytosis in frog vestibular hair cells. In: Vestibular Pharmacology Symposium, Neuroscience Meeting. New Orleans.
40. Perin P., Pascale A, Pace J, Valli P (2002). Presynaptic Ca channels in frog canal hair cells. In: Barany Satellite Meeting. Orcas Island
41. Perin P., Masetto S, Valli P (2002). Differential expression of voltage-dependent currents by hair cells from the frog utricle and canal. In: ARO Meeting. St. Petersburg FL
42. Perin P., Masetto S, Zucca G, Valli P (2001). Sodium currents in spherical hair cells from the frog utricle and lagena. In: ARO Meeting. St Petersburg FL
43. Perin P., Masetto S, Zucca G, Valli P (2001). Current expression patterns in hair cells from the frog utricle. In: Symposium: "Signal transduction in the auditory system". Goettingen, Germany
44. Masetto S, Malusà, Perin P., Zucca G, Valli P (2001). Depolarization-activated inward currents in type II hair cells of the chick semicircular canal during embryonic development. In: ARO Meeting. St. Petersburg FL
45. Ramakrishnan N.A, Swanson G.J, Perin P., Pasha R, Myers S.F, Drescher D.G (2001). Functional analysis of an N-type, alpha-1B calcium channel coding sequence from the vestibular hair-cell layer of the trout sacculus. In: ARO Meeting. St. Petersburg FL
46. Perin P., Soto E, Botta L, Masetto S, Zucca G., Valli P (2000). Functional roles of voltage-operated calcium channels in the frog semicircular canal. In: ARO Meeting. St. Petersburg FL
47. Perin P., Masetto S, Valli P (1999). Voltage-operated calcium channels in frog vestibular hair cells. In: SIF meeting. Rome

48. Perin P., Masetto S, Valli P, Guth P.S (1999). Regional distribution of voltage-operated calcium channels in the frog vestibular organs. In: ARO Meeting. St. Petersburg FL
49. Guth P.S, Zucca G, Botta L, Perin P., Holt J.C, Puri A, Valli P (1998). The pharmacology of the metabotropic glutamate receptor of frog semicircular canal. In: ARO Meeting,. St. Petersburg FL
50. Masetto S, Perin P., Malusà, Zucca G, Valli P (1998). Development of basolateral potassium currents in semicircular canal hair cells of the chick embryo. In: Pfluegers Arch., vol. 435, p. R9
51. Guth P.S, Perin P., Norris C.H, Puri A, Botta L, Zucca G, Valli P (1997). mGluR-mediated facilitation of the hair cell-afferent synapse in frog semicircular canal (Neuroscience Meeting, New Orleans, abstr. 888.14).
52. Norris, C.H., Perin P., Miller A (1997). Responses to endolymphatic polarization in the isolated semicircular canal. In: 34th workshop on inner ear biology, Rosa Marina, ITALY
53. Mira E, Valli S, Masetto S, Perin P., Valli P (1996). Ion mechanisms involved in receptor current flow in vestibular hair cells. In: Barany Society Meeting. Sydney
54. Masetto S, Perin P., Botta L, Zucca G, Valli P (1996). Ion channels involved in frog vestibular sensory adaptation. In: Gordon Research Conference. New London, New Hampshire

Continuing Medical Education and Higher Education Courses

1. Organizer of the course: "Acufeni: teoria e clinica." Related to the Tinnitus Awareness Week, Pavia, February 8th, 2020
2. Lecture "Teorie neurofisiologiche dell'acufene" in the course: "Acufeni: teoria e clinica." Related to the Tinnitus Awareness Week, Pavia, February 8th, 2020
3. Invited Lecture "Quantifying shape in complex cells" in the NEURON School (Alghero, Italy) May 2019
4. Invited Lecture "Quantifying shape in complex cells" in the NEURON School (Alghero, Italy) April 2018
5. Invited Lecture: "Compensazione adattativa e patologica nelle vie acustiche centrali" – nel corso ECM RINOPATIE VASOMOTORIE E ACUFENI: STATO DELL'ARTE, Gasperina (CZ) October 10th, 2019
6. Invited Lecture: "Compensazione adattativa e patologica nelle vie acustiche centrali" – nel VI Congresso NAZIONALE G.C.ORL "Nuove evidenze, orientamenti e strategie delle patologie ORL più comuni", Salerno, 15/16/17 novembre 2018
7. Invited Lecture: "Acufeni e plasticità sinaptica" – nel corso ECM - 4° UPDATE IN VESTIBOLOGIA TRA RICERCA E CLINICA - Arenzano (GE), 10 Novembre 2018
8. Invited Lecture: "Basi fisiopatologiche dell'acufene" – in CME course "XXV Anni del Corso di Laurea in tecniche audioprotesiche - Novità cliniche e tecnologiche in ambito audioprotesico" - Rome, Università degli studi Tor Vergata, November 10-11 2017
9. Invited Lecture: "Acufene e vertigini: novità nella ricerca in neuroscienze" – in CME course "Aggiornamento su acufeni e vertigini" – Organized by Dott. Vincenzo Marcelli – Naples, March 4th, 2017

10. Invited Lecture: “Acufene e vertigini: novità nella ricerca in neuroscienze” – in CME course “Acufeni e vertigini: corso teorico-pratico” – Organized by Prof. Alberto Eibenstein – Rome October 8th, 2016
11. Invited Lecture: “Acufene: novità nella ricerca in neuroscienze” – in CME course “Acufeni: esperienze multidisciplinari nell'ambito del progetto europeo COST TINNET” – Organized by Prof. Alberto Eibenstein – Rome 26th February, 2016
12. Invited Lecture: “Acufene: novità nella ricerca in neuroscienze” in Master course “La riabilitazione audiologica nel bambino e nell’anziano: la gestione delle complessità” – Organized by Prof. Alessandro Martini – Padua December 12th, 2015
13. Invited Lecture: “Acufene: novità nella ricerca in neuroscienze” – in CME course “Acufeni e disturbi dell’udito: aspetti multidisciplinari nell’ambito del progetto europeo COST TINNET e presentazione casi clinici” – Organized by Prof. Alberto Eibenstein – Rome, October 3rd 2015

FURTHER INFORMATION ON THE WEB

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