CURRICULUM VITAE

INFORMAZIONI PERSONALI

Nome		**RUSSO Giancarlo**
Anno di nascita		
Qualifica		**Researcher**
Amministrazione		**University of Pavia**
Incarico attuale		**Researcher at the Department of Brain and Behavioral Sciences – Unity of Neurophysiolgy**
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TITOLI DI STUDIO E PROFESSIONALI ED ESPERIENZE LAVORATIVE

Titolo di studio (anno di conseguimento; nome e tipo di istituto di istruzione o formazione)		**December, 1983: He graduates with full marks and honours in Biological Sciences at the University of Pavia.**
Altri titoli di studio e professionali		**January 1986: He begins a PhD program in Physiological Sciences.** **June 1989: He obtains the PhD in Physiological Sciences 27 giugno 1989 – Consegue il titolo di Dottore di Ricerca in Scienze Fisiologiche.**
Esperienze professionali (incarichi ricoperti; data; tipo di azienda o settore; principali mansioni o responsabilità)		**December 1988: He wins the open competitive exam for Collaboratore Tecnico at the Institute of General Physiology (now Dept. of Brain and Behavioral Sciences) of the University of Pavia.** **April – July 1996: He works with Prof. Åke Flock at the Dept. of Physiology and Pharmacology of the Karolinska Insitutet of Stockholm (Sweden).** **February 1998: He is appointed as Funzionario Tecnico – VIII livello at the University of Pavia.** **January 2001: He wins the open competitive exam for Researcher, discipline – General Physiology, at the University of Pavia.**

Capacità linguistiche		**English (spoken and written)**
Capacità nell'uso delle tecnologie		**Practical skill in microcsurgery for the inner ear organs isolation from anphibians, reptiles and mammals.** **Use of vibroslicer for the preparation of vestibular organs thin slices.** **Ability to use electrophysiological techniques for extra- and intracellular recordings of bioelectrical signals.** **Use of the patch-clamp technique in perforated patch and whole cell configuration.**
Altro (partecipazione a convegni e seminari, pubblicazioni, collaborazione a riviste, ecc., ed ogni altra informazione che il compilante ritiene di dover pubblicare)		**Teaching activity:** **In these years Dr. Russo has assisted several students and PhD students in preparation of their thesis.** **2001 – 2008: he has been teaching Neurophysiology of C.N.S. (MSc in Pharmacy, Chemistry and Pharmaceuticals Technology, and BSc in Herbal Techniques).** **2002 -2008: he has been teaching Physiology (BSc in Herbal Techniques)** **2009 -2010: he has been teaching Human Anatomy (MSc in Chemistry and Pharmaceuticals Technology)** **From 2010: he is teaching Human Anatomy (MSc in Pharmacy)** **From 2011: he is teaching Cellular Physiology (MSc in Pharmacy).** **Research interests:** **In the pre-graduation period he studied the synaptic transmission in the isolated superior cervical ganglion of the rat by using both extracellular and intracellular electrophysiological methods.** **During the three years of the PhD program (1986 – 1988) he worked on the chemical transmission at the cyto-neural synapses of the frog vestibular organs. By using intracellular recordings, he provided convincing evidence on the role of glutamate as an afferent transmitter.** **From 1989 to 1992 he took on the study of the ionic mechanisms involved in the mechano-electrical transduction process in the vestibular receptors. By using the patch-clamp technique, he studied the voltage- and ion-dependent ionic currents in isolated hair cells of frog semicircular canals.** **In the 1994, together with Dr. Prigioni and Dr. Masetto, he developed a new preparation consisting of slices of frog crista ampullaris which allows the study of the biophysical properties of hair cells in situ . The use of this preparation allowed him to define the complement of hair cell K+ and Ca2+ channels and demonstrate a clear regional and intraregional expression of these currents along the sensory epithelium, the expression of the Ca2+ pumps (PMCA) and probably presence of intracellular IP3-sensitive stores in the vestibular hair cells. Concerning PMCA, the nature and the localization of its isoforms have been defined by using RT-PCR and immunostaining techniques. It was provided**

		evidence that vestibular hair cells express all the four known PMCA isoforms and that PMCA1 and PMCA2 are the most abundant. Concerning the presence of intracellular IP3-sensitive stores, it was showed that IP3 receptors are highly expressed in hair cells and that they play a role in controlling afferent transmission. **More recently, he focused his research interests on the morpho-functional recovery of vestibular sensory epithelia following ototoxic damage induced by application of aminoglicosidic antibiotic, Gentamicine. This recovery was investigated combining histochemical and electrophysiological techniques.** **From 2006 to 2009 he focused his research interests on the morph-functional recovery of vestibular sensory epithelia following ototoxic damage induced by application of aminoglicosidic antibiotic, Gentamicine. This recovery was investigated combining istochemical and electrophysiological techniques.** **From 2013 to 2014 by using immunofluorescence techniques he studied the expression of GAD and GABA in mouse vestibular epithelia in order to clarify the role played by GABA in the afferent synaptic transmission.** **From 2009 the interest of Dr. Russo and his colleagues is addressed to the characterization (by the patch clamp technique) of K+ and Ca2+ conductances in mammal vestibular hair cells. For this purpose they developed a preparation of whole crista ampullaris of mouse. Moreover, in these years, by using transgenic mice that do not express the EPS8 protein (EPS8-KO), affected by deafness but no vestibular defects, he devoted to the comparison of electrophysiological and morphological properties of vestibular and cochlear hair cells in EPS8-KO and control (WT) mice, in order to define the role of EPS8 in the correct functional development of these sensory organs. At the moment, his interest is focused to the study of the biophysical and functional properties of IKL, characterizing conductance the mouse Type I hair cells, in order to define the role played by this conductance in a probable non-quantal afferent transmission due to K+ accumulation in the synaptic cleft between the Type I hair cell and the calyx afferent terminal.** **Moreover, from 2020 his interest is also addressed to the characterization of Pimozide effects (antipsychotic drug) on the K^+ channels expressed by chicken embryo vestibular hair cells at different stages of development. This characterization could be useful for a probable future use of this drug in any vestibular pathology, as Ménière disease.** **Currently together with Prof. S Masetto and his collaborators he is engaged in the implementation of a research project, funded by PRIN 2022, aimed at the identification of protein subunits that constitute the ion channels involved in synaptic**

		transmission between vestibular hair cells and afferent terminals in the mouse. For this reason the innovative Patch-seq technique will be used. This technique will allow them to relate the different set of Ionic conductances expressed by Type I and Type II vestibular hair cells with the total mRNA present in the cytoplasm of these cells.

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Luogo e data…**Pavia 09/05/2024**……