Guillaume Sandoz, PhD

DoB: 22/01/1977 – Married - Two children (born in 2003, 2011) - Nationality: Swiss-French

http://ibv.unice.fr/EN/equipe/sandoz.php

UNIVERSITY EDUCATION

2013	Accreditation to supervise research (Habilitation à diriger des Recherches)
2000-2003	**PhD thesis in Neuroscience** (neurobiology) Highest honors, Aix-Marseille University, Marseille under the supervision of M De Waard
1998-2000	**Master of Science in Neuroscience** (**valedictorian**), University of Aix-Marseille
1997-1998	Licence of Cellular Biology and Physiology (Bachelor of Science) University of Aix-Marseille.

CURRENT and PREVIOUS POSITIONS

2016-present	**Research Director** (Directeur de Recherche), **CNRS**
2013-present	**Principal Investigator,** Sandoz lab**,** Institute of Biology Valrose (iBV), Nice, France
2012-2013	Permanent Position of Researcher (« Chargé de recherche », CR1), Institute of Molecular and Cellular Pharmacology (IPMC), Valbonne, France.
2009-2012	**Fulbright Visiting Scholar**, Isacoff lab**, University of California, Berkeley**, California.
2005-2009	CNRS Researcher (Chargé de recherche) CNRS**,** Lazdunski lab, IPMC
2004-2005	Post-doctoral position**,** Lazdunski lab, IPMC, Valbonne.
2000-2004	PhD in Neurosciences: Regulation of Voltage-gated Calcium channels, IFR Jean-Roche, Marseille / CEA, Grenoble.

SELECTED FELLOWSHIPS AND AWARDS

2017	FRM awarded (highly competitive French research grant)
2012	**ATIP-AVENIR** awarded (highly competitive research grant to start a research group)
2012	ANR "Young researcher" granted (French grant to start a research group, I declined this grant to take the ATIP-AVENIR grant)
2011 and 2015	"Prime d'Excellence Scientifique" (CNRS award granted for 4 years to outstanding research works)
2009	**Fulbright award**
2009 and 2010	Philippe Foundation awarded
2007	« **Prix Jean-Louis Parrot** » Award for outstanding young scientist. French Society for Promotion of Sciences (AFAS)
2004	Post-doctoral Fellowship from CNRS
2001	First scientific communication Award at the 4th scientific meeting of the "Institut Fédératif Jean Roche", Marseille, France.
2000-2003	Doctoral Fellowship from the French Minister of Research

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

2013-current	Supervision of 9 Master Students in Life Science and 1 Master Student in Chemistry
2014-current	Supervision of 3 post-docs
2013-current	Supervision of 3 PhD students, life science (Comoglio Y, Royale P, Avalos Prado P)
2012	Co-supervision of 1 PhD student (Joshua Levitz) from the Isacoff lab, in my lab in France with a Chateaubriand fellowship on TREK project
2009-2012	Supervision of 2 rotation students UC Berkeley
2004-2012	Supervision of 5 Master Students in Life Science (University of Nice)
2007-current	Supervision of 4 Bachelor Student in Biotechnology (Lycée Jules Ferry – Cannes)

TEACHING ACTIVITIES

2016	Invited lecturer in the main seminar series of the Instituto de Neurociencias, PhD program in life science Alicante Spain
2014-16	Invited lecturer at the University of Copenhagen, Denmark,
2012-actual	Teacher in Ion Channels (12h/year), Master of Biology University of Nice
2008-2009	Teacher in Biochemistry (80h), Bachelor degree, Lycée Jules Ferry, Cannes
2006-2007	Teacher in Immunology (60h) Bachelor degree, Lycée Jules Ferry, Cannes
2005-2006	Teacher in Pharmacology (12h) Master of Biology University of Nice
2000-2003	Teaching assistant in Biochemistry and Molecular Biology (60h/year), University of Aix-Marseille, Marseille

ORGANIZATION OF SCIENTIFIC MEETINGS

2014	CoChair Optogenetics and Behaviour session Embo 2014 Paris
2013	**President of the 24th Ion Channel Meeting,** France (120 participants)
2012	Co-organizer of the 23rd Ion Channel Meeting and organizer of the symposium, France (120 participants)
2012	Organizer of the first ICST meeting, France (35 participants)
2008	Co-organizer of the 9th research to Discovery meeting in Nice, France (120 participants)
2007	Organizer of the 2nd IPMC meeting (130 participants)

INSTITUTIONAL RESPONSABILITIES

2014-current	**Correspondent of the French Neuroscience Society** for Nice area in France
2011-current	**Member of the Fulbright Committee**; selection of the American applicants to come in France and the French applicants to come in USA – Application group study and interviewing committee

COMMISSIONS OF TRUST

Scientific evaluation as reviewer for: Science, Biochim Biophys Acta, J. Physiol, BJP, Biochemical Pharmacology, Frontiers in Neurosciences, Plos One, European Journal of Pharmacology, Journal of Molecular and Cellular Cardiology…

Reviewer for agencies for: Fonds Wetenschappelijk Onderzoek - Vlaanderen, FWO" 2014, 2017, German Research Foundation 2014, French National Research Agency 2015

Review Editor (since 2015): Editorial Board of Frontiers in Synaptic Neuroscience

SCIENTIFIC PRODUCTION

Total number of publications: > 36

Peer-Reviewed Research Articles:

- First or co-first author: 13 (Cell, Neuron, Nature Com, EMBO J, 3 PNAS, J. Neurosci., JBC, 3 Eur J. Neurosci., Methods Mol. Biol.)
- Last and corresponding author: 3 (2 PNAS + 1 under revision in Neuron)

Number of Patents: 4 (contribution: 25%; 30%; 70%, 65%)

Number of Invited Communications: ≥ 30

Communications to peer-reviewed, international conferences and international advanced school: >10

Number of seminar and selected Communications: ≥ 50

FUNDING

Project Title	*Funding source*	*Period*	*My Role*	
Optogenetic and optical probing of TREK channel physiology	Fondation pour la Recherche Médicale	Starting October 2017-ending Dec. 2020	Head of the project	By combining optogenetic and single molecule fluorecsence assay (SiMPull) the project aims to address the TREK physiological and pathological functions and to determine which channels subtypes are involved in these functions.
Bioanalgesics	ANR (French Agency for Research)	Starting Jan. 2018_ending Dec 2001	Partner	The central aim of the project is the development of new potent analgesics, building on the detailed elucidation of the AT_2R-TRAAK model.
OPERAS	ANR (French Agency for Research) T-ERC	Starting June 2017-ending Dec. 2018	Head of the project	Tremplin-ERC is intended for researchers affiliated to a French academic research organization who did not receive funding from the ERC Consolidator Grants despite having submitted top-quality projects (ranked A or B, after second evaluation step)
Optogenetic Study of K2P Potassium Channels	ATIP+	Starting Jan. 2016-ending Dec. 2017	Head of the project	The ATIP+ is an extension of the ATIP-*AVENIR grant which is described below.
Optogenetic Study of K2P Potassium Channels	ATIP-AVENIR French Minister of Research	Starting Jan. 2013-ending Dec. 2015	Head of the project	The ATIP-AVENIR is a grant from the French Government which allows create and start a lab. The funded project deals with our newly developed method PCS that allows endowing light sensitivity to native channels to study their function.
Dynaselect	ANR (French Agency for Research)	Starting Jan 2015-ending 2018	Partner (with Barhanin and Lesage Labs)	Determination of the pathway inducing permeability modifications of TWIK1 which is another K2P channel.

LabEx Ion Channel Science and Therapeutics	ANR (French Agency for research)	Starting Jan. 2012-ending Dec. 2019	**Laboratory of Excellence (LabEx)** Channel Science and Therapeutics (ICST). The LabEx is a very competitive French initiative to increase science excellence. The ICST LabEx project is a network of 16 research teams, including BIC-iBV	The LabEx aims transversal research between the different teams which compose it and to help to hire students. We are currently working in collabo-ration with the Vivaudou's lab (Grenoble) to notably build–up the light-gated Kir6.2 and the De Waard's lab to engineer light-gated toxins. We hired one post-doc for these projects.
Methods and pharmaceu-tical composi-tions for treating drug addiction	SATTSudEst	Starting May 2015	Head of the project	SATT aims at transfer-ring innovative techno-logies stemming from its shareholders to the economic fabric while granting operating licenses to companies. The project aims to test TREK1 activator on alcohol side effects and alcoholism withdrawal.
OPTICAN	Nice University	2015	Head of the project	This grant allowed me to build-up a new electrophy set-up with a light illumination systemwhich will be dedicated to slices experiments.
TREK	NRJ foundation - Institut de France	2015	Head of the project	This grant allows in combination with OPTICAN to buy an electrophy set-up.
Optogenetic Study of K2P Potassium Channels	ANR (French Agency for research)	2013	Head of the project	This grant was submitted at the same time as the ATIP-AVENIR grant. I have been funded but I declined it for the ATIP-AVENIR
StarTREK-mouse project	ICS	2013	Head of the project	This grant covers the majority of the budget to construct StarTREK

PUBLICATIONS

2018-1 Royal P, Ávalos Prado P, Wdziekonski W, Schaub S, Lesage F, Gasull X, Levitz J and **Sandoz G**. *Molecular mechanism of TRESK potassium channel dysfunction in migraine.* **Under revision in Neuron**

2018-2 Rayaprolu R, Royal P , Stengel K, **Sandoz G,** Kohout SK. *Ci-VSP dimerization controls its voltage sensing and catalytic activity,* **J. Gen. Physiol**. 7;150(5):683-696.

2017 Song OR, Kim HB, Jouny S, Ricard I, Vandeputte A, Deboosere N, Marion E, Queval CJ, Lesport P, Bourinet E, Henrion D, Oh SB, Lebon G, **Sandoz G,** Yeramian E, Marsollier L, Brodin P. *A Bacterial Toxin with Analgesic Properties: Hyperpolarization of DRG Neurons by Mycolactone*. **Toxin** 18;9(7). pii: E227

2016-1 Levitz J*, Perrine Royal*, Comoglio Y, Wdziekonski B, Schaub S, Clemens D, Isacoff EY and **Sandoz G**, *Heterodimerization within the TREK channel subfamily produces a diverse family of highly regulated potassium channels*, **Proc Natl Acad Sci U S A,** 12;113(15):4194-9.

2016-2 Orlandi G, Kuzhir P, Izmaylov Y, Alves Marins J, Ezzaier H, Robert L, Doutre F, Noblin X, Lomenech C, Bossis G, Meunier A, **Sandoz G**, Zubarev A. *Microfluidic separation of magnetic nanoparticles on an ordered array of magnetized micropillars.* **Phys Rev E**. 93(6-1):062604.

2016-3 Harb K, Magrinelli E, Nicolas C, Lukianets N, Frangeul L, Pietri M, Sun T, **Sandoz G,** Grammont F, Jabaudon J, Studer M and Alfano C. A novel postnatal population of cortical projection neurons characterized by the co-expression of Ctip2 and Satb2 is specified by Lmo4. **Elife** 5:e09531

2014-1 Comoglio Y, Levitz J, Kienzler M, Lesage F, Isacoff EY and **Sandoz G.** *Specific regulation of TREK channels by phosphatidic acid due to direct association with Phospholipase D2*. **Proc Natl Acad Sci U S A,** 111: 13547-52

2014-2 Marion E, Song OR, Christophe T, Babonneau J, Fenistein D, Eyer J, Letournel F, Henrion D, Clere N, Paille V, Guérineau NC, Saint André JP, Gersbach P, Altmann KH, Stinear TP, Comoglio Y, **Sandoz G,** Preisser L, Delneste Y, Yeramian E, Marsollier L, Brodin P. *Mycobacterial toxin induces analgesia in buruli ulcer by targeting the Angiotensin pathways.* **Cell.** 157: 1565-76.

2013-1 Guyon A, Kussrow A, Olmsted I, **Sandoz G**, Bornhop D, and Nahon JN. *Baclofen and other GABAB receptor agents are allosteric modulators of the CXCL12 chemokine receptor CXCR4*. **The Journal of Neuroscience**, (2013) 33:11643-54

2012-1 **Sandoz G,** Levitz J, Kramer R & Isacoff E. *Optical control of endogenous proteins with a photo-switchable conditional subunit reveals a role for TREK1 in GABAB signaling.* **Neuron**, 74; 1005-14.

***Highlighted** in **Le Monde**: Télécommander les gènes grâce à des ondes. p3, Science et Techno, 05/05/2012*

2011-1 **Sandoz G,** Bell S & Isacoff E. *Optical probing of a dynamic membrane interaction regulating TREK1 channel* **Proc Natl Acad Sci U S A**, 2011, 8;108(6):2605-10

***Selected** in « **le Rapport d'Activité du CNRS: 2011, une année avec le CNRS** »*
Découverte d'un nouveau mécanisme d'action de la fluoxétine, P11. (2012)

***Highlighted** in « **le Journal du CNRS** » numéro 256 p9 LE MYSTÈRE DU PROZAC DÉVOILÉ*

2011-2 **Janovjak H*/Sandoz G*** & Isacoff E. *A modern ionotropic glutamate receptor with a K+ selectivity signature sequence.* **Nature Communications**. 2011, 2:232
* **Co-first authors**

2010-1 Feliciangeli S, Tardy MP, **Sandoz G,** Chatelain F, Warth R, Barhanin J, Bendahhou S, Lesage F. *Potassium channel silencing by constitutive endocytosis and intracellular sequestration.* **Journal of Biological Chemistry** 12;285(7):4798-805.

2009-1 **Sandoz G**, Douguet D, Chatelain F, Lazdunski M & Lesage F, *Extracellular acidification exerts opposite actions on TREK1 and TREK2 potassium channels via a single conserved histidine residue.* **Proc Natl Acad Sci U S A** (2009) 106:14628-33.

***Highlighted** in **Science Signaling** « Editorial choice »*
E. M. Adler, Twins Don't Always Act Alike. Sci. Signal. ***2**, ec292 (2009).*

2008-1 **Sandoz G** and Lesage F. *Protein Complex analysis of Native Brain potassium channels by Proteomics* (2008). **Methods in Molecular Biology**, 491, 113-123.

2008-2 **Sandoz G,** Tardy M, Thümmler S, Feliciangeli S, Lazdunski M & Lesage F, *Mtap2 is a constituent of the protein network that regulates TREK channel expression and trafficking.* (2008) **The Journal of Neuroscience**, 28, 8545-8552.

2007-1 **Feliciangeli S*/Bendahhou S*/Sandoz G*,** Gounon P, Reichold M, Warth R, Lazdunski M, Barhanin J & Lesage F. *Does sumoylation control K2P1 (TWIK1) background K+ channels?* **Cell,** 130, 563-9. * **Co-first authors**

2006-1 **Sandoz G**, Thummler S, Duprat F, Feliciangeli S, Vinh J, Escoubas P, Guy N, Lazdunski M & Lesage F. *AKAP150, a switch to convert mechano-, pH, arachidonic-sensitive TREK potassium channels into open leak channels.* **EMBO Journal**, 13, 5864-5872.

2004-1 **Sandoz G**, Grunwald D, Lopez-Gonzalez I, Weiss N, Dupuis A & De Waard M. *$Ca_v\beta$-subunit displacement is a key step to induce the reluctant state of P/Q calcium channels by direct G-protein regulation.* **Proc Natl Acad Sci U S A** 101, 6267-6272.

2004-2 **Sandoz G**, Lopez-Gonzales I, Villaz M, Arnoult C & De Waard M. *β subunit repositioning of charged I-II loop amino acid residues contributes to inactivation of P/Q calcium channels.* **European Journal of Neuroscience** 19,1759-1772.

2003-1 **Sandoz G**, thesis: *Régulation des canaux calcium neuronaux sensibles au potentiel.* Jury: Pr H. ROCHAT (president), Dr M. GOLA (reporter), Dr F. LESAGE (reporter), Dr M. VIVAUDOU (examinator) et Dr M. DE WAARD (thesis advisor).

2003-2 M'Barek S, Mosbah A, **Sandoz G**, Fajloun Z, Olamendi-Portugal T, Rochat H, Sampieri F, Guijarro I, Mansuelle P, Delepierre M, De Waard M & Sabatier JM. *Synthesis and characterization of Pi4, a scorpion toxin from Pandinus imperator that acts on K^+ channels.* **European Journal of Biochemistry** 270, 3583-3592.

2002-1 **Geib S*/ Sandoz G*,** Cornet V, Mabrouk K, Fund-Saunier O, Bichet D, Villaz M, Hoshi T, Sabatier J.M & De Waard M. *The interaction between the I-II loop and the III-IV loop of $Ca_v2.1$ contributes to voltage-dependent inactivation in a β-dependent manner.* Journal of Biological Chemistry 277, 10003-10013.
***Co-first authors**

2002-2 Di Luccio E, Matavel A, Opi S, Regaya I, **Sandoz G**, M'Barek S, Carlier E, Estève E, Carrega L, Fajloun Z, Rochat H, Loret E, De Waard M & Sabatier JM. *Evolution of maurotoxin conformation and blocking potency on ShakerB channels during the course of folding and oxidation in vitro.* **Biochemical Journal** 361, 409-416.

2002-3 Geib S, **Sandoz G**, Mabrouk K, Matavel A, Hoshi T, Villaz M, Ronjat M, Miquelis R, Lévêque C & De Waard M. *Use of a purified and functional recombinant calcium-channel β_4 subunit in surface-plasmon resonance studies.* **Biochemical Journal** 364, 285-292.

2002-4 **Sandoz G**/**Fathallah M*,** Mabrouk K, Geib S, Villaz M, Sabatier JM & De Waard M. *Modelling of the III-IV loop of the P/Q calcium channel $Ca_v2.1$ reveals a structural homology with the γ subunit of G proteins*. **European Journal of Neuroscience** 16, 219-228.
*** Co-first authors**

2002-5 Cornet V, Bichet D, **Sandoz G**, Marty I, Brocard J, Bourinet E, Mori Y, Villaz M & De Waard M. *Multiple ER retention determinants control the cell surface targeting of voltage-dependent P/Q calcium channels***. European Journal of Neuroscience** 16, 883-895.

2001-1 Carlier E, Fajloun Z, Mansuelle P, Fathallah M, Mosbah A, Oughideni R, **Sandoz G**, di Luccio E, Geib S, Regaya I, Brocard J, Rochat H, Darbon H, Devaux C, Sabatier JM & De Waard M. *Disulfide bridge reorganization induced by proline mutations in maurotoxin.* **FEBS Letters** 489, 202-207.

2001-2 **Sandoz G**, Bichet D, Mori Y, Felix R & De Waard M. *Distinct properties and differential β subunit regulation of two C-terminal isoforms of the P/Q-type Ca^{2+}-channel α_{1A} subunit.* **European Journal of Neuroscience** 14, 987-997.

2001-3 Geib S, **Sandoz G**, Carlier E, Cornet V, Cheynet-Sauvion V & De Waard M. *A novel Xenopus oocyte expression system based on cytoplasmic coinjection of T7-driven plasmids and purified T7 RNA polymerase.* **Receptors & Channels** 7, 331-343.

2001-4 Di Luccio E, Azulay D-O, Regaya I, Fajloun Z, **Sandoz G**, Mansuelle P, Kharrat R, Fathallat M, Carrega L, Esteve E, Rochat H, De Waard M & Sabatier JM. *Parameters affecting in vitro oxidation/folding of maurotoxin, a four disulfide-bridged scorpion toxin.* **Biochemical Journal** 358, 681-692.

2001-5 Fajloun Z, Mosbah A, Carlier E, Mansuelle P, **Sandoz G**, Fathallah M, di Luccio E, Devaux C, Rochat H, Darbon H, De Waard M & Sabatier JM. *Maurotoxin vs Pi1/HsTx1 scorpion toxins: towards new insights in the understanding of their distinct disulfide bridge patterns.* **Journal of Biological Chemistry** 275, 39394-39402.

2000-1 Fajloun Z, Ferrat G, Carlier E, Fathallah M, Lecomte C, **Sandoz G**, di Luccio E, Mabrouk K, Legros C, Darbon H, Rochat H, Sabatier JM, De Waard M. *Synthesis, 1H NMR structure, and activity of a three-disulfide-bridged maurotoxin analog designed to restore the consensus motif of scorpion toxins.*
Journal of Biological Chemistry 275:13605-12.

REVIEWS

2013-1 Sandoz, G., and Levitz, J. (2013). *Optogenetic techniques for the study of native potassium channels.* **Front Mol Neurosci** *6*, 6. (**Invited review**)

2012-1 Sandoz G and Isacoff. *Optical remote control of native ion channels.* **médecine/sciences**, 28: 934-7. (**Invited review**)

2011-1 Noel J, **Sandoz G**, Lesage F, *Molecular regulations governing TREK and TRAAK channel functions*. **Channels** (Austin), 2011-1;5(5):402-9

2007-1 **Sandoz G**. *Complexes protéiques et perméabilité de la membrane cytoplasmique : exemple du canal TREK*. **Sciences**, 2007-3, 9-14.

2001-1 Fajloun Z, Mosbah A, Carlier E, Mansuelle P, **Sandoz G**, Fathallah M, di Luccio E, Devaux C, Van Rietschoten J, Rochat H, Darbon H, De Waard M & Sabatier J-M. *Maurotoxin vs Pi1/HsTx1 scorpion toxins: towards new insights in the understanding of their distinct disulfide bridge patterns.* In "**Peptides 2000**", Proceedings of the 26th Eur. Pept. Symp., Jean Martinez and Jean-Alain Fehrentz (Eds.), EDK, Paris, France, pp 559-560.

2001-2 Fajloun Z, Ferrat G, Carlier E, Fathallah M, Lecomte C, **Sandoz G**, di Luccio E, Mabrouk K, Legros C, Darbon H, Rochat H, Sabatier J-M & De Waard M. *Synthesis, H-NMR structure and activity of a three disulfide-bridged maurotoxin analog designed to restore the consensus motif of scorpion toxins.* In "**Peptides 2000**", Proceedings of the 26th Eur. Pept. Symp., Jean Martinez and Jean-Alain Fehrentz (Eds.), EDK, Paris, France, pp 629-630.

PATENTS

2017 **Sandoz G (80%)** and Royal P (20%). METHODS AND PHARMACEUTICAL COMPOSITIONS FOR TREATING MIGRAINE. 29/06/2017. EP17305813.2.

2014-1 **Sandoz G (70%)** and Comglio Y (30%). METHODS AND PHARMACEUTICAL COMPOSITIONS FOR TREATING DRUG ADDICTION. 25/02/2016. WO2016026978

2014-2 Marion E (3%), Song Ok-Ryul (3%), Comoglio Y (3%), Marsollier L (30%), **Sandoz G (30%)** and Brodin P (31%). METHODS AND PHARMACEUTICAL COMPOSITIONS FOR TREATING PAIN. 17/12//2015. WO2015189342

2006 **Sandoz G***, De Waard M*, Dupuis A*, Grunwald D*. *Chimeric protein for the screening of agonists and antagonists of cell signalling pathways that are dependent on G-protein-coupled receptors.* Publication Number [WO/2004/058977] [JP Patent 2004563300] [US Patent 10540247] published the 21 June 2007.
INSERM/CEA (*Equal contribution)

MEETING AND SEMINAR

INVITED PRESENTATION IN INTERNATIONAL CONFERENCES AND ADVANCED SCHOOL

2018-1 **Sandoz G**, *Heteromerization of K2P channels: from physiology to physiopathology*, The 49th NIPS International Symposium "Ion Channels", Nagayo, Japan, 6/12/2018 (**International Conference**)

2018-2 **Sandoz G,** *Heteromerization of K2P channels: from physiology to physiopathology,* 29th Ion Channel Meeting, Sete –France 15/09/18 (**International Conference)**

2016-1 **Sandoz G**, *Specific regulation of TREK channels by phosphatidic acid due to direct interaction with phospholipase D2*, Alicante, Spain, Neuroseminar serie 29/10/2016 (**international conference**).

2016-2 **Sandoz G,** Membrane lipid – Protein interaction, PhD Course on Biological Membranes, Drug Targets and Absorption Barrier, Faculty of Health and Medical Sciences, University of Copenhagen, Copenhagen, Denmark 04/11/16 (**Advanced school**)

2016-3 **Sandoz G**, *Optophamacological study of TREK channel physiology*, **10th FENS 2016** forum of Neuroscience, Copenaghen, Danemark, 2-6/07/2016. (**International conference**).

2015-1 **Sandoz G**, *Specific regulation of TREK channels by phosphatidic acid due to direct interaction with phospholipase D2*, Heidelberg, Germany, Ion channels, 25/09/2015 (**International conference**).

2015-1 **Sandoz G**, *Specific regulation of TREK channels by phosphatidic acid due to direct interaction with phospholipase D2*, Montpellier France, French Neuroscience 20/05/2015 (**International conference**).

2015-2 Sandoz G, *Ion channels and optogenetic*, 19eme congrés de la SFPT, Caen 21-23/04/2015 (**National meeting**).

2014-1 **Sandoz G**, *Optophamacological study of TREK channel physiology*, FEBS EMBO, France (**International conference**).

2014-2 **Sandoz G,** *Membrane lipid – Protein interaction, PhD Course on Biological Membranes, Drug Targets and Absorption Barrier, Faculty of Health and Medical Sciences*, University of Copenhagen, Copenhagen, Denmark 19/11/14 (**Advanced school**)

2013-1 **Sandoz G**, *Specific regulation of TREK channels by phosphatidic acid due to direct interaction with phospholipase D2*, GERMGERLI meeting, Cap Ferrat, France, 14/11/2013 (**International Conference**).

2013-2 **Sandoz G**, *Light sensitive K2P channels, identification of novel antiarhytmic strategies*, Heidelberg Channels 2013, Heidelberg, Germany 27/09/13 (**International Conference**)

2012-1 **Sandoz G,** Otpical Control of Endogenous Proteins with the Photoswitchable Conditionnal Subunit, Atelier INSERM 217, Bordeaux , France, 10-12/09/12, (**Advanced school**)

2010-1 **Sandoz G.**, *Macromolecular Signaling Complexes Regulate K2P Channels.* **American Heart Association – Scientific session 2010** – Chicago, Illinois USA 13-17/11/2010 (**International Conference)**

2010-2 **Sandoz G**, *Macromolecular signalling complexes: Impact on ion channel regulation*, The long QT Syndrome – From Molecular Mechanisms to Arrythmias. Heidelberg, Germany 11-12/10/10 (**International Conference)**

2007-1 **Sandoz G**, *Régulation des canaux potassiques TREK par leurs protéines partenaire* 3èmes journée thématiques du club des jeunes de la SFEAP, Montpellier, France 14-15/06/07 (**National meeting**).

2006-1 **Sandoz G**, Thummler S, Duprat F, Escoubas P, Vinh J, Guy N, Lazdunski M and Lesage F. *K2P channels proteomics*. New Perspectives in Proteomics, **European Seminar Series,** Sophia-Antipolis, France, 15/06/06 (**Advanced school**).

INVITED SEMINARS AND ORAL COMMUNICATIONS

2018-1 **Sandoz G**, *Structure function of TREK channels,* Faculté de medicine Nord, Marseille, France, 29/06/2018, **(Invited speaker)**

2017-1 **Sandoz G**, *Optogenetic and optical probing of TREK channel physiology,* Institute of Neurosciences of the Universitat de Barcelona, Barcelona, Spain, 30/06/2017 **(Invited speaker)**

2017-2 **Sandoz G**, *Optopharmacology of TREK channels*, Med Univ Graz, Graz, Austria, 11/04/2017 (**Invited speaker**)

2017-3 **Sandoz G**, *Optical probing of TREK channels function*, Institute of Science and Technology, Vienna, Austria, 10/04/2017 (**Invited speaker**)

2016-1 **Sandoz G**, *Optopharmacoligical study of TREK channel Physiology*, Conférences Jacques Monod, Optical Imaging of Brain Connectivity: From Synapses to Networks in Action, Roscoff France, 13-17/07/2016 (Speaker)

2015-1 **Sandoz G**, *Optical probing of TREK channels function*, Séminaire FBN 2015, Bordeaux, 5/10/2015 (**Invited speaker**)

2015-2 **Sandoz G**, *PLD2 regulates specifically TREK channels via direct interaction and local production of phosphatidic acid.* 26th Ion Channel Meeting, Sete –France 15/09/15 (**Speaker)**

2014-1 **Sandoz G**, *Optogenetic and optical probing of TREK channel physiology* INMED, Marseille, France, 20/01/2014 (**Invited speaker**)

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2014-2 **Sandoz G,** *Optical control of endogenous proteins with a photoconditional subunit reveals a role for TREK1 in GABAB signalling*. Institut de Chimie de Nice, France, 7/02/2014 (**Invited speaker**).

2013-1 **Sandoz G**, *Specific regulation of TREK channels by phosphatidic acid due to direct interaction with phospholipase D2*, LabEx ICST meeting, Grenoble, France, 26/11/2013 (**Invited speaker**).

2013-2 **Sandoz G**, *Optogenetic and optical probing of TREK channel function*, CAESAR Institute, Baune, Germany, 26/09/2013 (**Invited speaker**).

2013-3 **Sandoz G**, *Optogenetic and optical probing of TREK channels physiology*, Institut des Neurosciences de Grenoble, Grenoble, 14/02/2013 **(Invited speaker).**

2012-1 **Sandoz G,** *Optogenetic and optical probing of TREK channels physiology*, Institut des Neurosciences de *la* Timone, Marseille, 10/12/2012 (**Invited speaker**).

2012-2 **Sandoz G**, *TREK channels from structure to function*, iBV, Nice, 15/06/2012 (**Invited speaker**).

2012-3 **Sandoz G**, *TREK channels from structure to function*, IBDML, Marseille, 02/03/2012 (**Invited speaker**).

2011-1 **Sandoz G,** *Comment utiliser des molécules chimiques pour contrôler l'activité génique et neuronale?* Colloque « Marseille en molécules », Marseille, France 07/12/2011 **(Invited speaker).**

2011-2 **Sandoz G**, *TREK1 from structure to function*, Mc Gill, Montreal, Canada 28/11/2011 (**Invited speaker**).

2011-3 **Sandoz G**, *TREK1 from structure to function*, CRUGL, Quebec, Canada 26/11/2011 (**Invited speaker**).

2011-4 **Sandoz G,** *TREK1 from structure to function***,** CHUQ, Quebec, Canada 25/11/2011 **(Invited speaker).**

2011-6 **Sandoz G**, TREK1 from structure to function, IGF Montpellier, France 16/09/2011 (**Invited speaker**).

2011-7 **Sandoz G**, TREK1 from structure to function, UNIL, Lausanne, Suisse 01/09/2011 (**Invited speaker**).

2011-1 **Sandoz G**, *Subunit replacement with a photoswitchable TREK1 channel reveals a role in hippocampal $GABA_B$ signaling.* 22nd Ion Channel Meeting, Presqu'île de Giens –France 25-28/09/11 (**International Conference)**

2008-1 **Sandoz G,** *Régulation des canaux potassiques à deux domaines P TREK*, les séminaires de l'IFR jean-Roche, Marseille, France 30/03/08 (**Invited speaker**).

2008-2 **Sandoz G,** *Regulation of neuronal background two-P-domain potassium channel TREK by its associated proteins*. UC Berkeley, California, 9/02/08 (**Invited speaker**).

2008-3 **Sandoz G,** *Regulation of neuronal background two-P-domain potassium channel TREK by its associated proteins*. Stanford, California, 7/02/08 (**Invited speaker**)..

2006-1 **Sandoz G**, *Protéomique des canaux K2P*. Séminaires Grenoblois de Neurosciences. Grenoble, France 2/10/06 (**Invited speaker**).

2006-2 **Sandoz G,** *Régulation des canaux potassiques TREK par leurs protéines associées.* Iere rencontre des plates-formes protéomiques de la région Provence Alpes Côte d'Azur (Institut Fédératif Jean Roche). Marseille 27/06/06 France (**Invited speaker**).

2006-3 **Sandoz G**, Thummler S, Duprat F, Escoubas P, Vinh J, Guy N, Lazdunski M et Lesage F. *K2P channels proteomics*. New Perspectives in Proteomics, **European Seminar Series,** journée complexes protéiques, Sophia-Antipolis, France, 15/06/06 (**Invited speaker**).

2005-1 **Sandoz G**, Thummler S, Duprat F, Escoubas P, Vinh J, Guy N, Lazdunski M et Lesage F. *Protéomique des canaux K2P*. Retraite de l'IPMC, Nice, France, 27/11/05. (**Invited speaker**).

2003-1 **Sandoz G**, Lopez-Gonzales I, Gunwald D, Dupuis A, De Waard M. *Channel disassembly as a mechanism of G-proteins regulation.* 14ème Colloque de l'Association des Canaux Ioniques, Presqu'île de Giens, France 21-24/09/03. (**Speaker**)

2002-1 **Sandoz G**, Gunwald D, Dupuis A, De Waard M. *Proteine chimérique pour le criblage d'agonistes et d'antagonistes des voies de signalisation cellulaires dépendantes des récepteurs couplés aux protéines G* (interdisciplinary meeting), Grenoble, France 2/12/02. (**Invited speaker**).

2001-1 **Sandoz G,** Bichet D, Mori Y, Felix R & De Waard M. *Importance fonctionnelle de l'épissage alternatif dans la région carboxy-terminale de la sous-unité α_{1A} des canaux calciques de type P/Q.* 4th scientific meeting of the "Institut Fédératif Jean Roche", Marseille, France 21-23/09/01. (**Speaker**)

2000-1 **Sandoz G**, Carlier E, Fajloun Z, di Luccio E, Mosbah A, Fathallah M, Mansuelle P, Rochat H, Darbon H, Sabatier JM & De Waard M. *Towards new insights in the understanding of disulfide bridge formation in maurotoxin.* 11ème Colloque Association Canaux Ioniques, France, La Londe les Maures, 10-13/09/00. (**Speaker**).