

CURRICULUM VITAE

Name: STOPPINI
First name: Luc
Nationality: French/Swiss
Mother tongue: French, fluent in English
Marital status: Married, 2 children
Professional Address: Hepia Geneva, University of Applied Sciences of Western Switzerland, Campus Biotech 9, chemin des mines, 1202 Geneva
Tel: +41-22 5462496
Tel: +41-763820645
e-mail: luc.stoppini@hesge.ch
Private address: 26, rue Carteret CH-1202 Geneva Switzerland

PRESENT POSITION

Professor of Bio-Engineering (100%) since 2008; Hepia Geneva

EDUCATIONAL DATA

1980-1983: **Doctorate Thesis in Neurosciences (Ph.D.)** University Claude Bernard Lyon 1, France and University of Geneva, Switzerland

WORKING EXPERIENCES

2004-2008 **Director R&D of Capsant Neurotechnologies LTD**, UK and Head of Capsant Neurotechnologies SA Geneva Switzerland
2000-2004: **Senior Scientist at Serono** Pharmaceutical Research Institute at Geneva (Development of an in-vitro model of multiple sclerosis)
1998-2000: **Founder and President of BioCell-Interface S.A.** (start-up in Bio-Engineering: Device for neurostimulation and recordings of in vitro neural networks).
1997-1998: **Assistant Professor (Maître d'Etude et de Recherche M.E.R.)**, Dpt. of Pharmacology, University of Geneva, C.M.U. Development of an in vitro model of blood-brain barrier

RESEARCH GRANTS (since 2008)

2008-2013 **ESNATS FP7 IP EU project: Embryonic** Stem cell-based Novel Alternative Testing Strategies (466'400 €)
2009-2011 **PharMEA FP7 capacities EU project:** Multi-Electrode Array technology based platform for industrial pharmacology and toxicology drug screening (142'400 €)
2009-2011 **Stem-3D call HES-SO project:** Multiparametric monitoring of engineered tissues from embryonic stem cells (ESCs): tools for "Human-based in vitro testing systems" and "organ replacement" (Total for partners: 500'000 CHF)

2009-2012 **Swiss Centre for Applied Human Toxicology (SCAHT)** (680'000 CHF)
 2012-2013 **CTI-NeuroSpectrum** (Project Franc Fort) (Total Partners : 500'000 CHF)
 2013-2016 **Swiss Centre for Applied Human Toxicology (SCAHT)** (680'000 CHF)
 2011-2013 **Roche Post-doc programs** (400'000 CHF)
 2013-2016 **Coordinator Program Diagnostic Biochips HES-SO** (Total partners 3 M CHF) (See Sagex for own funded projects)
 2015 **Funding Phase 1 Crack-it Challenge NC3Rs UK Program** (Total Partners 100'000£)
 2016-2018 **Partner H2020 NanoReg2** (456'372 CHF)
 2016-2017 **Wyss Center Funding:** In vitro Electrophysiological platform (195'000 CHF)
 2017-2020 **Coordinator Program Diagnostic BioChips HES-SO** (Total partners 2M CHF) (see Sagex for own funded projects)
 2017-2018 **Wyss Center Funding:** In vitro Electrophysiology Platform (320'000 CHF)
 2017-2018 **Swiss Centre for Applied Human Toxicology (SCAHT)** (240'000 CHF)

Project Submitted:

Novartis Freenovation 2018-2020: An innovative screening and testing device for neuropharmacology and neurotoxicology studies (180'000 CHF)

HFSP (Human Frontier Scientific Program) 2018-2021: In vitro "NeuroGUT" model to study microbiome-gut-brain axis in neuroinflammation

INDUSTRIAL PATENTS

- 1) DEVICE FOR THE STUDY OF ORGANOTYPIC CULTURES AND ITS USES IN ELECTROPHYSIOLOGY AND BIOCHEMISTRY 17.10.1996 C12M 01/34 (**WO 1996/032467**)
 - 2) CELL CULTURE DEVICE 03.01.1997 C12M 03/06 (**WO 1997/000314**)
 - 3) APPARATUS FOR MEASURING THE ELECTROPHYSIOLOGICAL ACTIVITY OF A GROUP OF CELLS 16.12.1999 G01N 33/483 (**WO 1999/064858**)
 - 4) DEVICE FOR ORGANIC CELL CULTURE AND FOR STUDYING THEIR ELECTROPHYSIOLOGICAL ACTIVITY AND MEMBRANE USED IN SAID DEVICE 16.12.1999 G01N 33/487 (**WO 1999/064559**)
 - 5) A METHOD FOR PREPARING AN ORGANOTYPIC CULTURE USING DISSOCIATED CELLS OR MICROEXPLANTS OBTAINED FROM AN ANIMAL ORGAN. FILED JUNE 2005 (UK). **G040636PT**
 - 6) A DEVICE FOR HIGH THROUGHPUT ORGANOTYPIC CULTURE MONITORING. FILED JUNE 2005 (UK). **G040727PT**
-

Awards: Prix de la fondation Naef 2013
 Prix Soutien de la fondation Philanthropia 2014

Publication to be submitted:

- Unravelling the effects of multiple experimental factors in HILIC-HRMS metabolomics of human neural cells using chemometrics Víctor González-Ruiz^{1,2}, Julian Pezzatti¹, Adrien Roux^{2,3}, **Luc Stoppini**^{2,3}, Julien Boccard^{1,2}, Serge Rudaz^{1,2*}

Publications in preparation:

- Porous Micro-Electrode Array for long-term monitoring of Electrophysiological activity from 3D neural cultures Marc Heuschkel, Flavio Mor, Emmanuel Eggermann, Adrien Roux and **Luc stoppini**
- Transcriptomic analyses of 3D neural tissues derived from human iPS cells, Julien Crovadore, Adrien Roux, Gautier Calmin, François Lefort and **Luc Stoppini**

Publications:

- Sandström J, Eggermann E, Charvet I, Roux A, Toni N, Greggio C, Broyer A, Monnet-Tschudi F, Stoppini L. Development and characterization of a human embryonic stem cell-derived 3D neural tissue

model for neurotoxicity testing. *Toxicol In Vitro*. 2017 Feb;38:124-135. doi: 10.1016/j.tiv.2016.10.001. PubMed

- Post-focus expansion of ion beams for low fluence and large area MeV ion irradiation: Application to human brain tissue and electronics devices Article reference: NIMB62182 Journal title: Nuclear Inst. and Methods in Physics Research, B Corresponding author: Professor **Luc Stoppini** First author: Dr. Harry J. Whitlow Online publication complete: 22-FEB-2017 DOI information: 10.1016/j.nimb.2017.01.054
- Norarat R., Guibert E., Jeanneret P., Dellea M., Jenni J., Roux A., **Stoppini L.**, Whitlow H. A gas ionisation direct-STIM detector for MeV ion microscopy. *Nuclear Instruments and Methods in Physics Research B* 348 (2015) 58–61
- Bal-Price A, Crofton KM, Leist M, Allen S, Arand M, Buetler T, Delrue N, FitzGerald RE, Hartung T, Heinonen T, Hogberg H, Bennekou SH, Lichtensteiger W, Oggier D, Paparella M, Axelstad M, Piersma A, Rached E, Schilter B, Schmuck G, **Stoppini L.**, Tongiorgi E, Tiramani M, Monnet-Tschudi F, Wilks MF, Ylikomi T, Fritsche E. International STakeholder NETwork (ISTNET): creating a developmental neurotoxicity (DNT) testing road map for regulatory purposes. *Arch Toxicol*. 2015 Jan 25.
- Vannary Tieng, **Luc Stoppini**, Sabrina Villy, Marc Fathi, Michel Dubois-Dauphin and Karl-Heinz Krause · Engineering of midbrain organoids containing long-lived dopaminergic neurons. *Stem Cells Dev*. 2014 Jul 1;23(13):1535-47.
- Kern I, Xu R, Julien S, Suter DM, Preynat-Seauve O, Baquié M, Poncet A, Combescure C, **Stoppini L.**, Thriel CV, Krause KH. Embryonic stem cell-based screen for small molecules: cluster analysis reveals four response patterns in developing neural cells. *Curr Med Chem*. 2013; 20(5):710-23.
- Krug AK, Kolde R, Gaspar JA, Rempel E, Balmer NV, Meganathan K, Vojnits K, Baquié M, Waldmann T, Ensenat-Waser R, Jagtap S, Evans RM, Julien S, Peterson H, Zagoura D, Kadereit S, Gerhard D, Sotiriadou I, Heke M, Natarajan K, Henry M, Winkler J, Marchan R, **Stoppini L.**, Bosgra S, Westerhout J, Verwei M, Vilo J, Kortenkamp A, Hescheler J, Hothorn L, Bremer S, van Thriel C, Krause KH, Hengstler JG, Rahnenführer J, Leist M, Sachinidis A. Human embryonic stem cell-derived test systems for developmental neurotoxicity: a transcriptomics approach. *Arch Toxicol*. 2013 Jan;87(1):123-43.
- Sundstrom L, Biggs T, Laskowski A, **Stoppini L.** OrganDots an organotypic 3D tissue culture platform for drug development. *Expert Opin Drug Discov*. 2012 Jun;7(6):525-34. doi: 10.1517/17460441.2012.686488. Epub 2012 May 19. PubMed PMID: 22607235.
- Dubois-Dauphin ML, Toni N, Julien SD, Charvet I, Sundstrom LE, **Stoppini L.** The long-term survival of in vitro engineered nervous tissue derived from the specific neural differentiation of mouse embryonic stem cells. *Biomaterials*. 2010 Sep;31(27):7032-42. doi: 10.1016/j.biomaterials.2010.06.017. Epub 2010 Jun 29. PubMed PMID: 20591476.
- Harrer MD, von Büdingen HC, **Stoppini L.**, Alliod C, Pouly S, Fischer K, Goebels N. Live imaging of remyelination after antibody-mediated demyelination in an ex-vivo model for immune mediated CNS damage. *Exp Neurol*. 2009 Apr;216(2):431-8. PubMed PMID: 19320002.
- Preynat-Seauve O, Suter DM, Tirefort D, Turchi L, Virolle T, Chneiweiss H, Foti M, Lohrbus JA, **Stoppini L.**, Feki A, Dubois-Dauphin M, Krause KH. Development of human nervous tissue upon differentiation of embryonic stem cells in three-dimensional culture. *Stem Cells*. 2009 Mar;27(3):509-20. doi:10.1634/stemcells.2008-0600. PubMed PMID: 19074418.

- Craveiro LM, Hakkoum D, Weinmann O, Montani L, **Stoppini L**, Schwab ME. Neutralization of the membrane protein Nogo-A enhances growth and reactive sprouting in established organotypic hippocampal slice cultures. *Eur J Neurosci*. 2008 Nov;28(9):1808-24. doi: 10.1111/j.1460-9568.2008.06473.x. PubMed PMID:18973596.
- Hakkoum D, Imhof A, Vallet PG, Boze H, Moulin G, Charnay Y, **Stoppini L**, Aronow B, Bouras C, Giannakopoulos P. Clusterin increases post-ischemic damages in organotypic hippocampal slice cultures. *J Neurochem*. 2008 Aug;106(4):1791-803. doi: 10.1111/j.1471-4159.2008.05519.x. Epub 2008 Jun 28. PubMed PMID: 18554319.
- van Vliet E, **Stoppini L**, Balestrino M, Eskes C, Griesinger C, Sobanski T, Whelan M, Hartung T, Coecke S. Electrophysiological recording of re-aggregating brain cell cultures on multi-electrode arrays to detect acute neurotoxic effects. *Neurotoxicology*. 2007 Nov;28(6):1136-46. Epub 2007 Jun 26. PubMed PMID: 17692379.
- Hakkoum D, **Stoppini L**, Muller D. Interleukin-6 promotes sprouting and functional recovery in lesioned organotypic hippocampal slice cultures. *J Neurochem*. 2007 Feb;100(3):747-57. Epub 2006 Nov 27. PubMed PMID: 17144903.
- Vincent P, Maskos U, Charvet I, Bourgeois L, **Stoppini L**, Leresche N, Changeux JP, Lambert R, Meda P, Paupardin-Tritsch D. Live imaging of neural structure and function by fibred fluorescence microscopy. *EMBO Rep*. 2006 Nov;7(11):1154-61. Epub 2006 Sep 29. PubMed PMID: 17008931; PubMed Central PMCID: PMC1679781.
- Robert F, Bert L, **Stoppini L**. Blockade of NMDA-receptors or calcium-channels attenuates the ischaemia-evoked efflux of glutamate and phosphoethanolamine and depression of neuronal activity in rat organotypic hippocampal slice cultures. *C R Biol*. 2002 Apr;325(4):495-504. PubMed PMID: 12161929.
- **Stoppini L**, Buchs PA, Brun R, Muller D, Duport S, Parisi L, Seebeck T. Infection of organotypic slice cultures from rat central nervous tissue with *Trypanosoma brucei brucei*. *Int J Med Microbiol*. 2000 Mar;290(1):105-13. PubMed PMID: 11043987.
- Robert F, Bert L, Parrot S, Denoroy L, **Stoppini L**, Renaud B. Coupling on-line brain microdialysis, precolumn derivatization and capillary electrophoresis for routine minute sampling of O-phosphoethanolamine and excitatory amino acids. *J Chromatogr A*. 1998 Aug 21;817(1-2):195-203. PubMed PMID: 9764494.
- Duport S, Robert F, Muller D, Grau G, Parisi L, **Stoppini L**. An in vitro blood-brain barrier model: cocultures between endothelial cells and organotypic brain slice cultures. *Proc Natl Acad Sci U S A*. 1998 Feb 17;95(4):1840-5. PubMed PMID: 9465104; PubMed Central PMCID: PMC19200.
- Thiébaud P, de Rooij NF, Koudelka-Hep M, **Stoppini L**. Microelectrode arrays for electrophysiological monitoring of hippocampal organotypic slice cultures. *IEEE Trans Biomed Eng*. 1997 Nov;44(11):1159-63. PubMed PMID: 9353996.
- Toni N, **Stoppini L**, Muller D. Staurosporine but not chelerythrine inhibits regeneration in hippocampal organotypic cultures. *Synapse*. 1997 Nov;27(3):199-207. PubMed PMID: 9329156.

- **Stoppini L**, Parisi L, Oropesa C, Muller D. Sprouting and functional recovery in co-cultures between old and young hippocampal organotypic slices. *Neuroscience*. 1997 Oct;80(4):1127-36. PubMed PMID: 9284065.
- Robert F, Parisi L, Bert L, Renaud B, **Stoppini L**. Microdialysis monitoring of extracellular glutamate combined with the simultaneous recording of evoked field potentials in hippocampal organotypic slice cultures. *J Neurosci Methods*. 1997 Jun 6;74(1):65-76. PubMed PMID: 9210576.
- **Stoppini L**, Duport S, Corrèges P. A new extracellular multirecording system for electrophysiological studies: application to hippocampal organotypic cultures. *J Neurosci Methods*. 1997 Mar;72(1):23-33. PubMed PMID: 9128164.
- Duport S, **Stoppini L**, Corrèges P. Electrophysiological approach of the antiepileptic effect of dexamethasone on hippocampal slice culture using a multirecording system: the Physiocard. *Life Sci*. 1997;60(17):PL 251-6. PubMed PMID: 9126873.
- Bert L, Robert F, Denoroy L, **Stoppini L**, Renaud B. Enhanced temporal resolution for the microdialysis monitoring of catecholamines and excitatory amino acids using capillary electrophoresis with laser-induced fluorescence detection. Analytical developments and in vitro validations. *J Chromatogr A*. 1996 Nov 29;755(1):99-111. PubMed PMID: 8997746.
- Buchs PA, **Stoppini L**, Párducz A, Siklós L, Muller D. A new cytochemical method for the ultrastructural localization of calcium in the central nervous system. *J Neurosci Methods*. 1994 Sep;54(1):83-93. PubMed PMID: 7815822.
- Muller D, **Stoppini L**, Wang C, Kiss JZ. A role for polysialylated neural cell adhesion molecule in lesion-induced sprouting in hippocampal organotypic cultures. *Neuroscience*. 1994 Aug;61(3):441-5. PubMed PMID: 7969921.
- **Stoppini L**, Buchs PA, Muller D. Lesion-induced neurite sprouting and synapse formation in hippocampal organotypic cultures. *Neuroscience*. 1993 Dec; 57(4):985-94. PubMed PMID: 8309556.
- Fukunaga K, **Stoppini L**, Miyamoto E, Muller D. Long-term potentiation is associated with an increased activity of Ca²⁺/calmodulin-dependent protein kinase II. *J Biol Chem*. 1993 Apr 15;268(11):7863-7. PubMed PMID: 8385124.
- Muller D, Buchs PA, **Stoppini L**. Time course of synaptic development in hippocampal organotypic cultures. *Brain Res Dev Brain Res*. 1993 Jan 15;71(1):93-100. PubMed PMID: 8432004.
- Buchs PA, **Stoppini L**, Muller D. Structural modifications associated with synaptic development in area CA1 of rat hippocampal organotypic cultures. *Brain Res Dev Brain Res*. 1993 Jan 15;71(1):81-91. PubMed PMID: 8432003.
- **Stoppini L**, Buchs PA, Muller D. A simple method for organotypic cultures of nervous tissue. *J Neurosci Methods*. 1991 Apr;37(2):173-82. PubMed PMID: 1715499.
- Muller D, Buchs PA, **Stoppini L**, Boddeke H. Long-term potentiation, protein kinase C, and glutamate receptors. *Mol Neurobiol*. 1991;5(2-4):277-88. Review. PubMed PMID: 1668389.

- **Stoppini L**, Baertschi AJ. Activation of portal-hepatic osmoreceptors in rats: role of calcium, acetylcholine and cyclic AMP. *J Auton Nerv Syst.* 1984 Nov;11(3):297-308. PubMed PMID: 6150955.
- **Stoppini L**, Barja F, Mathison R, Baertschi J. Spinal substance P transmits bradykinin but not osmotic stimuli from hepatic portal vein to hypothalamus in rat. *Neuroscience.* 1984 Apr;11(4):903-12. PubMed PMID: 6204251.
- **Stoppini L**, Baertschi AJ, Mathison R, Barja F. Neural actions of several substance P antagonists in the rat spinal cord. *Neurosci Lett.* 1983 Jun 30;37(3):279-83. PubMed PMID: 6193460.

Book Chapters

- Lisa Hoetling, **Luc Stoppini**, Marcel Leist: Generation and use of different types of neuronal and other CNS-relevant cells from stem cells (ESC and iPS) for toxicology assessment, including most adequate cell culture formats (2D, 3D) in Predictive Toxicology - from Vision to Reality (Editors Friedlieb Pfannkuch; Laura Suter-Dick) Wiley-VCH Publisher, Weinheim (D) Methods and Principles in Medicinal Chemistry 2014
 - **Stoppini, L**; Sandström, J; Charvet, I; Zurichm MG; Sundstrom, L; Monnet-Tschudi, F. 3D in vitro Models for Developmental Neurotoxicity (DNT). in: Neural Cell Biology, Wang C and Slikker W Jr, editors. In: Science Publishers, CRC Press / Taylor and francis group (in press).
 - L.E.Sundstrom, **L.Stoppini** : Organotypic Microtissues On An Air-Liquid Interface Technology Platforms for 3D Cell Culture: A Users GuideEditor: Stefan Przyborski, Professor of Cell Technology Durham University, United Kingdom (in press).
-