Gildas LOUSSOUARN
l'institut du thorax - Inserm UMR1087 - CNRS UMR6291 Research Director (DR2)
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POSITIONS and HONORS

Visiting Scientist, University of California San Francisco **2012-2013**
Focus: collaboration with the laboratory of Daniel Minor on sodium channels structure/function

Research Director (CNRS) **2011-**
Focus: Molecular physiology of potassium channels.
L'institut du thorax, University of Nantes. Director: R. Redon, PhD

Research associate (CNRS) **2001-2011**
Focus: Molecular physiology of potassium channels.
L'institut du thorax, University of Nantes. Director: D. Escande, MD, PhD/ P. Pacaud, PhD

HDR (Habilitation à Diriger des Recherches) **2005**
"from biophysics to bedside"

Post-Doctorate **1997-2001**
Focus: Structure and regulation of cardiac K_{ATP} channels
Department of Cellular Biology. Washington University of St Louis, USA
Principal Investigator: C.G. Nichols, PhD

Doctorate (University of Paris XI) **1994-1997**
Focus: pathophysiology of cystic fibrosis; role of CFTR in K channel regulation
INSERM CJF 96.01. University of Nantes. Principal Investigator: D. Escande, MD, PhD

FUNDINGS

Marie-Curie (2012-2013): 150.000 euros
AFM (2013-2014): 50.000 euros
Genavie (2016, 2019): 28.000 euros
PHC-Kolmogorov 2015-2017 : 15.000 euros
Fédération Française de Cardiologie, partner (2019-2022) : 300.000 euros
Région pays de Loire, partner (2020-2022): 150.000 euros
ANR COVID-19 (2020), partner: 200.000 euros

MEMBERSHIPS

Member, Biophysical Society (1998-)
Member, Société Française de Cardiologie (2007-)

EDITOR FOR: Pharmacology of ion channels and channelopathies

REFEREE FOR:

Journals: 'Wellcome Open Research','Frontiers in Cellular Neuroscience', 'Nature Communications, 'Journal of Molecular and Cellular Cardiology', 'Journal of Physiology', 'Pflugers Archiv-European Journal of Physiology', 'Journal of General Physiology', 'Journal of Biological Chemistry', 'Human Genetics', 'British Journal of Pharmacology', 'Plos One', 'Biophysical Journal', 'Expert Reviews in Molecular Medicine', Nature Chemical Biology',' Journal of Medical and Biological Engineering', 'Cellular Physiology and Biochemistry',' BBA – Biomembranes'

Funding agencies: The Human Frontiers Science Program, The Wellcome Trust, the National Science Foundation, the Israel Science Foundation, the Biotechnology and Biological Sciences Research Council, the binational Science Foundation, the FONDECYT, the AFM, the Austrian academy of Science, the Musculoskeletal Research Center in St Louis, The ARDoC santé Ile de France, and the Agence Nationale de la Recherche.

Original articles

43. MONTNACH J, BARÓ I, CHARPENTIER, DE WAARD M, LOUSSOUARN G, Modeling sudden cardiac death risks factors in covid-19 patients – the hydroxychloroquine and azithromycin case. Europace (sous presse).

42. MONTNACH J, LORENZINI M, LESAGE A, SIMON A, , NICOLAS S, MOREAU E, Céline MARIONNEAU C, BARÓ I, DE WAARD M, LOUSSOUARN G, Computer modeling of whole-cell voltage-clamp analyses to delineate guidelines for good practice of manual and automated patch-clamp. Scientific Reports 2021 11(1):328.

41. DE WAARD S, MONTNACH J, RIBEIRO B, NICOLAS S, FOREST V, CHARPENTIER F, MANGONI ME, GABORIT N, RONJAT M, **LOUSSOUARN G**, LEMARCHAND P, DE WAARD M. Functional Impact of BeKm-1, a High-Affinity hERG Blocker, on Cardiomyocytes Derived from Human-Induced Pluripotent Stem Cells. Int J Mol Sci. 2020;21:7167

40. AL SAYED ZR, CANAC R, CIMAROSTI B, BONNARD C, GOURRAUD JB, HAMAMY H, KAYSERILI H, GIRARDEAU A, JOUNI M, JACOB N, GAIGNERIE A, CHARIAU C, DAVID L, FOREST V, MARIONNEAU C, CHARPENTIER F, **LOUSSOUARN G**, LAMIRAULT G, REVERSADE B, ZIBARA K, LEMARCHAND P, GABORIT N. Human model of IRX5 mutations reveals key role for this transcription factor in ventricular conduction. Cardiovasc Res. 2020:cvaa259

39. MALAK OA, ABDEREMANE-ALI F, WEI Y, COYAN FC, PONTUS G, SHAYA D, MARIONNEAU C, **LOUSSOUARN G**. Up-regulation of voltage-gated sodium channels by peptides mimicking S4-S5 linkers reveals a variation of the ligand-receptor mechanism. Sci Rep. 2020: 10(1):5852.

38. MALAK OA, GLUHOV GS, GRIZEL AV, KUDRYASHOVA KS, SOKOLOVA OS, **LOUSSOUARN G.** Voltage-dependent activation in EAG channels follows a ligand-receptor rather than a mechanical-lever mechanism. J Biol Chem. 294:6506-21, 2019 IF 4.1 (2018)

37. KARLOVA M, VOSKOBOYNIKOVA N, GLUHOV GS, ABRAMOCHKIN D, MALAK OA, MULKIDJANIAN A, **LOUSSOUARN G**, SHAITAN K, STEINHOFF HJ, SOKOLOVA OS. Detergent-free solubilization of human Kv channels, expressed in mammalian cells. Chemistry and Physics of Lipids. 2019:50-57, 2019. IF 2.094

36. MONTNACH J, CHIZELLE FF, BELBACHIR N, CASTRO C, LI L, **LOUSSOUARN G**, TOUMANIANTZ G, CARCOUËT A, MEINZINGER AJ, SHMERLING D, BENITAH JP, GÓMEZ AM, CHARPENTIER F, BARÓ I. Arrhythmias precede cardiomyopathy and remodeling of Ca2+ handling proteins in a novel model of long QT syndrome. *J Mol Cell Cardiol,* 123:13-25, 2018. IF 5.055

35. BUREL S, COYAN FC, LORENZINI M, MEYER MR, LICHTI CF, BROWN JH, **LOUSSOUARN G**, CHARPENTIER F, NERBONNE JM, TOWNSEND RR, MAIER LS, MARIONNEAU C. C-terminal

phosphorylation of Nav1.5 impairs FGF13-dependent regulation of channel inactivation. *J Biol Chem*. 292:17431-48, 2017. IF 4.01

34. MALAK OA, ES-SALAH-LAMOUREUX Z, **LOUSSOUARN G**. hERG S4-S5 linker acts as a voltage-dependent ligand that binds to the activation gate and locks it in a closed state. Sci Rep. 2017 7(1):113 IF 4.6

33. ES-SALAH-LAMOUREUX Z, JOUNI M, MALAK OA, BELBACHIR N, AL SAYED ZR, GANDON-RENARD M, LAMIRAULT G, GAUTHIER C, BARÓ I, CHARPENTIER F, ZIBARA K, LEMARCHAND P, BEAUMELLE B, GABORIT N, **LOUSSOUARN G**. HIV-Tat induces a decrease in i_{KR} and i_{KS} via reduction in phosphatidylinositol-(4,5)-bisphosphate availability. J Mol Cell Cardiol. 99:1-13, 2016. IF 5.7

32. PORTERO V, LE SCOUARNEC S, ES-SALAH-LAMOUREUX Z, BUREL S, GOURRAUD JB, BONNAUD S, LINDENBAUM P, SIMONET F, VIOLLEAU J, BARON E, MOREAU E, SCOTT C, CHATEL S, **LOUSSOUARN G**, O'HARA T, MABO P, DINA C, LE MAREC H, SCHOTT JJ, PROBST V, BARÓ I, MARIONNEAU C, CHARPENTIER F, REDON R. Dysfunction of the voltage-gated k+ channel β2 subunit in a familial case of Brugada syndrome. J Am Heart Assoc. 5(6), 2016. IF 5.1

31. JOUNI M, SI-TAYEB K, ES-SALAH-LAMOUREUX Z, LATYPOVA X, CHAMPON B, CAILLAUD A, RUNGOAT A, CHARPENTIER F, **LOUSSOUARN G**, BARÓ I, ZIBARA K, LEMARCHAND P, GABORIT N. Toward Personalized Medicine: Using Cardiomyocytes Differentiated From Urine-Derived Pluripotent Stem Cells to Recapitulate Electrophysiological Characteristics of Type 2 Long QT Syndrome. *J Am Heart Assoc*. 4(9), 2015. IF 4.31

30. MORENO C, DE LA CRUZLA A, OLIVERAS A, KHARCHE SR, GUIZY M, COMES N, STARÝ T, RONCHI C, ROCCHETTI M, BARÓ I, **LOUSSOUARN G**, ZAZA A, SEVERI S, FELIPE A, VALENZUELA C. Marine n-3 PUFAs modulate IKs gating, channel expression, and location in membrane microdomains. *Cardiovasc Res*. 105:223-32, 2015. IF 5.47

29. BEZIAU DM, BARC J, O'HARA T, LE GLOAN L, AMAROUCH MY, SOLNON A, PAVIN D, LECOINTE S, BOUILLET P, GOURRAUD JB, GUICHENEY P, DENJOY I, REDON R, MABO P, LE MAREC H, **LOUSSOUARN G**, KYNDT F, SCHOTT JJ, PROBST V, BARÓ I. Complex Brugada syndrome inheritance in a family harbouring compound SCN5A and CACNA1C mutations. *Basic Res Cardiol*. 109:446, 2014. IF 5.96.

28. COYAN F, ABDEREMANE-ALI F, AMAROUCH MY, PIRON J, MORDEL J, NICOLAS CS, STEENMAN M, MEROT J, MARIONNEAU C, THOMAS A, BRASSEUR R, BARÓ I, **LOUSSOUARN G**. A Long QT Mutation Substitutes Cholesterol for Phosphatidylinositol-4,5-Bisphosphate in KCNQ1 Channel Regulation. PLoS One. 9:e93255, 2014. IF 3.73

27. SHAYA D, FINDEISEN F, ABDEREMANE-ALI F, ARRIGONI C, WONG S, NURVA SR, **LOUSSOUARN G**, MINOR DL, Jr. Structure of a Prokaryotic Sodium Channel Pore Reveals Essential Gating Elements and an Outer Ion Binding Site Common to Eukaryotic Channels. *J Mol Biol*. 426:467-83, 2014. IF 2.48

26. ABDEREMANE-ALI F, ES-SALAH-LAMOUEUX Z, DELEMOTTE L, KASIMOVA MA, LABRO AJ, SNYDERS DJ, FEDIDA D, TAREK M, BARÓ I, **LOUSSOUARN G**. Dual effect of PIP_2 on Shaker K+ channels. *J Biol. Chem.* 287:36158-67, 2012. IF 4.7

25. LAURENT G, SAAL S, AMAROUCH M.Y, BEZIAU D.M, MARSMAN R.F.J, FAIVRE L, BARC J, DINA C, BERTAUX G, BARTHEZ O, THAUVIN-ROBINET C, CHARRON P, FRESSART V, MALTRET A, VILLAIN E, BARON E, MEROT J, TURPAULT R, COUDIERE Y, CHARPENTIER F, SCHOTT JJ, **LOUSSOUARN G**, WILDE A, WOLF JE, BARÓ I, KYNDT F, PROBST V. F, Multifocal Ectopic Purkinje-related Premature Contractions: a new SCN5A-related cardiac channelopathy. *J Am Coll Cardiol* 60, 144-156, 2012. IF 14.29

24. LABRO AJ, BOULET IR, CHOVEAU F, MAYEUR E, BRUYNS T, **LOUSSOUARN G**, RAES AL, SNYDERS DJ. The S4-S5 linker of KCNQ1 channels forms a structural scaffold with the S6 segment controlling gate closure. *J Biol Chem.* 286:717-25, 2011. IF 5.33

23. CHOVEAU F, RODRIGUEZ N, ABDEREMANE ALI F, LABRO AJ, ROSE T, DAHIMENE S, BOUDIN H, LE HENAFF C, ESCANDE D, SNYDERS DJ, CHARPENTIER F, MEROT J, BARO I, **LOUSSOUARN G.** KCNQ1 channels voltage dependency through a voltage-dependent binding of the S4-S5 linker to the pore domain. *J Biol Chem.* 286:707-16, 2011. IF 5.33

22. PIRON J, CHOVEAU FS, AMAROUCH MY, RODRIGUEZ N, CHARPENTIER F, MEROT J, BARO I, **LOUSSOUARN G.** KCNE1-KCNQ1 osmoregulation by interaction of phosphatidylinositol-4,5-bisphosphate

with Mg2+ and polyamines. *J Physiol*, 588:3471-3483, 2010. IF 4.76 → **Cf aussi "Comments" par N. Gamper in *J Physiol.* 588:3631-2, 2010**

21. RODRIGUEZ N, AMAROUCH MY, MONTNACH J, PIRON J, LABRO AJ, CHARPENTIER F, MEROT J, BARO I, **LOUSSOUARN G.** Phosphatidylinositol-4,5-bisphosphate (PIP_2) stabilizes the open pore conformation of the Kv11.1 (hERG) channel. *Biophysical J*, 99:1110-1118, 2010**.** IF 4.39

20. CHOVEAU FS, EL HARCHI A, RODRIGUEZ N, LOUERAT-ORIOU B, BARÓ I, DEMOLOMBE S, CHARPENTIER F, **LOUSSOUARN G.** Transfer of rolf S3-S4 linker to hERG eliminates activation gating but spares inactivation. Biophysical J, 97:1323-1334, 2009. IF 4.39

19. HAISSAGUERRE M, CHATEL S, SACHER F, WEERASOORIYA R, PROBST V, **LOUSSOUARN G,** HORLITZ M, LIERSCH R, SCHULZE-BAHR E, WILDE A, KAAB S, KOSTER J, RUDY Y, LE MAREC H, SCHOTT JJ. Ventricular fibrillation with prominent early repolarization associated with a rare variant of KCNJ8/KATP channel. J Cardiovasc Electrophysiol 20:93-8, 2009. IF 3.70

18. PEROZ D, DAHIMENE D, BARÓ I, **LOUSSOUARN G**, MEROT J. LQT1 associated mutations increase KCNQ1 proteasomal degradation independently of derlin-1. J Biol Chem. 284:5250-6, 2009. IF 5.33

17. NICOLAS C, PARK KH, EL HARCHI A, CAMONIS J, KASS RS, ESCANDE D, MEROT J, **LOUSSOUARN G**, LE BOUFFANT F, BARÓ I. IKs response to protein kinase A-dependent KCNQ1 phosphorylation requires direct interaction with microtubules. Cardiovasc Res 79:427-35, 2008. IF 5.95

16. BAUDOUIN SJ, ANGIBAUD J, **LOUSSOUARN G**, BONNAMAIN V, MATSUURA A, KINEBUCHI M, NAVEILHAN P, BOUDIN H. The signaling adaptor protein CD3zeta is a negative regulator of dendrite development in young neurons. Mol Biol Cell. 19:2444-2456, 2008. IF 5.56

15. **LOUSSOUARN G,** MARTON J, NICHOLS CG. Molecular Basis of Inward-rectification: Structural features of the blocker defined by extended polyamine analogs. *Molecular Pharmacology* **68**, 298-304, 2005. IF 4.61

14. PARK KH, PIRON J, DAHIMENE D, MÉROT J, BARÓ I, ESCANDE D, **LOUSSOUARN G**. Impaired KCNQ1/KCNE1 and Phosphatidylinositol-4,5-bisphosphate interaction underlies the Long QT Syndrome. *Circulation Research* **96**, 730-739,2005. IF 9.41

13. ROYER A, DEMOLOMBE S, EL HARCHI A, LE QUANG K, PIRON J, TOUMANIANTZ G, MAZURAIS D, BELLOCQ C, LANDE G, TERRENOIRE C, MOTOIKE HK, CHEVALLIER JC, **LOUSSOUARN G**, CLANCY CE, ESCANDE D, CHARPENTIER F. Expression of human ERG K(+) channels in the mouse heart exerts anti-arrhythmic activity. *Cardiovascular Research* **65**, 128-137,2005. IF 5.28

12. KURATA H.T, PHILLIPS L.R, ROSE T, **LOUSSOUARN G,** HERLITZE S, FRITZENSCHAFT H, ENKVETCHAKUL D, NICHOLS C.G, BAUKROWITZ T. Molecular basis of inward rectification: polyamine interaction sites located by combined channel and ligand mutagenesis. *Journal of General Physiology* **124**,541-554,2004. IF 5.10

11. **LOUSSOUARN G,** PARK KH, BELLOCQ C, BARO I, CHAPENTIER, F, ESCANDE D. Phosphatidylinositol-4,5-bisphosphate, PIP2, Controls KCNQ1/KCNE1 Voltage-gated Potassium Channels: a functional homology between voltage-gated and inward rectifier K+ channels. *EMBO J.* **22**, 5412-21,2003. IF 10.45

10. **LOUSSOUARN G**, PIKE LJ, ASHCROFT FM, MAKHINA EN, NICHOLS CG. Dynamic sensitivity of ATP-sensitive K^+ channels to ATP. *Journal of Biological Chemistry* **276**, 29098-29103, 2001. IF 7.26

9. **LOUSSOUARN G**, ROSE T, PHILLIPS R, MASIA R, NICHOLS CG. Flexibility of the Kir6.2 inward rectifier channel pore. *Proc. Natl. Acad. Sci. USA* **98**,4227-4232, 2001. IF 10.90

8. ENKVETCHAKUL D, **LOUSSOUARN G**, MAKHINA EN, NICHOLS CG. ATP interaction with the open state of the K_{ATP} channels. *Biophysical Journal* **80**,719-728, 2001. IF 4.64

7. GRIBBLE FM, **LOUSSOUARN G**, TUCKER SJ, ZHAO C, NICHOLS C, ASCHCROFT FM. A novel method for measurement of sub-membrane ATP concentration. *Journal of Biological Chemistry* **278**,30046-30049, 2000. IF 7.26

6. ENKVETCHAKUL D, **LOUSSOUARN G**, SHYNG SL, MAKHINA EN, NICHOLS CG. A critical gating transition in K_{ATP} channels: ATP stabilizes a closed-state. *Biophysical Journal* **78**,2334-2348, 2000. IF 4.63

5. **LOUSSOUARN G**, MAKHINA EN, ROSE T, NICHOLS CG. Structure and dynamics of the pore of inward rectifier K_{ATP} channels. *Journal of Biological Chemistry* **275**,1137-1144, 2000. IF 7.26

4. POLLARD H, REMY JS, **LOUSSOUARN G**, DEMOLOMBE S, BEHR JP, ESCANDE D. Polyethylenimine but not cationic lipids promotes transgene nuclear targeting in mammalian cells. *Journal of Biological Chemistry* 273: 7507-7511, 1998. IF 7.20

3. MOHAMMAD-PANAH R, DEMOLOMBE S, RIOCHET D, LEBLAIS V, **LOUSSOUARN G**, POLLARD H, BARÓ I, ESCANDE D. Hyperexpression of recombinant CFTR in heterologous cells alters its physiological properties. *American Journal of Physiology* 274: C310-C318, 1998. IF 3.08

2. **LOUSSOUARN G**, CHARPENTIER F, MOHAMMAD-PANAH R, KUNZELMANN K, BARO I, ESCANDE D. KvLQT1 potassium channel but not Isk is the molecular target for chromanol 293B. *Molecular Pharmacology* 52: 1131-1136, 1997. IF 4.92

1. **LOUSSOUARN G**, DEMOLOMBE S, MOHAMMAD-PANAH R, ESCANDE D, BARÓ I. Expression of CFTR controls cAMP-dependent activation of epithelial K^+ currents. *American Journal of Physiology*, 271: C1565-1573, 1996. IF 3.08

Reviews

11. BEAUMELLE B, TOTH P, MALAK OA, CHOPARD C, **LOUSSOUARN G**, VITALE N. Phosphatidylinositol (4,5)-bisphosphate-mediated pathophysiological effect of HIV-1 Tat protein. *Biochimie* 141:80,2017.

10. **LOUSSOUARN G**, STERNBERG D, NICOLE S, MARIONNEAU C, LE BOUFFANT F, TOUMANIANTZ G, BARC J, MALAK O, FRESSART V, PEREON Y, BARO I AND CHARPENTIER F. Physiological and pathophysiological insights of Nav1.4 and Nav1.5 comparison. *Front. Pharmacol.* 6:314, 2015. IF 3.8

9. **LOUSSOUARN G**. Les courants potassiques rectifiants entrants cardiaques. *Archives de Maladies du cœur et des Vaisseaux Pratique.* 237 :14-27, 2015.

8. ABRIEL H, DE LANGE E, KUCERA JP, **LOUSSOUARN G**, TAREK M. Computational tools to investigate genetic cardiac channelopathies. *Front Physiol.* 2013, 4:39. IF 3.5

7. COYAN FC, **LOUSSOUARN G**. Cholesterol regulation of ion channels: Crosstalk in proteins, crosstalk in lipids. *Channels (Austin).* 7(6), 2013. IF 2.16

6. **LOUSSOUARN G,** TAREK M. Mechanisms of ion channels voltage-dependency: all about molecular sensors, gates, levers, locks and grease. *Front. Pharmacol,* 3:174, 2012 IF 3.8 (IF 2015)

5. CHOVEAU FS, ABDEREMANE ALI F, COYAN FC, ES-SALAH-LAMOUEUX Z, BARÓ I, **LOUSSOUARN G**. Opposite effects of the S4–S5 linker and PIP_2 on voltage-gated channel function: KCNQ1/KCNE1 and other channels. *Front. Pharmacol.* 3:125, 1-16, 2012. IF 3.8 (IF 2015)

4. **LOUSSOUARN G**, BARÓ I. Neural modulation of ion channels in cardiac arrhythmias: Clinical implications and future investigations. *Heart Rhythm.* 7:847-849, 2010. IF 4.44

3. CHARPENTIER F, MEROT J, **LOUSSOUARN G**, BARÓ I. Delayed rectifier K(+) currents and cardiac repolarization. *J Mol Cell Cardio*l, 48:37-44, 2010. IF 5.05

2. PEROZ D, RODRIGUEZ N, CHOVEAU F, BARÓ I, MEROT J, **LOUSSOUARN G**. Kv7.1 (KCNQ1) properties and channelopathies. J Physiol. **586**, 1785-1789, 2008. IF 4.65

1. **LOUSSOUARN G,** ROSE T, NICHOLS CG. Structural Basis of Inward Rectifying Potassium Channel Gating. *Trends in Cardiovascular Medecine* **12**, 253-258, 2002. IF 3.40

Book Chapters

4. DEYAWE A, KASIMOVA MA, DELEMOTTE L, **LOUSSOUARN G**, TAREK M. Studying Kv Channels Function using Computational Methods. In “Methods Mol Biol. Potassium Channels” eds. Show-Ling Shyng, Francis Valiyaveetil and Matt Whorton, Humana Press Methods Mol Biol. 2018; 1684:321-341.

3. NOVOSELETSKY V, MALAK OA, **LOUSSOUARN G**, SOKOLOVA OS. Building Atomic Models of the Ion Channels Based on Low Resolution Electron Microscopy Maps and Homology Modeling. Dans "Methods Mol Biol. Potassium Channels" eds. Show-Ling Shyng, Francis Valiyaveetil and Matt Whorton, Humana Press Methods Mol Biol. 2018; 1684:305-319.

2. NICOLAS C, PIRON J, RODRIGUEZ N, CHOVEAU F, DAHIMENE D, PEROZ D, MÉROT J, BARÓ I and **LOUSSOUARN G**. Molecular description of KCNE1/KCNQ1 cardiopathies. In "Ion Channels Biophysics and Diseases", Research Signpost Publisher, ed. H Duclohier 2009; 13-41.

1. LOUSSOUARN G, BARÓ I, ESCANDE D. KCNQ1 K+ channel-mediated cardiac channelopathies. In "Methods Mol Biol. Ion Channels methods and protocols" eds. JD Stockand. et MS Shapiro, Humana Press 2006; 337:167-83.

Invited communications

19. How voltage-sensor movement transfers to gate opening in several voltage-gated channels. Young Investigator School in Moscow. Moscow, Lomonosov University, November 13 2020

18. Opposite effects of the S4–S5 linker and the phospholipid PIP_2 on voltage-gated channel function: KCNQ1, hERG and other channels. Young Investigator School in Nantes. Nantes, IRS-UN, June 1-2 2017

17. hERG S4-S5 linker acts as a voltage-dependent ligand that binds to the activation gate and locks it in a closed state. Young Investigator School in Moscow. Moscow, Lomonosov University, May 26 2016

16. Molecular mechanisms of Kv and Nav voltage dependent gating: a unified model. Workshop "Computational tools to investigate genetic channelopathies", Beatenberg, January 10-12 2016

15. Canaux sodiques musculaires : vers une nouvelle approche thérapeutique ? Quintessia Hotel, Orvault, September 21 2015

14. Molecular mechanisms of voltage-dependence in Nav and Kv channels, Institut du Cerveau et de la Moelle, November 14 2014.

13. Molecular mechanisms of voltage-dependence in Nav1.4 channels. Groupe Résocanaux, Hôpital Salpêtrière, June 20 2014.

12. Insights into Kv and Nav voltage-dependent gating Implications in channelopathies. Worshop "Computational tools to investigate genetic channelopathies", Beatenberg, October 9-12 2013.

11. Voltage dépendance du canal KCNQ1 et son implication dans les canalopathies. Séminaire externe, Centre de Recherche en Neurobiologie et Neurophysiologie de Marseille, December 6 2010.

10. Simulating ion channels activity: From currents to action potential. Mathematical modeling and computing in electrocardiology (international meeting), Nantes, June 8-9 2009.

9. Intérêt de la modélisation en électrophysiologie cardiaque. Automnales du GRRC. Fontevraud, Decembre 2-4 2009.

8. Insights into KCNQ1 and HERG voltage-dependent gating. Implications in cardiopathies. Ion channels Symposium 2008, Copenhague, Danemark, May 22-23 2008.

7. Molecular mechanism underlying KCNQ1 voltage dependency: the channel gate is locked closed by the S4-S5 linkers. Joint meeting of the Slovak Physiological Society, the Physiological Society and the Federation of European Physiological Society. Bratislava, September 11-14 2007.

6. Phosphoinositides modulation of ion channels. Biosensors International Summerschool. Berder, August 25-31 2007.

5. Homologies in molecular physiology between Kv and Kir channels. Colloque ANR. Nancy, May 9-10 2007.

4. Homologies structurales et fonctionnelles chez les canaux potassiques. Ecole polytechnique, Paris, January 2003.

3. Polyamine interaction with inward rectifier K channels: *In vitro* and *in silico* correlates. Worshop in bioinformatics, Le Croisic, November 2002.

2. Polyamine conformation and localization when blocking inward rectifier K channels. 13ème colloque de l'association « canaux ioniques », Giens, September 2002.

1. Cinétique d'expression hétérologue de la protéine CFTR. Atelier des protéines membranaires, Vaincre La Mucoviscidose, Paris, June 1996.

Abstracts

57. RIBEIRO DE OLIVEIRA MENDES B, MONTNACH J, NICOLAS S, OLLIVIER B, CHATELAIN FC, FOREST V, FELICIANGIELI S, KYNDT F, PROBST V, LESAGE F, DENJOY I, **LOUSSOUARN G**, DE WAARD M. Functional Characterization of KCNH2 genetic variants, encoding hERG potassium channel, as a clinically-relevant information for type 2 LQTS syndrome. Archives of Cardiovascular Diseases. 12:257, October 2020.
56. MONTNACH J, RIBEIRO DE OLIVEIRA MENDES B, DE WAARD S, CORREIA E, NICOLAS S, FOREST V, JOPLING C, GABORIT N, LEMARCHAND P, **LOUSSOUARN G**, DE WAARD M. Optical control of hERG channel activityusing a photosensitive Bekm-1 blocker. Archives of Cardiovascular Diseases. 12:258, October 2020.
G, IWAMOTO T, BARC J, PROBST V, KYNDT F, REDON R, MAKITA N, CHARPENTIER F, SCHOTT JJ. Identification and functional characterization of the first SLC8A1 variants responsible for idiopathic ventricular fibrillation, J wave syndrome and short QT syndrome. European Working Group in Cardiac Electrophysiology, Essen, June 2018.
54. CHIZELLE F, ISHIKAWA T, **LOUSSOUARN G**, IWAMOTO T, BARC J, PROBST V, KYNDT F, REDON R, MAKITA N, CHARPENTIER F, SCHOTT JJ. Identification and functional characterization of the first variants in the SLC8A1 gene responsible for idiopathic ventricular fibrillation. Printemps de la Cardiologie, Montpellier, April 2018.
53. MALAK OA, ES-SALAH-LAMOUREUX Z, **LOUSSOUARN G**. hERG s4-s5 linker acts as a voltage-dependent ligand that binds to the activation gate and locks it in a closed state. Archives of Cardiovascular Diseases. 9:203, Nantes, April 2017.
52. ES-SALAH-LAMOUREUX Z, JOUNI M, MALAK OA, BELBACHIR N, AL SAYED ZR, GANDON-RENARD M, LAMIRAULT G, GAUTHIER C, BARO I, CHARPENTIER F, ZIBARA K, LEMARCHAND P, BEAUMELLE B, GABORIT N, **LOUSSOUARN G**. Hiv-Tat induces a decrease in I-Kr and I-Ks via reduction in Phosphatidy-Inositol-(4,5)-Bisphosphate availability. Biophysical J., 112: 405A, Nouvelle Orleans, Feb 2017
51. ES-SALAH-LAMOUREUX Z, JOUNI M, MALAK OA, BELBACHIR N, AL SAYED ZR, GANDON-RENARD M, LAMIRAULT G, GAUTHIER C, BARO I, CHARPENTIER F, ZIBARA K, LEMARCHAND P, BEAUMELLE B, GABORIT N, **LOUSSOUARN G**. A molecular substrate for long QT in HIV patients: Tat protein reduces IKr in human induced pluripotent stem cells-derived cardiomyocytes. Channelpathy meeting, Paris, June 2016.
50. ES-SALAH-LAMOUREUX Z, JOUNI M, MALAK OA, BELBACHIR N, GANDON-RENARD M, LAMIRAULT G, GAUTHIER C, BARO I, CHARPENTIER F, ZIBARA K, LEMARCHAND P, BEAUMELLE B, GABORIT N, **LOUSSOUARN G**. A molecular substrate for long qt in hiv patients: tat protein reduces ikr in human induced pluripotent stem cells-derived cardiomyocytes. Biophysical J., 110: 103A, Los Angeles, Feb 2016.
49. MALAK OA, ES-SALAH-LAMOUREUX Z, **LOUSSOUARN G**. hERG s4-s5 acts as a voltage-dependent ligand binding the activation gate and locking it in a closed state. Biophysical J., 110: 278A, Feb 2016.
48. ES-SALAH-LAMOUREUX Z, JOUNI M, LAMIRAULT G, GAUTHIER C, BARO I, CHARPENTIER F, ZIBARA K, LEMARCHAND P, BEAUMELLE B, GABORIT N, **LOUSSOUARN G**. Mechanism of induction of cardiac arrhythmias in HIV patients. European Working Group in Cardiac Electrophysiology, Milan, June 2015.
47. JOUNI M, SI-TAYEB K, ES-SALAH-LAMOUREUX Z, LATYPOVA X, CHAMPON B, RUNGOAT A, CHARPENTIER F, **LOUSSOUARN G**, ZIBARA K, LEMARCHAND P, GABORIT N. Using cardiomyocytes differentiated from urine-derived hiPSCs to recapitulate electrophysiological characteristics of LQT2 syndrome. Archives of Cardiovascular Diseases 7:165, Apr 2015.
46. JOUNI M, CHAMPON B, CHARPENTIER F, LOUSSOUARN G, BARO I, RUNGOAT A, LATYPOVA X, DAVID L, DEREVIER A, ZIBARA K, LEMARCHANDA P, GABORIT N. Electrophysiological characterization of a novel SCN5A mutation causing Brugada syndrome, using cardiomyocytes differentiated from hiPSCs.. Archives of Cardiovascular Diseases 7:169, Apr 2015.

45. FINDEISEN F, SHAYA D, ABDEREMANE-ALI F, ARRIGONI C, **LOUSSOUARN G**, MINOR DL, Jr. Identification of a Determinant of High Affinity Calcium Binding in the Selectivity Filter of a Mammalian Calcium Channel. Biophysical J., 106: 331A, Feb 2014.
44. ARRIGONI C,SHAYA D, FINDEISEN F, ABDEREMANE-ALI F, **LOUSSOUARN G**, MINOR DL, Jr. Structure of a Prokaryotic Sodium Channel Pore Reveals Essential Gating Elements and an Outer Ion Binding Site Common to Eukaryotic Channels. Biophysical J., 106: 130A, Feb 2014.
43. COYAN F., AMAROUCH M.Y., ABDEREMANE-ALI F., PIRON J., MORDEL J., NICOLAS C.S., STEENMAN M., MEROT J., MARIONNEAU C., THOMAS A., BRASSEUR R., BARÓ I., **LOUSSOUARN G.** In KCNQ1 Channels, a Long QT Mutation Induces a Regulation by Phosphatidylinositol-4,5-bisphosphate in channel regulation. Biophysical J., 106: 140A, Feb 2014.
42. COYAN F, AMAROUCH M.Y, PIRON J, MORDEL J, NICOLAS C.S, THOMAS A, BRASSEUR R, CHARPENTIER F, MEROT J, BARÓ I, **LOUSSOUARN G.** KCNQ1-R539W mutation substitutes cholesterol for phosphatidylinositol-4,5-bisphosphate in channel regulation. 24es Journées Européennes de la Société Française de Cardiologie, 2014.
41. ABDEREMANE-ALI F, ES-SALAH-LAMOUEUX Z, DELEMOTTE L, KASIMOVA MA, LABRO AJ, SNYDERS DJ, FEDIDA D, TAREK M, BARÓ I, **LOUSSOUARN G**. Dual effect of PIP2 on Shaker K+ channels. Biophysical J, 104:464A, 2013.
40.LAURENT G, SAAL S, AMAROUCH M.Y, BEZIAU D.M, MARSMAN R.F.J, DINA C, CHARRON P, MALTRET A, TURPAULT R, WILDE A, WOLF JE, **LOUSSOUARN G**, KYNDT F, PROBST V. F, BARÓ I. R222Q Nav1.5 mutation associated with a new SCN5A-related cardiac arrhythmia. Biophysical Society meeting 2012. Biophysical J, 102:527A, 2012.
39. CHATEL S., SACHER F., CHAIGNE S., LOUSSOUARN G., BARO I., KYNDT F., LE MAREC H., PROBST V., HAISSAGUERRE M., SCHOTT JJ. KATP channels and Early Repolarization Syndrome. European Heart Journal, 33 :971, 2012.
38. PIRON J, AMAROUCH M.Y, COYAN F, MORDEL J, NICOLAS C.S, THOMAS A, BRASSEUR R, CHARPENTIER F, MEROT J, BARÓ I, **LOUSSOUARN G.** KCNQ1-R539W mutation substitutes cholesterol for phosphatidylinositol-4,5-bisphosphate in channel regulation. Biophysical Society meeting 2011. Biophysical J, 100:428, 2011.
37. AMAROUCH M.Y, LAURENT G, SAAL S, FAIVRE L, BERTAUX G, FALCON-EICHER S, BARTHEZ O, THAUVIN-ROBINET C , CHARRON P, RICHARD P, DE CHILLOU C, PROBST V, BARON E, BARÓ I, BARC J, SCHOTT JJ, MEROT J, COUDIERE Y, TURPAULT R, **LOUSSOUARN G**, KYNDT F, WOLF JE. A novel familial cardiac arrhythmia associated with a dilated cardiomyopathy is due to a mutation in SCN5A. Printemps de la cardiologie. 15-17 avril 2010, Nantes. Archives of Cardiovascular diseases. 2: 41, 2010.
36. LAURENT G, SAAL S, AMAROUCH MY, FAIVRE L, THAUVIN-ROBINET C, CHARRON P, RICHARD P, PROBST V, BARON E, BARÓ I, BARC J, SCHOTT JJ, MEROT J, TURPAULT R, COUDIERE Y, **LOUSSOUARN** G, Kyndt F, Wolf JE. Multifocal Ectopic Purkinje Tachycardia: A New Familial Syndrome. American Heart Association Scientific Session. November 2010. Circulation. 122: A17090, 2010.
35. AMAROUCH M.Y, SAAL S, BERTAUX G, FAIVRE L, FALCON-EICHER S,BARON E, THAUVIN-ROBINET C , BARC J, BARTHEZ O, MEROT J, CHARRON P, RICHARD P, PROBST V, DE CHILLOU C, BARÓ I, SCHOTT JJ, WOLF JE, KYNDT F, **LOUSSOUARN G**, LAURENT G. Mutation of cardiac Nav1.5 in a novel autosomic dominant in a hisian-type arrhythmia, associated with dilated cardiomyopathy. Biophysical Society meeting 2010. Biophysical J, 1616-Pos, 2010.
34. CHOVEAU F, El HARCHI A, RODRIGUEZ N, LOUERAT-ORIOU B, BARÓ I, DEMOLOMBE S, CHARPENTIER F, **LOUSSOUARN G.** Transfer of rolf S3-S4 linker to hERG eliminates activation gating but spares inactivation? GRRC, 26^{éme} congrès du GRRC. 2-3 avril 2009, Nancy. Archives of Cardiovascular diseases. 102-S62, 2009.
33. EL HARCHI A, CHOVEAU FS, RODRIGUEZ N, LOUERAT-ORIOU B, BARO I, DEMOLOMBE S, CHARPENTIER F, **LOUSSOUARN G.** Transfer of rolf S3-S4 linker to hERG eliminates activation gating but spares inactivation. Biophysical Society meeting 2009. Biophysical J, 977-Pos, 2009.
32. BAUDOUIN S.J, ANGIBAUD J, **LOUSSOUARN G,** NAVEILHAN P, BOUDIN H. The role of the signalling protein CD3zeta in neuronal development: from dendritic outgrowth regulation to synaptic expression. FENS 2008.
31. RODRIGUEZ N, BARÓ I, **LOUSSOUARN G.** Does The Phosphoinositide PIP_2 Stabilize HERG Channel Open State? Biophysical Society meeting 2008. Biophysical J, 1332-Pos, 2008.
30. CHOVEAU F, DAHIMENE D, RODRIGUEZ N, LE HENAFF C, MEROT J, ESCANDE D, BARÓ I, **LOUSSOUARN G.** Des fragments peptidiques du canal potassique cardiaque KCNQ1 pour contrôler sa voltage-dépendance. GRRC. 24^{éme} congrès du GRRC. 25-27 avril 2007, Tours.

29. NICOLAS C.S, PARK K.H, EL HARCHI A, CAMONIS J, KASS R.S, ESCANDE D, MEROT J, **LOUSSOUARN G,** LE BOUFFANT F, BARÓ, I. Iks response to PKA-dependent phosphorylation requires direct interaction with the microtubules. Biophysical Society meeting 2007. Biophysical J, L160-Pos (late abstract), 2007.
28. PIRON J, DAHIMENE D, MEROT J, ESCANDE D, BARÓ I, **LOUSSOUARN G.** Phosphoinositide PIP_2-KCNQ1 interaction implicated in channel osmoregulation. Biophysical Society meeting 2007. Biophysical J, 509-Pos, 2007.
27. CHOVEAU F, DAHIMENE D, LE HENAFF C, MEROT J, ESCANDE D, BARÓ I, **LOUSSOUARN G.** Operation of a voltage-dependent channel by its S4-S5 linker. Biophysical Society meeting 2007. Biophysical J, 883-Plat, 2007.
26. KURATA H.T, PHILLIPS L.R, ROSE T, **LOUSSOUARN G,** HERLITZE S, FRITZENSCHAFT H, ENKEVETCHAKUL D, BAUKROWITZ T, NICHOLS CG. Molecular basis of inward rectification: Localizing Polyamine Binding Sites in Kir channels. Biophysical Society meeting 2005. Biophysical J, 1390-Pos, 2005.
25. PARK K.H, DAHIMENE D, MÉROT J, BARÓ I, ESCANDE D, **LOUSSOUARN G.** Reduced phosphatidylinositol-4,5-bisphosphate and KCNQ1 channel interaction in the Long QT Syndrome. Biophysical Society meeting 2005. Biophysical J, 2220-Pos, 2005.
24. PARK K.H, LE BOUFFANT, F, ALCOLEA S, MEROT J, CAMONIS J, **LOUSSOUARN G,** BARO, I. Beta-tubulin, a new regulator of the slow delayed rectifier potassium current Iks. American Heart Association Scientific Session. Novembre 2004, New Orleans.
23. PARK K.H, LE BOUFFANT, F, ESCANDE, D , **LOUSSOUARN G,** BARO, I. Beta-tubulin, a new regulator of the slow delayed rectifier potassium current Iks. GRRC. 21^{éme} congrès du GRRC. 22-23 avril 2004, La Baule. Publié dans les Archives des maladies des vaisseaux et du coeur.
22. PARK, K.H, **LOUSSOUARN G,** ESCANDE D. Régulation du complexe KCNQ1/KCNE1 par le PIP2 et le MgATP intracellulaire. GRRC. 20^{éme} congrès du GRRC. 15 et 16 avril 2003. Publié dans les Archives des maladies des vaisseaux et du cœur.
21. **LOUSSOUARN G,** ESCANDE D. Functional KCNQ1/KCNE1 channel complex requires both intracellular PIP_2 and MgATP. Publié dans Biophysical J, 2678-Pos, 2003
20. PHILLIPS R , **LOUSSOUARN G,** NICHOLS C.G. Cold draft through the tepee: MTSEA access to the inner vestibule of ATP closed Kir6.2 channels implies gating does not occur at the smokehole. Publié dans Biophysical J, 2885-Pos, 2002
19. **LOUSSOUARN G,** ENKVETCHAKUL D, VALASINAS A, REDDY V.K, BASU H.S, FRYDMAN B, NICHOLS C.G. Using polyamine analogs as probes to define structural constraints for block of inward rectifier K channels. Biophysical J, 2887-Pos, 2002.
18. ENKVETCHAKUL D**, LOUSSOUARN G,** MAKHINA E.N, NICHOLS C.G. ATP interaction with the open state of K_{ATP} channels: evidence for allosteric gating mechanism. Publié dans Biophysical J, 2189-Plat, 2001.
17. **LOUSSOUARN G,** PIKE L.J, ASHCROFT F.M, MAKHINA E.N, NICHOLS C.G.Dynamic sensitivity of K_{ATP} channels to ATP. Publié dans Biophysical J, 27-Plat, 2001.
16. ROSE T, **LOUSSOUARN G**, PHILLIPS R, NICHOLS C.G. Exploring the pore structure of the inwardly rectifying Kir6.2 channel. Publié dans Biophysical J, 65-Plat, 2001.
15. **LOUSSOUARN G,** ROSE T, MAKHINA E.N, NICHOLS C.G. Conformationnal flexibility of inward rectifier K channel pore. Publié dans Biophysical J, 2027-Pos, 2000.
14. **LOUSSOUARN G,** MAKHINA E.N, ROSE T, NICHOLS C.G. Structure and dynamics of the pore of inward rectifier of K_{ATP} channels. Congrès de l'American Physiological Society. Biology of Potassium Channels: From Molecules to Disease. Publié dans The Physiologist 42, 4, 1999.
13. **LOUSSOUARN G,** MAKHINA E.N, NICHOLS C.G. Structure of the second transmembrane domain of Kir6.2 revealed by the Substituted Cysteine Accessibility Method. Biophysical J, A73, 1999.
12. MAKHINA E.N, **LOUSSOUARN G,** NICHOLS C.G. The M2 transmembrane domain of Kir6.2 controls ATP sensitivity of cloned K_{ATP} channels. Publié dans J. Physiol, 509.P, 37P, 1998.
11. **LOUSSOUARN G,** MAKHINA E.N, NICHOLS C.G. A cysteine residue (C166) in Kir 6.2 is responsible for Cd^{2+} inhibition of cloned K_{ATP} channels. Publié dans J. Physiol, 509.P, 37P, 1998.
10. DEMOLOMBE S, BARO I, BLIEK J, MOHAMMAD PANAH R, **LOUSSOUARN G**, MANNENS M, WILDE A. , BARHANIN J, CHARPENTIER F, PEREON Y, ESCANDE D. The K^+ channel involved in the long QT Syndrome is a complex made of three different proteins. Publié dans Suppl. to Circulation, 96, I302, 1997.
9. POLLARD H, **LOUSSOUARN G,** BEHR JP, ESCANDE D. Transportation through the nuclear membrane of cDNA complexed with a novel synthetic vector : polyethylemimine. Pediatric Pulmonology, supp 14, 223, 1997.

8. **LOUSSOUARN G,** CHARPENTIER C, MOHAMMAD PANAH R, KUNZELMANN K, BARHANIN J, 7.BARO I, ESCANDE D. The chromanol 293B is a blocker of the KvLQT1 current. Publié dans Suppl. to Circulation, 96, I2383, 1997.
6. DEMOLOMBE S, **LOUSSOUARN G,** LEBLAIS V, FANEN P, ESCANDE D. Fast expression of functional recombinant CFTR protein in human epithelial cells. Publié dans Pediatric Pulmonology, supp 13, 209, 1996.
5. **LOUSSOUARN G,** BARÓ I, DEMOLOMBE S, MOHAMMAD-PANAH R, ESCANDE D. The cystic fibrosis gene product, CFTR, acts as a potassium channel regulator. Suppl. to Circulation, 94, I473, 1996.
4. **LOUSSOUARN G,** DEMOLOMBE S, LEBLAIS V, FANEN P, ESCANDE D. Hyperexpression of recombinant CFTR protein altered its sensitivity to cAMP-stimulation. Publié dans Pediatric Pulmonology, supp 13, 215, 1996.
3. TAUC M, BIDET M, **LOUSSOUARN G,** POUJEOL P. CFTR expression and cAMP sensitive chloride conductance in primary cultures of rabbit renal tubules. XIIIth International Congress of Nephrology, Juillet 1995.
2. MOHAMMAD-PANNAH R, **LOUSSOUARN G,** ESCANDE D, BARÓ I. CFTR regulates ORCC channels in transfected CFPAC-1 epithelial cells. Publié dans Pediatric Pulmonology, supp 12, 181, 1995.
1. **LOUSSOUARN G,** DEMOLOMBE S, ESCANDE D, BARÓ I. Retroviral CFTR gene transfer to CF epithelial cells influences cAMP-activated K^+ currents. Publié dans Pediatric Pulmonology, supp 12, 181, 1995.