CENTRO INTERDISCIPLINARIO DE Neurociencia de Valparaíso

Universidad de Valparaíso CHILE

CARLOS GONZÁLEZ LEÓN
(email: carlos.gonzalezl@uv.cl)

CURRICULUM VITAE

EDUCATION

1989 BSc & MSc in Biophysics, Moscow State University, Russia.
2004 PhD in Molecular & Cellular Biology and Neuroscience (Biophysics), Universidad de Chile, Chile.

PROFESSIONAL EXPERIENCE

2014 – at present Full Professor, University of Valparaiso, Chile
2015 Adjunct Assistant Professorof Texas Tech University, Texas, USA
2015 Director of PhD Program in Biophysics and Computational biology, UV
2011 Associate Professor, University of Valparaiso, Chile
2011 Associate Researcher, University of Valparaiso, Chile
2010 Associate Scientist, University of Miami, USA
2007-2010 Postdoctoral Associate, University of Miami, USA
2005-2007 Postdoctoral Fellow NINDS, National Institutes of Health, NIH, USA
2004-2005 Postdoctoral Fellow University of Virginia, USA
1999-2004 PhD degree, University of Chile
1994-1999 Assistant Professor, Universidad de La Habana. Cuba.
1990-1994 Instructor. Universidad de La Habana, Cuba.

TEACHING

Selected invited lectures:

2013S4 in Hv channels: Voltage sensor or permeation pathway. Universidad de Talca.
2013 Voltage sensitivity in Hv channels. Pontificia Universidad Católica de Chile.
2011 Editing of human KV1.1 channel mRNAs disrupts binding of the N-terminus tip at the intracellular cavity. Universidad de Valparaiso.
2011 Molecular mechanism of voltage activation in proton channels. Universidad de Valparaiso.
2011 Contribution of S4 charges to gating mechanism in Hv channels, Valle Elquis, Chile.
2009 Voltage-sensing activation mechanism in Proton channels, University of Miami, USA.
2008 Fast-inactivation mechanism of Kv channels revealed by RNA editing, NIH, USA.
2007 Voltage gating mechanism in Kv channels, Florida Atlantic University, USA.
2005 Voltage sensor in Shaker Channels. University of Tallahassee, USA.
2004 Paddle model or not? It is the question! University of Virginia, USA.

International courses

2013"Técnicas electrofisiológicas e imagenológicas aplicadas a fisiología, biofísica y neurociencia:Bases y ejemplos en situaciones experimentales concretas". Montevideo, Uruguay.
2013 International course, Molecular Biology, La Plata Argentina
2010 International Ion channels course, Mar del Plata, Argentina
2002 International course of Molecular Biology in ion channels by postgraduate students in the Medical School at the University of La Republica, Uruguay

2000ICRO/IBRO/TWAS INTERNATIONAL TRAINING COURSE: "Novel Spectroscopic and Physiological Approaches to Neurobiology, Argentina

Courses for MD, PhD and MSc.

2011-2018 Lectures of Ion channels Biophysics for PhD students.

Courses for MD, PhD and MSc

2010-2013 Courses of Cell Physiology for Master in Neuroscience
1997-1998 Physiology courses for Master's programs in Biochemistry, Biology and Microbiology, Faculty of Biology, Universidad de La Habana, Cuba.
1997 Conferences of Physiology for medical doctors, Universidad de La Habana, Cuba.

Courses to Ungraduated Students
2013-2018 Lectures of Cell physiology
2010-2013 Lectures of Biophysics, Faculty of Science, Universidad de Valparaiso, Chile.
1993-1999 Conferences of Biophysics, Faculty of Biology, Department of Physiology, Universidad de La Habana, Cuba.
1993-1999 Conferences of Cell Physiology, Faculty of Biology, Department of Physiology, Universidad de La Habana, Cuba.
1992-1994 Conferences of Pharmacokinetics, Faculty of Pharmacy, Universidad de La Habana, Cuba.
1990-1993 Seminars and Laboratories of Physiology and Anatomy, Faculty of Pharmacy, Universidad de La Habana, Cuba.

TUTORING
Tutoring thesis:
1991 Thesis for the degree of Bachelor of Pharmacy. Pharmacokinetic study of aminocaproic acid produced domestically. Ibet Martínez Sánchez. Faculty of Pharmacy, Universidad de La Habana, Cuba.
1992 Thesis for the degree of Bachelor of Pharmacy. Pharmacokinetic and pharmacodynamic study of neuroleptic Pimozide produced domestically. Juan Ramón López Peña. Faculty of Pharmacy, Universidad de La Habana, Cuba.

Tutoring Master's thesis:
1993 Thesis for the degree of Master of Pharmacy. Pharmacokinetic study of monoclonal antibody ior-R3. Amarilys Surroca Garcia. Faculty of Pharmacy, Universidad de La Habana, Cuba.
2014 Thesis for the degree of Master in Neuroscience. Permeation mechanism proton channel. Esther Alejandra Otarola Strange. Faculty of Science, Universidad de Valparaiso, Chile.

PhD degree advisor:
2013 PhD student Isac Garcia, Faculty of Science, Universidad de Valparaiso, Chile.
2013 PhD student Oscar Jara Leiva, Faculty of Science, Universidad de Valparaiso, Chile.
2014 PhD student: Yenisleidy Lorenzo Ceballos, working on structure-function relationship of the TRPV1 channel. CINV, Universidad de Valparaiso, Chile.
2014 PhD student: Amaury Pupo Meriño, working on Determination of pH sensor in proton channel (Hv1). CINV, Universidad de Valparaiso, Chile.

Postdoctoral sponsoring:

2014 Supervisor of Dr. David Baez Nieto. Molecular determinants of the architecture and dynamics of voltage-sensitive proton channels. CINV, Universidad de Valparaiso, Chile.
2014 Supervisor of Dr. Karen Castillo. Voltage sensor ion channels: from structure to function. CINV, Universidad de Valparaiso, Chile.
2014 Fondecyt Sponsor of Dr. Gustavo Contreras. Coupling voltage sensors to gate in Ca^{2+}channels. CINV, Universidad de Valparaiso, Chile.

Selected Publications

- Carmona E, *et al* (2018) ***PNAS***
- Qiu F, *et al* (2016) ***PNAS***
- Castillo K, *et al* (2015) ***PNAS***
- Pupo A & Gonzalez C (2014) ***PNAS***
- Qiu F et al. (2013) ***Neuron***
- Contreras GF et al. (2012) ***PNAS***
- Gonzalez C et al (2011) ***Nat. Comm***.
- Osteen JD et al (2010) ***PNAS***
- Gonzalez C & Larsson HP (2010) ***PNAS***
- Gonzalez C et al (2010) ***Nat. Str. Mol. Biol***.
- DePuy SD et al. (2006) ***PNAS***
- Gonzalez C et al (2005) ***PNAS***
- Gonzalez C et al (2001) ***PNAS***

Peer-reviewed Publications

- Alvarez O, Castillo K, Carmona E, Gonzalez C y Latorre R. (**2019**) Methods for investigating TRP channel gating. In: Methods in Molecular Biology. Editores: Antonio Ferrer-Montiel, y Tim Hucho. Springer Publishing Company, NY, NY, USA. [In Press]

- Carmona EM, Larsson HP, Neely A, Alvarez O, Latorre R, Gonzalez C. (**2018**) Gating charge displacement in a monomeric voltage-gated proton (Hv1) channel. ***Proc Natl Acad Sci USA***. 115(37):9240-9245. doi:10.1073/pnas.1809705115.

- García IE, Villanelo F, Contreras GF, Pupo A, Pinto BI, Contreras JE, Pérez-Acle T, Alvarez O, Latorre R, Martínez AD, **González C**. (**2018**) The syndromic deafnessmutation G12R impairs fast and slow gating in Cx26 hemichannels. ***J Gen Physiol.*** 150(5):697-711. doi: 10.1085/jgp.201711782.

- Bernardo I. Pinto, Amaury Pupo, Isaac E. García, Karel Mena-Ulecia, Agustín D. Martínez, Ramón Latorre and **Carlos Gonzalez**. Calcium binding and voltage gating in Cx46 hemichannels. ***Sci Rep.*** **2017** Nov 20;7(1):15851. doi: 10.1038/s41598-017-15975-5.

- Asuaje, A., Smaldini, P., Martín, P., Enrique, N., Orlowski, A., Aiello, E. A., **Gonzalez C** & Milesi, V. (**2017**). The inhibition of voltage-gated H+ channel (HVCN1) induces acidification of leukemic Jurkat T cells promoting cell death by apoptosis. ***Pflügers Archiv-European Journal of Physiology***, *469*(2), 251-261.

- Fernández, A., Pupo, A., Mena-Ulecia, K., & **Gonzalez, C**. (2016). Pharmacological modulation of proton channel Hv1 in cancer therapy: future perspectives. ***Molecular pharmacology***, *90*(3), 385-402.

- Diaz-Franulic, I., Poblete, H., Miño-Galaz, G., González, C., & Latorre, R. (2016). Allosterism and structure in thermally activated transient receptor potential channels. ***Annual review of biophysics***, *45*, 371-398.

- Latorre R, Castillo K, Carrasquel-Ursulaez W, Sepulveda RV, Gonzalez-Nilo F, **Gonzalez C** and Alvarez O. 2016. Molecular determinants of BK channel functional diversity and functioning. ***Physiological Reviews***, 97(1):39-87 doi:10.1152/physrev.00001.

- Pinto BI, García IE, Pupo A, Retamal MA, Martinez AD, Latorre R and Gonzalez C (2016) Charged residues at the first transmembrane region contribute to the voltage dependence of connexins slow gate. ***J Biol Chem*** 291(30):15740-52. doi:10.1074/jbc.M115.709402.

- Krick S, Wang J, St-Pierre M, **Gonzalez C,** Dahl G, Salathe M. (2016) Duox2 Regulates Pannexin1-mediated ATP Release in Primary Human Airway Epithelial Cells via changes in intracellular pH and not H2O2 production. ***J Biol Chem.*** 291(12):6423-32. doi: 10.1074/jbc.M115.664854.

- Qiu F, Chamberlin A, Watkins BM, Ionescu A, Perez ME, Barro-Soria R, **González C**, Noskov SY and Larsson HP (2016) Molecular mechanism of Zn2+ inhibition of a voltage-gated proton channel. Proc Natl Acad Sci U S A 113(40):E5962-E5971

- Retamal MA, García IE, Pinto B, Pupo A, Baez-Nieto D, Stehberg J, Del Rio R, Gonzalez C. (2016) Extracellular cysteine in connexins: role as redox sensors. Front in Physiol 7:1. doi: 10.3389/fphys.2016.00001.

- Castillo K, Contreras GF, Pupo A, Torres Y, Neely A**, Gonzalez C**and Latorre R. **(2015)** Molecular mechanism of β1 regulation in BK channel. ***Proc Natl Acad Sci U S A***. 112(15):4809-14

- Castillo K, Pupo A, Baez-Nieto D, Contreras G; Morera FJ,Neely A,Latorre R,**Gonzalez C. (2015)**Voltage-Gated Proton (Hv1) Channels, a Singular Voltage Sensing Domain. ***FEBS Letters***589(22):3471-8

- Morera FJ, Saravia J, Pontigo JP, Vargas-Chacoff L, Contreras GF, Pupo A, Lorenzo Y, Castillo K, Tilegenova C, Cuello LG**,Gonzalez C**. (**2015**) Voltage-dependent BK and Hv1 channels expressed in non-excitable tissues: new therapeutics opportunities as targets in human diseases. ***Pharmacol Res***. Nov;101:56-64.

- Carrasquel-Ursulaez W, Contreras GF, Sepúlveda R, Aguayo D, Gonzalez-Nilo F, **Gonzalez C**and Latorre R**. (2015**) The BK channel S6 transmembrane domain is a stimuli integration node. ***J Gen Physiol***. 145(1):61-74

- Poblete H, Oyarzún I, Olivero P, Comer J, Zuñiga M, Sepulveda RV, Báez-Nieto D, **Gonzalez Leon C**, Gonzalez-Nilo F, Latorre R. **(2015)**Molecular Determinants of Phosphatidylinositol 4,5Bisphosphate (PI(4,5)P2) Binding to Transient Receptor Potential V1 (TRPV1) Channels. ***J Biol Chem***. 290(4):2086-98

- García IE, Maripillán J, Jara O, Ceriani R, Palacios-Muñoz A, RamachandranJ, Olivero P, Pérez- Acle T, **Gonzalez C**, Sáez JC Contreras JE, Martinez AD. **(2015)**Keratitis- IchthyosisDeafness syndrome-associated Cx26 mutants produce non-functional gap junctions but hyperactive hemichannels when co-expressed with wild type Cx43 ***J Invest Dermatol***. 135(5):1338-47.

- Retamal MA, Leon-Paravic CG, Ezquer M, Ezquer F, Del Rio R, Pupo A,Martinez AD,**Gonzalez C(2015**) Carbon Monoxide: A New Player in the Redox Regulation of Connexin Hemichannels. ***IUBMB Life***.67(6):428-37.

- Retamal MA., Reyes EP., García IE., Pinto B.,Martinez AD.,**Gonzalez C**(2015) Diseases associated with leaky hemichannels. ***Frontiers in Cellular Neuroscience***. 9:267.

- Francisco J. Morera, David Baez-Nieto, Yenisleidy Lorenzo, Karen Castillo, Amaury Pupo, Luis Vargas-Chacoff and Carlos Gonzalez **(2015).**Role of ion channelsin salt secretion by atlantic salmon gills during acclimation to seawater. ***Physiological Mini Reviews***, Vol.8 Nº 1, 1-10.

- Ferreira G, Raddatz N, Lorenzo Y,**Gonzalez C**andLatorre R**(2015)**Biophysical and Molecular Featuresof Thermosensitive TRP Channels Involvedin Sensory Transduction. Cahpter in:TRP Channels in Sensory Transduction,R. Madrid, J. Bacigalupo (eds.).Springer International Publishing Switzerland. (chapter on Book)

- Amaury Pupo & **Carlos Gonzalez**. In pursuit of an inhibitory drug for the proton channel (Hv1). (2014) ***Proc Natl Acad Sci U S A***. (2014)Jun 11. Pii.201408808

- Baez D, Raddatz N, Ferreira G, **Gonzalez C**, LatorreR. Gating of thermally activated channels. ***Curr Top Membr***. (2014);74:51-87. doi: 10.1016/B978-0-12-800181-3.00003-8

- Raddatz N, Castillo JP, **Gonzalez C**, Alvarez O, Latorre R Temperature and Voltage Coupling to Channel Opening in Transient Receptor Potential Melastatin 8 (TRPM8). ***J Biol Chem***. (2014)Dec 19; 289(51):35438-54. doi: 10.1074/jbc.M114.612713. Epub 2014 Oct 28.

- Pupo A, Báez D, Martínez A, Latorre R and **Gonzalez C**. Hvchannel molecular models: filling the gap between experimental data and the structural rationale. (2014) (***Channels)***Apr 22; 8(3)

- Arachidonic acid activation of BKCa (Slo1) channels associated with the β 1 subunit in human vascular smooth muscle cells. Martín, P.; Moncada, M.; Enrique, N.; Asuaje, A.; Valdez Capuccino, J.M.; **Gonzalez, C**.; Milesi, V. (2013) ***European Journal of Physiology***. PMID:24375290

- Gustavo Contreras, Karen Castillo, Nicolás Enrique, Willy Carrasquel-Ursulaeza, Juan Pablo *Castillo, Verónica Milesi, Alan Neely, Osvaldo Álvarez, Gonzalo Ferreira**, Carlos Gonzalez***and Ramón Latorre. A BK (Slo1) (2013) *Channel Journey from Molecule to Physiology*(2013) ***Channels***.Sep 11;7(6). 10.4161/chan.26242.

- Qiu F, Rebolledo S, **Gonzalez C**&H. Peter Larsson. The S4 voltage sensor movement that opens Hv proton channels. (2013) ***Neuron***, Volume 77, Issue 2, 23 January (2013), Pages 288-298.

- **Gonzalez, C**, Rebolledo S, Wang X, Perez M and Larsson HP. Molecular mechanism of voltage sensing in voltage-gated proton channels (2013). ***Journal of General Physiology***Mar;141(3):275-85. doi: 10.1085/jgp.201210857.

- Marcus Vinicius Almeyda Campos, Costa C, **González C**, Latorre R, Milesi V y Gonzalo Ferreira. 2013. New biomedical and physiological knowledge ofthe sport (with emphasis on ion channels in skeletal muscle). In "***New Technologies and***

Innovation in Human Movement." (***Book***VI REMH). Ed. Universidad de Chihuahua.

- Contreras GF, Neely A, Alvarez O, **Gonzalez C*** and Latorre R. Modulation of BK Channel Voltage Gating by Different Auxiliary β Subunits. ***Proc. Natl. Acad. Sci***. USA (2012) Nov 13;109(46):18991-6.

- Morera, FJ; Alioua, A; Kundu, P; Salazar, M; **Gonzalez, C**; Martinez, AD; Stefani, E; Toro, L.; Latorre, R. The first transmembrane domain (TM1) of β2-subunit binds to the transmembrane domain S1 of α-subunit in BK potassium channels. ***FEBS Lett.*** (2012) Jul 30; 586 (16): 2287-93.

- **Gonzalez C**, Baez D, Valencia I, Rojas P, Naranjo D & Latorre R. (2012) K+ Channels: Function-Structural overview. ***Comprehensive Physiology journal***. (2012) 2: 2087-2149.

- **Gonzalez, C**, Contreras G, Peyser, A , Larsson, P, Neely A and Latorre R. Voltage sensor of ion channel and enzymes. *Biophys Rev*(2012) 4:1–15.

- Latorre R, **Gonzalez C**, Rojas Potassium channel of the Slo family (2012) ***Neuroscience in 21st Century***, Eugene Martin and Donald Pfaff, eds. Springer.

- **Gonzalez C**, Lopez Rogriguez A, Srikumar D, Rosenthal J & Holmgren M Editing of human KV1.1 channel mRNAs disrupts binding ofthe N-terminus tip at the intracellular cavity. (2011) ***Nature Commun.***2:436 doi: 10.1038/ncomms1446.

- **Gonzalez C***, Manzanares D*, Ivonnet P, Chen R, Valencia-Gattas M, Conner G, Larsson HP and Salathe M. BK channels critically regulate airway surface liquid volume. ***Journal Biological Chemistry***. (2011) Jun 3;286 (22):19830-9 (*equally contributed).

- **Gonzalez, C**and Larsson HP Permeation mechanism in voltage-activated proton channels: A new glimpse. ***Proc. Natl. Acad. Sci.***USA. (2010). 107(5):1817-8.

- Osteen JD, **Gonzalez C**, Sampson KJ, Iyer V, Rebolledo S, Larsson HP, Kass RS (2010) KCNE1 alters the voltage sensor movements necessary to open the KCNQ1 channel gate. ***Proc. Natl. Acad. Sci.***USA. (2010). Dec 107(52):22710-5.

- **Gonzalez, C**; Koch, HP, Drum B and Larsson HP. Strong cooperativity between subunits involtage-gated proton channels. ***Nature Struct Mol Biol.***(2010) Dec 20. 17(1):51-6.

- Morera, F; Vargas, G; Rosenmann, E; **Gonzalez C**and Latorre R. Methods in Membrane Lipids. Ion Channel Reconstitution. Dopico A. Ed. Humana Press (2007). ***Methods Mol Biol***. 400:571-85.

- DePuy SD, Junlan Y, Hu Ch, McIntire W, Bidaud I, Lory P, Rastinejad F, **Gonzalez C**, Garrison JC, and Barrett PQ. The molecular basis for T-type Ca2+ channel inhibition by G-protein β2γ2 subunits (2006). ***Proc. Natl. Acad. Sci.***USA. 103: 14590-5.

- **Gonzalez C**, Morera F; Rossenman E; Alvarez O and Latorre R. S3b amino acid residues do not shuttle across the bilayer in voltage-dependent Shaker K+ channels (2005). ***Proc. Natl. Acad. Sci.***USA. 102: 5020–25.

- Alvarez O, Rosenmann E, Bezanilla F.; **Gonzalez C**, and Latorre R. Helical nature of the voltage sensor (2005). Pumps, Transporters and Ion Channels: Studies on

Their Structure, Function, and Cell Biology. Eds. Sepulveda F and Bezanilla F. Pp 93-101

- Hebeisen, S., Heidtmann, H., Cosmelli, D., **Gonzalez C**, Poser, B., Latorre, R., Alvarez, O., Fahlke, C. Anion Permeation in Human ClC-4 channels (2003). ***Biophys J.*** 84: 2306-18.

- Latorre R., Olcese, R., Basso C.; **Gonzalez C**; Muñoz F; Cosmelli D and Alvarez O. Molecular coupling between voltage sensor and pore opening in the Arabidopsis inward rectifier K+ channel KAT1 (2003). ***J. Gen. Physiol.***122: 459-469.

- Latorre R., Muñoz F.; **Gonzalez C**and Cosmelli D. Structure and Function of Potassium Channels in Plants: Some Inferences about the Molecular Origin of Inward Rectification in KAT1 Channels (2003). ***Mol Membr Biol.*** 20: 19-25.

- Soto M; **Gonzalez C**; Vergara C; and Latorre R. Ca2+-Activated K+ Channel Inhibition by Reactived Oxygen Species (2002). ***Am. J. Physiol.*** 282: c461-c471.

- Fernandez-Sanchez, E; Duconge, J; Surroca A.; Perdomo Y; **Gonzalez C**and Bécquer MA. Pharmacokinetic Disposition and Bio-distribution of the Monoclonal Antibody Ior EGF/r3 in rats, dogs and rabbits (2002). ***Acta Farm. Bonaerense.***21: 245-253.

- Alvarez O, **Gonzalez C**and Latorre R. Counting ionic channels. Theoretical basis and application in noise analysis (2002). ***Adv. Physiol. Educ.***26: 327-341.

- **Gonzalez C**; Rosennman E; Bezanilla F; Alvarez O and Latorre R.Periodic Perturbations in Shaker K+ Channel Gating Kinetics by Deletions in the S3-S4 Linker (2001). ***Proc. Natl. Acad. Sci.***USA. 98: 9617-23.

- **Gonzalez C**; Rosennman E; Bezanilla F; Alvarez O and Latorre R. Modulation of Shaker K+ channel gating kinetic byS3-S4 linker (2000). ***J. Gen. Physiol.*** 115: 193-207.

PATENTS

1. Patent number: MS 009458-95. IOR egf/r3 (monoclonal antibody) Peru
2. Patent number: 0492. IOR egf/r3 (monoclonal antibody) Cuba
3. Patent number: 0820 Pimocide (reformulation of neuroleptic drug) 1mg Cuba
4. Patent number: 0822 Pimocide (reformulation of neuroleptic drug) 4mg Cuba.

Selected Presentations at Scientific Meetings

International

- ✓ De Giorgis D., Contreras G., Savalli N., Navarro-Quezada N., Gonzalez C., Olcese R., Neely A. Regulation of Voltage Sensing Structures of CaV1.2 Calcium Channels by the Auxiliary β-Subunit (β3). Biophysical Society 60th Annual Meeting. Los Ángeles, USA. February 2016.
- ✓ García IE, Contreras G, Pupo A, Pinto B, Latorre R, Contreras JE, Martínez AD, González C. Molecular Determinants Underlying the Pathogenic Mechanism of Kid Syndrome Elicited by Cx26G12R Mutation. Biophysical Society 60th Annual Meeting. Los Ángeles, USA. February 2016.
- ✓ C. González, B. Pinto. The first transmembrane segment of connexins and voltage-dependent gating regulation of hemichannels. International Gap Junction Conference. Valparaíso/Chile. March 2015.
- ✓ C. Gonzalez. Use of Fluorescent Probes to Further Understand Membrane channels: the

new connexin era. International workshop Biophysical of Hemichannels and Gap Junction Channels: a theoretical and practical training. Santiago/Chile. March 2015.

- ✓ Pupo A., Baez-Nieto D., Gonzalez C. Proton permeation in Ci-Hv1 voltage-gated proton channels occurs through a proton wire involving residues D160 and D222 and it is modulated by N264. 59th Annual Meeting Biophysical Society. Baltomore/USA. February 2015.
- ✓ Pinto BI., Baez-Nieto D., Pupo A., Martinez A., Latorre R., Gonzalez C. Residues involved in Cx26 hemichannels voltage dependent gating. 59th Annual Meeting Biophysical Society. Baltomore/USA. February 2015.
- ✓ R. Latorre, C. González, N. Raddatz, JP. Castillo, O. Alvarez. Temperature and voltage coupling to TRPM8 Channel Opening. 59th Annual Meeting Biophysical Society. Baltomore/USA. February 2015.
- ✓ Poblete H., Oyarzún I, Olivero P., Comer J., Zuñiga M., Sepulveda R., Báez-Nieto D., González C., Gonzalez-Nilo F., Latorre R. The molecular determinants of pi(4,5)p2 binding to TRPV1 channels. 59th Annual Meeting Biophysical Society. Baltomore/USA. February 2015.
- ✓ Pupo A., Otarola E., Baez-Nieto DE., Contreras G., González W., Castillo K., Larsson P., Latorre R., Gonzalez C. Understanding the structural basis of permeation and selectivity in Hv1 proton channel. OMICS 2014. Varadero, Cuba. October 2014.
- ✓ González C. Proton permeation in Ci-Hv1 voltage-gated proton channels occurs through a proton wire involving residues D160 and D222 and it is modulated by N264. Reunión Anual de la Sociedad Argentina de Fisiología SAFIS 2014. Buenos Aires, Argentina. October 2014.
- ✓ Piccinini L., Moncada M., Enrique N., González W., González C., Martin P., Milesi V. TRC-10 pH-dependent blocking action of bupivacaine on BKCa channel. Reunión Anual de la Sociedad Argentina de Fisiología SAFIS 2014. Buenos Aires, Argentina. October 2014.
- ✓ Moncada M., Piccinini L., Castillo K., Asuaje A., González C., Milesi V., Martín P. TRC-12 Dual effects of Arachidonic acid on BK channel: role of β1-subunit. Reunión Anual de la Sociedad Argentina de Fisiología SAFIS 2014. Buenos Aires, Argentina. October 2014.
- ✓ González, C. Coupling Between Voltage Sensor and Permeation Pathway in Hv1 Channel. Reunión Anual de la Sociedad Argentina de Fisiología SAFIS 2014. Buenos Aires, Argentina. October 2014.
- ✓ Pupo A., Otarola E., Baez-Nieto DE., Contreras G., Yañez O., Gonzalez W., Miño G., Larsson P.; Latorre R., Gonzalez C. Role of C-terminal of S4 in the permeation pathway of Ciona Intestinalis Hv1 Channel. Gordon Research Conference. Ion channels. South Hadley, USA. July 2014.
- ✓ Castillo K., Contreras GF., Pupo A., Torres Y., Granados S., Lorenzo Y., Alvarez O., Neely A, Gonzalez C., Latorre R. The beta1 subunit N-terminus is involved in the modulation of alfa subunit voltage sensor of BK involved. Gordon Research Conference. Ion channels. South Hadley, USA. July 2014.
- ✓ C. González. "Tecnicas electrofisiológicas e imagenológicas aplicadas a fisiologia, biofisica y neurociencia: Bases y ejemplos en situaciones experimentales concretas". Congreso SUB XV Jornadas de la Sociedad Uruguaya de Biociencias. Montevideo/Uruguay. June 2014.
- ✓ D. Baez-Nieto, R. Latorre, Ester Otarola, G. Contreras, P. Larsson, C. González. Gating Currents of Monomeric Hv Channel Reveals a Permeation Pathway Coupled to the Voltage Activation. 58th Annual Meeting of Biophysical Society. San Francisco, USA. February 2014.
- ✓ D. E. Otarola, R. Latorre, D. Baez-Nieto, G. Contreras, O. Yañez, K. Castillo, P. Larsson, C. González. The Permeation Pathway Mechanism in Ciona Intestinalis Hv Channel. 58th Annual Meeting of Biophysical Society. San Francisco/USA. February 2014 .
- ✓ Baez, D.; Otarola E.; Contreras G.; Castillo K.; Larsson H.; Latorre R.; Gonzalez C. Permeation mechanism in Hv channels. VIII Congreso Iberoamericano de Biofísica. Valparaiso, Chile. October 2013.
- ✓ C. González. Ion Channels in the Valley. Hv channels: from voltage sensor to permeation pathway. La Serena/Chile. April 2013.

National

- ✓ Neely, C. González, D. De Giorgis, G. Contreras, N. Savally, N. Navarro-Quezada, R. Olcese. Regulation of voltage sensing structures of Cav1.2 Calcium channel by the auxiliary B-Subunit (B3). XI Reunión Anual de la Sociedad Chilena de Neurociencias 2015. Coquimbo/Chile. September 2015.
- ✓ Martínez , AM. Cárdenas, C. González, O. Jara, J. Maripillán, F. Momboisse, I. García, B. Pinto. Role of cytoskeleton and RhoA in regulation of Gap Junction Channels and Hemichannels. XI Reunión Anual de la Sociedad Chilena de Neurociencias 2015. Coquimbo/Chile. September 2015.
- ✓ Martínez , AM. Cárdenas, C. González, O. Jara, J. Maripillán, F. Momboisse, I. García, B. Pinto. Role of cytoskeleton and RhoA in regulation of Gap Junction Channels and Hemichannels. CINV Meeting 2015. Valparaíso/Chile. July 2015.
- ✓ González, FD. González-Nilo, R. Latorre, G. Miño, R. Salazar, I. Díaz. Heat activation pathways and allosteric cooperativity of the transient receptor potential ion channel V1,

TRPV1. CINV Meeting 2015. Valparaíso/Chile. July 2015.

- ✓ González, A. Martínez, I. García. Molecular determinants underlying the pathogenic mechanism of KID- syndrome elicited by Cx26G12R mutation. CINV Meeting 2015. Valparaíso/Chile. July 2015.
- ✓ Neely and C. González, D. De Giorgis, G. Contreras, N. Savally, N. Navarro-Quezada. Regulation of voltage sensing structures of Cav1.2 Calcium channel by the auxiliary B-Subunit (B3). CINV Meeting 2015. Valparaíso/Chile. July 2015.
- ✓ Granados Sara T, Piccinini Luciano, Castillo Karen, Lorenzo Yenisleidy, Torres Yolima, Milesi Verónica, Gonzalez Carlos, Latorre Ramon. BK Channels Activation by 17b-Estradiol is Associated to Voltage Sensor Modulation Through Direct Binding to b1 Auxiliary Subunit. X Annual Meeting. Sociedad Chilena de Neurociencia. Valdivia/Chile. October 2014.
- ✓ Pinto Bernardo, Baez-Nieto David, Martinez Agustin, Latorre Ramon, Gonzalez Carlos. Identification of Residues Involved in Cx26 Hemichannel Slow Gating. X Annual Meeting. Sociedad Chilena de Neurociencia. Valdivia/Chile. October 2014.
- ✓ Castillo Karen, Pupo Amaury, Torres Yolima, Lorenzo Yenislad, Alvarez Osvaldo, Neely Alan, Gonzalez Carlos, Latorre Ramón. The β Subunit N-Terminus is Involved in the Modulation of a-Subunit Voltage Sensor of BK Channels. X Annual Meeting. Sociedad Chilena de Neurociencia. Valdivia/Chile. October 2014.
- ✓ Contreras G.,De Giorgis Daniela, Gonzalez Carlos, Neely Alan. Immobilization in Calcium Channels by REM GTPase. X Annual Meeting. Sociedad Chilena de Neurociencia. Valdivia/Chile. October 2014.
- ✓ Pupo A, Otarola Ester, Baez-Nieto David, Miño Germán, Contreras Gustavo, Yañez Osvaldo, Castillo Karen, Gonzalez Wendy, Latorre Ramón, Gonzalez Carlos. Mechanism Of The Permeation Pathway in Hv1 Channel. X Annual Meeting. Sociedad Chilena de Neurociencia. Valdivia/Chile. October 2014.
- ✓ R. Latorre, C. González, A. Martínez, B. Pinto, D. Baez-Nieto. Identification of Residues Involved in Cx26 Hemichannel Slow Gating. X Reunión Anual de la Sociedad Chilena de Neurociencia. Valdivia/Chile. October 2014.
- ✓ González. Hv channels: from voltage sensor to permeation pathway. First Chilean Symposium of Structural Biology. Santiago/Chile. April 2013.

AWARDS

1984 Fellowship (Russia), full tuition and scholarship

1994 Prize from the Cuban Academy of Sciences to: Most important scientific-technical result.

1995 Prize from the Havana University's Rector to: Most important scientific work.

1997 Prize from the Havana University's Rector to: Most significance and originality scientific work.

1999 TWAS South-South fund

2000 Biophysical society fund

2001 CONICYT (Chile) Graduate-Fellowship, full tuition & scholarship

2002 Award to the 15 best PhD student by President of Chile (Sr. Ricardo Lago)

2009 Margaret whale fund from University of Miami

2014 Mejor Investigador Universidad de Valparaíso

20016 Mejor Investigador Universidad de Valparaíso

GRANTS AND FINANCING

From 2010-present:
CINV as Millennium Institute (Associated Investigador) Year: 2013-2014

Formation of International Networks between the Interdisciplinary Neuroscience Center of Valparaiso and the Department of Biophysics, Faculty of Medicine, University of the Republic, Uruguay.
Contest: Support to the Formation of International Networks between research centers

2013–REDES130006
Funding: Conicyt.
Principal Investigator: Carlos Gonzalez.
Other Investigators: Gonzalo Ferreira (Uruguay), Ramón Latorre, Alan Neely, Gustavo
Brum (Uruguay)
Other Universities or Institutions: Department of Biophysics, Faculty of Medicine, University of the Republic.
Development of a lipid biosensor platform for detecting red tidein situ.

Years : 2013-2015
Contest: II Applied Science Competition 2013 –Programa IDeA # CA13I10274
Funding: Conicyt
Principal Investigator: Patricio Villalobos
Other Investigators: Paul Conejeros, Carlos González
Other Universities or Institutions: Universidad Técnica Federico Santa María

ANILLO
Voltage sensor of ion channels: from structure to function.

Years: 2013-2015.
Contest: PIA-Conicyt –#ACT1104. Funding: Conicyt.
Principal Investigator: Carlos González.
Other Investigators: Agustín Martínez, Alan Neely, Mauricio Retamal, Wendy González, Patricio Orio
Other Universities or Institutions: Universidad del Desarrollo, Universidad de Talca.
Mechanism of plasma membrane permeabilization induced by syndromic deafness mutations of CX26.

Years: 2013-2016.
Concurso: Fondecyt Regular 2013 –#1130855. Funding: Conicyt.
Principal Investigator: Agustín Martínez.
Other Investigators: Carlos González
Coupling of voltage-sensors to the gate in calcium channels.

Years: 2012-2014
Concurso: Fondecyt Regular 2012 –#1120864
Funding: Conicyt
Principal Investigator: Alan Neely
Other Investigators: Carlos González

Molecular determinants of architecture and dynamics of voltage-sensitive proton channel (Hv)

Years: 2012-2016
Concurso: Fondecyt Regular 2012 –#1120802
Funding: Conicyt
Principal Investigator: Carlos González
Other Investigators: Alan Neely

Years: 2016-2018
Concurso Fondecyt Regular 2016# 1160261
Funding: Conicyt
Principal Investigator: Carlos González

Years: 2018-2022
Concurso Fondecyt Regular 2018 # 1180464
Funding: Conicyt
Principal Investigator: Carlos González

SOCIETIES

1999 Member of Biophysical Society, USA

MEMBERSHIPS

2013-2018 Member of Editorial Board of *JBC*

Reviewer for Scientific Journals

- Journal of General Physiology
- Biophysical Journal
- FEBS Letters (2007-2011).
- Journal of Biological Chemistry (2011).
- Nature (2011-2015).
- Proceedings of the National Academy of Sciences of the USA (2011-2015).
- Scientific Report (2013)
- Frontier in Physiology (2014).