

Prof. Ricardo Borges Jurado MD, PhD

DNI: 42.048.636-J

Born: 11-08-1959 (Santa Cruz de Tenerife)

UNESCO Code: 320804

Academic degrees

Medicine and Surgery University of La Laguna 1982

PhD Medicine and Surgery University of Alicante 1985

Supervisor: Prof. Antonio G. García



Current position:

Full Professor of Pharmacology and Head of the Unit of Pharmacology.

Dept. Physical Medicine and Pharmacology, Medical School University of La Laguna.

38071 La Laguna, Tenerife. Spain.

Phone: +34 922-319346; FAX: +34- 922-655995

Previous positions

1980-1982	Internal student	Dept Pharmacology. Univ. La Laguna
1983-1987	Assistant Professor	Dept Pharmacology. Univ. Alicante
1987	Assistant Professor LRU	Dept Pharmacology. Univ. Alicante
1987-1988	Temporary Lecturer	Dept. Fis. Med. & Pharmacol. La Laguna
1987-1989	Research Fellow	King's College London
1988-2009	Lecturer	Dept. Fis. Med. & Pharmacol. La Laguna
1994	Visiting Professor	Univ. North Carolina. Chapel Hill. USA.
2009-	Professor (Catedrático)	Dept. Fis. Med. & Pharmacol. La Laguna

GRANTS (last 10 years)

- Modulación farmacológica del proceso excitotico

Spanish Ministry of Science and Technology DGICYT/MCYT (BFI2001-3531)

94,600€ (2002 - 2004) Principal researcher: **Ricardo Borges**

- Modulación farmacológica del proceso excitotico

Government of The Canary Islands

11,479 € (2003) Principal researcher: Ricardo Borges

- La excitosis de neurotransmisores como diana farmacológica.

Spanish Ministry of Science and Education (BFU2004-08038)

130,000 €. (2005 – 2007) Principal researcher: **Ricardo Borges**

- La excitosis de neurotransmisores, una posible diana farmacológica de los antidepresivos.

Government of The Canary Islands (PI0422005/048)

20,384 €. (2006 - 2007) Principal researcher: **Ricardo Borges**

- Grupos consolidados.

Government of The Canary Islands

12,056 €. (2006 – 2007) Principal researcher: **Ricardo Borges**

- El papel funcional de las cromograninas en el almacenamiento y en la excitosis de las catecolaminas de la médula suprarrenal.

Spanish Ministry of Science and Education (BFU2007-64963/FPI)

140,000 €. (2007 – 2010) Principal researcher: **Ricardo Borges**

- The Spanish ion channel initiative

Spanish Ministry of Science and Education MCT/CONSOLIDER (CSD2008-00005)

6,000,000 €. (2009 – 2014) Principal researcher: **Antonio V. Sánchez-Ferrer**

- Estudio de la neurosecreción simpática en ausencia de cromograninas.

Government of The Canary Islands (C2008/01000239).

28,250 €. (2010-2012) Principal researcher: **Ricardo Borges**

- El contenido de las vesículas secretoras como regulador de la excitosis. Consecuencias fisiopatológicas.

Spanish Ministry of Science and Education (BFU2010-15822/FPI).

193,000 €. (2011-2013) Principal researcher: **Ricardo Borges**

- Equipo de patch-clamp plano.

Spanish Ministry of Science and Innovation (UNLL08-3E-001).

63,593 €. (2010-2011) Principal researcher: **Ricardo Borges**

- La regulación de la liberación cuántica de neurotransmisores en la célula cromafín por factores vesiculares.

Spanish Ministry of Economy and Competitiveness (BFU2013-45253-P).

215,000 € (2014-2017) Principal researchers: **Ricardo Borges & J. David Machado**

PAPERS

- BOADA, J.N.; **BORGES, R.**; BOBET, J.M. and FERIA, M.M. (1982)
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- BOADA, J.N.; NAVARRO, E.; RODRIGUEZ, R.; **BORGES, R.**; ALARCO, B. and MARTIN, P. (1984)
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- SALA, F.; FONTERIZ, R.I.; **BORGES, R.** and GARCIA, A.G. (1986)
Inactivation of potassium-evoked adrenomedullary catecholamine release in the presence of calcium, strontium and BAY-K-8644
FEBS Lett. **196**, 34-38.
- BORGES, R.**; FERIA, M.; DIAZ, E.; RODRIGUEZ-MENDEZ, S.A. and BOADA, J.N. (1986)
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Gen. Pharmacol. **17**, 569-572.
- BORGES, R.**; SALA, F. and GARCIA, A.G. (1986)
Continuous monitoring of catecholamine release from perfused cat adrenals
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- GARCIA, A.G.; ARTALEJO, C.R.; **BORGES, R.**; REIG, J.A. and SALA, F. (1986)
Pharmacological properties of chromaffin cell calcium channel. **In:** Biophysics of the pancreatic β -Cell; Ed. by Atwater, Rojas and Soria. *Plenum Publ Co, Bethesda; USA.* 139-157.
- BORGES, R.**; BALLESTA, J.J. and GARCIA, A.G. (1987)
 M_2 muscarinoceptor-associated ionophore at the cat adrenal medulla
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- CARDENAS, A.M.; MONTIEL, C.; ESTEBAN, C.; **BORGES, R.** and GARCIA, A.G. (1988)
Secretion from adrenaline- and noradrenaline-storing adrenomedullary cells is regulated by a common dihydropyridine-sensitive calcium channel
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Activation of sodium channels is not essential for endothelin induced vasoconstriction
Pflügers Arch. **413**, 313-315.
- BORGES, R.**; CARTER, D.V.; GRAFENSTEIN, H.V.; HALLIDAY, J. and KNIGHT, D.E. (1989)
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Circ. Res. **65**, 265-271.
- BORGES, R.**; GRAFENSTEIN, H.V. and KNIGHT, D.E. (1989)
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Eur. J. Pharm. **165**, 223-230.
- BALLESTA, J.J.; **BORGES, R.**; GARCIA, A.G. and HIDALGO, M.J. (1989)
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J. Physiol. **418**, 411-426.

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- GRAFENSTEIN, H.V.; **BORGES, R.** and KNIGHT, D.E. (1992)
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Inhibitory and contractile effects of okadaic acid on rat uterine muscle.
Eur. J. Pharmacol. **219**, 473-476.
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J. Neurochem. **99**, 29-41

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(Submitted)

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INTERCON Índice de especialidades farmacéuticas
Colaborador con varios autores en las ediciones 1984-1989
AG. GARCIA y JF. HORGÁ directores

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PATENTS

Borges, R.; Martín, T.; Beltrán, B.; Machado, J.D.; Carrillo, R.; Montesinos, M.S.; Martín, V.S.

Bloqueante fluorescente (\pm)RCTM-3 de los receptores adrenérgicos de tipo β .

Nº DE SOLICITUD: **P200801297**. PAIS DE PRIORIDAD: **España**

FECHA DE SOLICITUD: **3-04-2008**, ENTIDAD TITULAR: **Universidad de La Laguna**

Borges, R.; Montesinos, M.S.; Beltrán, B.; Machado J.D.; Fernández, J.

Sistema de detección de actividad biológica en tiempo real basado en cromatografía líquida.

Nº DE SOLICITUD: **P200902287**. PAIS DE PRIORIDAD: **España**

FECHA DE SOLICITUD: **9-11-2009**, ENTIDAD TITULAR: **Universidad de La Laguna**

Borges, R.; Rodríguez-Valido, M.; Machado J.D.; Beltrán, B.; Montesinos, M.S.; Díaz-Martín, D.; González Morales, Y.

Dispositivo y procedimiento para la evaluación múltiple y simultánea de la actividad contráctil de sustancias farmacológicas mediante métodos ópticos.

Nº DE SOLICITUD: **P201000640**. PAIS DE PRIORIDAD: **España**

FECHA DE SOLICITUD: **14-03-2010**, ENTIDAD TITULAR: **Universidad de La Laguna**

Criado, M.; Mulet, J.; González-Muñiz, R.; Pérez de Vega, M.J.; Balsera, B.; Sala, S.; Sala, F.; Fernández Carvajal, A. y **Borges, R.**

Chalconas polihidroxisustituídas como moduladores de receptores colinérgicos nicotínicos $\alpha 7$.

Nº DE SOLICITUD: **En trámite** PAIS DE PRIORIDAD: **España**

FECHA DE SOLICITUD: **20-03-2013**, ENTIDAD TITULAR: **Universidad Miguel Hernández**

POSTDOCTORAL POSITIONS AND VISITS

Dept. Neurochemistry (Pharmacology), Univ. Alicante. Alicante, Spain (5 years)	1983-87
Dept. Biochemistry, Univ. Massachusetts, Amherst, MA, USA (3 months)	1986
Dept. Physiology, Kings College London, Univ. London, UK (2 years)	1987-89
Dept. Pharmacology and Therapeutics Univ Autónoma Madrid. Spain (6months)	1990-93
Dept. Chemistry, Univ. North Carolina. Chapel Hill, NC, USA (6months)	1994

ORGANIZATION OF MEETINGS AND COURSES

- Treasurer. 7 th International Symposium on <i>in vivo</i> Methods Santa Cruz de Tenerife	1996
- Chairman. XVIII Reunión Nacional del Grupo Español de la Célula Cromafin Hermigua. La Gomera. Spain	1997
- Chairman. 12 Int. Symposium on Chromaffin Cell Biology La Palma. Spain	2003
- Vice-Chairman. XIV International Symposium on Calcium Binding Proteins La Palma. Spain	2007
- Organizing Committee. III RECI/SICI Meeting Puerto de La Cruz, Tenerife. Spain	2011
- Co-Organizer. Seminars of the Medical School University of La Laguna.	1989-to present
- Co-Organizer. I International Spring Course 'Measuring secretion' El Hierro.	2012
- Co-Organizer. II International Spring Course 'Measuring secretion & Membrane traffic' Sevilla.	2014.

INVITED CONFERENCES

- Modulación de la liberación cuántica de neurotransmisores: IVIC Caracas, Venezuela.	2013
- Farmacología y modulación de la exocitosis de neurotransmisores: Academia de Neurociencias del Perú. Lima. Perú	2013
- Intravesicular factors in the control of exocytosis. Chalmers University, Goteborg, Sweden	2011
- Intravesicular factors control exocytosis. Universidad Paris 7, France	2010
- Pharmacological modulation of the last step of exocytosis. Hamamatsu Univ. Japan	2001

PhD SUPERVISIONS

Automatización del proceso de identificación y caracterización de espigas resultantes de fenómenos de exocitosis registrados con técnicas amperométricas.

Miguel Ángel Brioso Hernández. University of La Laguna
Sobresaliente *Cum Laude*. Extraordinary Award. 2002

Estudio funcional de diferentes vías de señalización intracelular sobre la exocitosis. Regulación e implicaciones farmacológicas.

José David Machado Ponce. University of La Laguna 2002
Sobresaliente *Cum Laude*. Extraordinary Award.

Adquisición y procesamiento de señales electroquímicas, electrofisiológicas y fluorimétricas en el laboratorio.

José Francisco Gómez. University of La Laguna 2003
Sobresaliente *Cum Laude*.

Factores intravesiculares implicados en la regulación de la exocytosis. Un estudio en la célula cromafin.

Marcial Camacho Pérez. University of La Laguna 2007
Sobresaliente *Cum Laude*.

Factores intravesiculares que modulan la exocitosis. Implicaciones farmacológicas.

Mónica Suárez Montesinos. University of La Laguna 2008
Sobresaliente *Cum Laude*.

Caracterización de ratones carentes de cromogranina B mediante técnicas electroquímicas y conductuales

Yézer González Morales. University of La Laguna 2010
Sobresaliente *Cum Laude*.

- Papel funcional de la matriz intravesicular en la exocitosis.
M^a Jéssica Díaz Vera. University of La Laguna. 2010
Sobresaliente *Cum Laude*. Extraordinary Award.
- Estudio del papel funcional de las cromograninas A y B en el almacenamiento de catecolaminas y en la exocitosis.
Natalia Domínguez Reyes. University of La Laguna 2013
Sobresaliente *Cum Laude*. International mention.
- Estudio conductual, metabólico y de homeostasis vascular en ratones carentes de cromograninas.
Daniel Pereda de Pablo. University of La Laguna 2013
Sobresaliente *Cum Laude*.

CURRENT PHD STUDENTS

Marta Rodríguez Pardo.
Judith Estévez Herrera.
José G. Hernández Jiménez.
Ayoze González Santana.
Leandro Castañeyra Ruiz.

BACHELOR THESIS

- Diseción farmacológica del eje esplacno-adrenal en el gato.
Leonor Álamo Maestre. University of Alicante 1988
Sobresaliente
- Estudio preliminar sobre la acción secretora mediada por receptores acoplados a proteínas G en la médula suprarrenal de rata.
María Consuelo Álvarez Ramos. University of La Laguna. 1993
Sobresaliente
- Electrodos intraglandulares para monitorizar la liberación de catecolaminas en glándula adrenal de rata perfundida in vitro.
Carmelo Lorenzo Rodríguez
University of La Laguna 1993
Sobresaliente
- Papel de los distintos subtipos de canales de calcio en la secreción adrenomedular de la rata.
Francisco Santana Espinosa. University of La Laguna. 1998
Sobresaliente
- Investigaciones acerca del papel de la matriz intragranular en la liberación de catecolaminas desde células cromafines.
Ruth Jaén Molina. University of La Laguna. 1998
Sobresaliente
- El óxido nítrico modula el último estadio de la exocitosis.
José David Machado Ponce. University of La Laguna. 1999
Sobresaliente
- Acción de los estrógenos sobre la secreción de catecolaminas y exocytosis en tejidos adrenomedulares.
Carmen Alonso Fuentes University of La Laguna. 2001
Sobresaliente

REVIEWER FOR JOURNALS

Analyst; ACS Chem. Neurosci.; Acta Physiol.; Am. J. Physiol; Am. J. Hypertens; Anal. Chem.; Anesthesiology; Biochim. Biophys. Acta; Brain Res.; Cell Calcium; Cell. Mol. Neurobiol.; Endocrinology; Eur. J. Biochem.; Eur. J. Biophys.; FASEB J.; FEBS Lett.; Frontiers; Hypertension; J. Cell Biol.; J. Endocrinol.; J. Neurochem.; J. Neurosci.; J. Neurosci. Meth; J. Nutrit. Biochem.; J. Pharmacol. Exp. Ther.; Mol. Cell. Endocrinol.; Mol. Pharmacol.; Nat. Meth; Nat. Protocols.; Neuroscience; Neurosci Lett.; New Engl J. Med.; Pflüg. Arch.; Pharm. Biol.; Physiol. Genom.; PLOS One; Proc. Nat. Acad. Sci. USA.; Sci. Rep.

REVIEWER FOR RESEARCH AGENCIES

ANEP, FIS, SAF, BFU, Junta de Andalucía, (Spain)
INSERM, (France),
National Science Foundation, (USA),
Austrian Science Foundation,
Israel Science Foundation,
CONICYT/FONDECYT, (Chile)
CONICET, (Argentina)
University of Melbourne, (Australia).

OTHER

Number *h* of Hirsch de 23 (Google Scholar).
Research Spanish '*Sexenios*': 5
Vice-Dean Medical School: 1990-95
Member of the International Advisory Board of the Chromaffin Cell: 2001-2013
Institutional Research Awards of the University of La Laguna 2014.
Corresponding Member of the Royal Academy of Medicine de Santa Cruz de Tenerife. 2014.
Scientific Committee of the X International Catecholamine Symposium, Asilomar, Pacific Grove, CA, USA.
Member of the 'Aula Cultural de Divulgación Científica of the University of La Laguna 2013.

NON-RESEARCH ACTIVITIES

Literature

Cofete (Awarded by Cabildo de Fuerteventura, 2003) y
La Logia del Fármaco (2013).
Co-author of 'Historias fonendoscópicas' (Colegio Oficial de Médicos de Tenerife, 2013)

Music

Member of the Spanish Society of Authors (2006- to date)
Member of the Spanish Society of Musicians and Players (2008- to date)
Member of Los Sabanderos (2006- to date)
Previous musical groups: Tuna de Medicina La Laguna, Cuarentuna de Alicante, AFU, Garoé,
Parranda de Cantadores.
Participant in \approx 20 CD recordings.