

Curriculum Vitae Carlos Villalobos

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Present Position: Associate Profesor in Cell Physiology since June 2005.

Institute of Molecular Biology and Genetics, joint center between The University of Valladolid and The Spanish Research Council (Consejo Superior de Investigaciones Científicas).

Education:

- BS, Biochemistry. Madrid Complutense University School of Chemistry. 1990.
- Ph.D. in Physiology. Valladolid University School of Medicine. 1994.

Past Positions:

- 2001-2005. "Ramón y Cajal" Fellow. Institute for Molecular Biology and Genetics (IBGM). Spanish Research Council and Valladolid University.
- 1999-2001. Postdoctoral Fellow. University of Valladolid, Valladolid, Spain.
- 1996-1998. Postdoctoral Fellow. Medical University of South Carolina, Charleston, SC (USA).
- 1991-1995. Graduate student. Valladolid University School of Medicine. Mentor, J. García-Sancho.

Research Grants as Principal Investigator:

- Cancer chemoprevention: mitochondrial calcium as target of NSAIDs and new aspirins. 6.010 € from Regional Government of Junta de Castilla y León (VA 05/04). Jan 2005 – Dec 2005.
- Pituitary Pathophysiology: cell plasticity and pituitary tumors. 130.000 € from Fondo de Investigaciones Sanitarias (FIS), Spanish Health Department. Jan 2004 – Dec 2006.
- In search of antineoplastic mechanism of aspirin. 5.333 € by Regional Government Junta de Castilla y León (VA04/02). Jan 2003 – Dec 2003.
- Gene expression dynamics and its regulation by calcium signals. 3.235 € by Regional Government Junta de Castilla y León (VA115/02). Jan 2002 – Dic 2003.
- Functional and phenotypic characterization of cells from human pituitary tumors. 63.567 € by Fondo de Investigaciones Sanitarias (FIS 01/0769), Spanish Health Department. Jan 2001 – Dec 2003.

List of Publications

1. Núñez L, Valero RA, Senovilla L, Sanz S, García-Sancho J and **Villalobos C**. (2006) Cell proliferation depends on mitochondrial Ca^{2+} uptake: Inhibition by salicylate. *J Physiol (London)* 571(1), 57-73.
2. Senovilla L, García-Sancho J and **Villalobos C** (2005) Changes in expression of hypothalamic releasing hormone receptors in individual rat anterior pituitary cells during maturation, puberty and senescence. *Endocrinology* 146, 4627-4634.
3. **Villalobos C**, Nadal A, Núñez L, Quesada I, Chamero P, Alonso MT and García-Sancho J (2005) Bioluminescence imaging of nuclear calcium oscillations in intact pancreatic islets of Langerhans of the mouse. *Cell Calcium* 38, 131-139.
4. Senovilla L, Núñez L, de Campos JM, de Luis DA, Romero E, Sánchez A, García-Sancho J and **Villalobos C**. (2004) Multifunctional cells in human pituitary adenomas: implications for paradoxical secretion and tumorigenesis. *J Clin Endocrinol Metab* 89, 4545-4552.
5. **Villalobos C**, Núñez L and García-Sancho J (2004) Phenotypic characterization of multifunctional somatotropes, mammatropes and gonadotropes of the mouse anterior pituitary. *Pflügers Arch* 449, 257-264
6. **Villalobos C**, Núñez L and García-Sancho J (2004) Anterior pituitary thyrotropes are multifunctional cells. *Am J Physiol* 287, E1166-E1170
7. **Villalobos C**, Núñez L, Senovilla, L and García-Sancho J. (2003) Multifunctional cells of mouse anterior pituitary reveal a striking sexual dimorphism. *J Physiol (London)* 549, 835-843.
8. Alonso MT, Chamero P, **Villalobos C** and García-Sancho J (2003) Fura-2 antagonises calcium-induced calcium release. *Cell Calcium* 33, 27-35.
9. Chamero P, **Villalobos C**, Alonso MT and García-Sancho J. (2002) Dampening of cytosolic Ca^{2+} oscillations on propagation to nucleus. *J Biol Chem. (accelerated publication)* 277, 50226-50229.
10. **Villalobos C**, Núñez L, Faught WJ, Leamont DC, Boockfor FR and Frawley LS (2002) Calcium dynamics and resting transcriptional activity regulates prolactin gene expression. *Endocrinology* 143, 3548-3554.
11. Montero M, Alonso MT, Albillos A, Cuchillo-Ibáñez I, Olivares R, **Villalobos C**, and Alvarez J. (2002) Effect of inositol 1,4,5-trisphosphate receptor stimulation on mitochondrial $[\text{Ca}^{2+}]$ and secretion in chromaffin cells. *Biochem J* 365, 451-459.
12. Fonteriz RI, **Villalobos C** and García-Sancho J (2002) An extracellular sulfhydryl group modulates background sodium conductance and cytosolic calcium in several pituitary cell types. *Am J Physiol.* 282, C864-C872.
13. **Villalobos C**, Núñez L, Montero M, García AG, Alonso MT, Chamero P, Alvarez J and García-Sancho J (2002) Redistribution of Ca^{2+} among cytosol and organelle during stimulation of bovine chromaffin cells. *FASEB J* 16, 343-353.

14. **Villalobos C**, Núñez L, Chamero P, Alonso MT, García-Sancho J (2001) Mitochondrial $[Ca^{2+}]$ oscillations driven by local high- $[Ca^{2+}]$ domains generated by spontaneous electric activity. *J Biol Chem* 276, 40293-40297.
15. Núñez L, **Villalobos C**, Boockfor FR and Frawley LS (2000) The relationship between pulsatile secretion and calcium dynamics in single, living GnRH neurons. *Endocrinology* 141, 2012-2017.
16. **Villalobos C**, Faught WJ and Frawley LS (1999) Dynamics of stimulus-expression coupling as revealed by monitoring of PRL-promoter-driven reporter activity in individual, living mammothropes. *Mol Endocrinol* 13, 1718-1727.
17. Gore ACS, **Villalobos C** and Frawley LS (1999) Differential influences of gender and physiologic status on calcium dynamics and prolactin gene expression in rat mammothropes. *Endocrine* 11 (2), 131-136.
18. Abraham EJ, **Villalobos C** and Frawley LS (1998) Effects of cellular interactions on calcium dynamics in prolactin-secreting cells. *Endocrinology* 139, 2988-2993.
19. **Villalobos C**, Faught WJ and Frawley LS (1998) Dynamic changes of spontaneous $[Ca^{2+}]_i$ oscillations and their relationship with prolactin gene expression in single, primary mammothropes. *Mol Endocrinol* 12, 87-95.
20. **Villalobos C**, Núñez L, Frawley LS, García-Sancho J and Sanchez A (1997) Multi-responsiveness of single anterior pituitary cells to hypothalamic releasing hormones: a cellular basis for paradoxical secretion. *Proc Natl Acad Sci (USA)* 94, 14132-14137.
21. **Villalobos C**, Núñez L and García-Sancho J (1997) Mechanisms for stimulation of anterior pituitary cells by arginine and other amino acids. *J Physiol (London)* 502, 421-431.
22. **Villalobos C**, Alonso-Torre, SR, Núñez L and García-Sancho J (1997) Functional ATP receptors in pituitary cells. *Am J Physiol* 42, C1963-C1971.
23. Núñez L, **Villalobos C** and Frawley LS (1997) Extracellular ATP as an autocrine/paracrine regulator of prolactin release. *Am J Physiol* 272, E1117-E1123.
24. Zheng T, **Villalobos C**, Nusser KD, Gettys TW, Faught WJ, Castaño JP and Frawley LS (1997) Phenotypic characterization and functional correlation of α -MSH binding to pituitary cells. *Am J Physiol* 272, E282-E287.
25. **Villalobos C**, Núñez L and García-Sancho J (1996) Functional glutamate receptors in a subpopulation of anterior pituitary cells. *FASEB J* 10, 654-660.
26. **Villalobos C** and García-Sancho J (1996) Caffeine-induced oscillations of cytosolic calcium in GH₃ pituitary cells are not due to Ca^{2+} release but to enhanced Ca^{2+} influx through voltage-gated Ca^{2+} channels. *Pflügers Arch* 431, 371-378.
27. **Villalobos C** and García-Sancho J (1995) Glutamate increases cytosolic calcium in GH₃ pituitary cells via a high-affinity glutamate transporter. *FASEB J* 9, 815-819.
28. **Villalobos C** and García-Sancho J (1995) Capacitative Ca^{2+} entry contributes to the calcium influx induced by thyrotropin-releasing hormone. *Pflügers Arch* 430, 923-935.
29. Vega MT, **Villalobos C**, Garrido B, Gandía L, Bulbena O, García-Sancho J, García AG and Artalejo AR (1994) Permeation by zinc of bovine chromaffin cell calcium channels: relevance to secretion. *Pflügers Arch* 429, 231-239.

30. Barros F, **Villalobos C**, García-Sancho J, del Camino D and de la Peña P (1994) The role of the inward rectifying K⁺ current in resting potential and thyrotropin-releasing hormone induced changes in cell excitability of GH₃ rat anterior pituitary cells. *Pflügers Arch.* 426, 221-230.
31. **Villalobos C**, Fonteriz RI, López MG, García AG and García-Sancho J (1992) Inhibition of voltage-gated Ca²⁺ entry into GH₃ and chromaffin cells by imidazole antimycotics and other cytochrome P₄₅₀ blockers. *FASEB J.* 6, 2742-2747.
32. García-Sancho J, Alvarez J, Montero M and **Villalobos C** (1992) Ca²⁺ influx following receptor activation: P₄₅₀ might provide signal for state of Ca²⁺ stores. *Trends Pharmacol. Sci.* 13, 12-13.
33. Alonso MT, **Villalobos C** and Sánchez A (1992) Effects of the anti-thrombotic agent PCA 4230 on agonist-induced Ca²⁺ entry and Ca²⁺ release in human platelets. *Biochim. Biophys. Acta* 1104, 257-260.

Invited Symposia

- *Multifunctional cells of the anterior pituitary depend on the age-related endocrine state and sex.* Pituitary plasticity symposium. 39th Annual Meeting of the Society for the Study of Reproduction. **Omaha, NB (USA)**. July 2006.
- *Cancer Chemoprevention: a new action mechanism for aspirin and salicylate.* Invited talk. 2005 Meeting of the Spanish Society for Biochemistry and Molecular Biology (SEBBM). **Zaragoza, Spain**. September 2005.
- *The aspirin metabolite salicylate prevents tumor cell growth by disrupting mitochondrial control of capacitative Ca²⁺ entry.* Invited Talk. XXXIII Congress of the Spanish Society of Physiological Sciences. Cell Signalling I Symposium. **Seville, Spain**. February 2005.
- *Bioluminescence imaging: a new tool for monitoring subcellular calcium and transcriptional dynamics in excitable cells.* Invited Talk. 12th International Symposium on Chromaffin Cell Biology (New Technologies Symposium). **La Palma, Canary Islands, Spain**. September 2003.
- *Aequorin imaging of subcellular calcium dynamics in excitable cells.* New Insights on Cell Signalling Symposium. XXIII Congress of the Spanish Society for Physiological Sciences (Joint Meeting with The Physiological Society). **Puerto de la Cruz, Tenerife, Spain**. February 2003.

Stays in Foreign Labs

- Medical University of South Carolina. Charleston, SC, USA. Jan 1996 – Jan 1999. (L. Stephen Frawley Lab).
- Constanz University, Konstanz, Germany. July-August, 1992. (Volker Ullrich Lab).

Societies

- Endocrine Society
- The Physiological society
- Sociedad Española de Ciencias Fisiológicas
- Sociedad Española de Bioquímica y Biología Molecular