

2 Modelling and Simulation of Biological Systems

54. **Understanding the role of mitochondria distribution in calcium dynamics in chromaffin cells: experiments and models.** A. Gil, V. González-Vélez, J. Villanueva and L.M. Gutiérrez. Submitted.
55. **A theoretical study of factors influencing calcium-secretion coupling in a presynaptic active zone model.** A. Gil, V. González-Vélez, J. Segura and L.M. Gutiérrez. *Mathematical Biosciences and Engineering* 11(5) (2014) 1027-1043.
56. **Exocytotic Dynamics in Human Chromaffin cells: Experiments and Modeling.** A. Albillos, A. Gil, V. González-Vélez, A. Pérez-Álvarez, A. Hernández-Vivanco, J.C. Caba-González, J. Segura. *Journal of Computational Neuroscience* 34(1) (2013) 27-37.
57. **Neurites emission in chromaffin cells: study of the influence of the cytoskeletal structure on calcium dynamics and secretion.** A. Gil, C. Torregrosa-Hetland, V. González-Velez, J. Villanueva, V. Garcia, J. Segura, L. M. Gutierrez. *Frontiers in Life Science* 6(3-4) (2012) 61-69.
58. **Computational methods to study Ca^{2+} -triggered secretion at the cellular level.** V. González-Vélez, A. Gil, G. Dupont. *Journal of Computational Interdisciplinary Science* 3(1-2) (2012) 19-31.
59. **Model for glucagon secretion by pancreatic α -cells.** V. González-Vélez, G. Dupont, A. Gil, I. Quesada. *PLoS ONE* 7(3) (2012) e32282.
60. **Modelling F-actin cortex influence on the secretory properties of neuroendocrine cells.** L.M. Gutiérrez, A. Gil. *Communicative & Integrative Biology* 4(4) (2011) 1-3.
61. **The F-actin cortical network is a major factor influencing the organization of the secretory machinery in chromaffin cells.**

- C.J. Torregrosa-Hetland, D. Giner, I. Lopez-Font, J. Villanueva, A. Nadal, I. Quesada, S. Viniegra, A. Gil, V. Gonzalez-Velez, J. Segura and L.M. Gutierrez. *Journal of Cell Science* 124(5) (2011) 727-734.
62. **Association of SNAREs and calcium channels with the borders of cytoskeletal cages organizes the secretory machinery in chromaffin cells** . C. Torregrosa-Hetland, J. Villanueva, I. Lopez, Virginia Garcia, A. Gil, V. Gonzalez-Velez, J. Segura, S. Viniegra, and L.M. Gutierrez. *Cellular and Molecular Neurobiology* 30(8) (2010) 1315-1319.
 63. **Minimal state models for ionic channels involved in glucagon secretion**. V. González-Vélez, A. Gil, I. Quesada. *Mathematical Biosciences and Engineering* 7(4) (2010) 793-807.
 64. **Interdisciplinary approaches to calcium dynamics and secretory processes in cells**. Editorial. A. Gil, J. Segura. *HFSP Journal* 4(2) (2010) 41-42.
 65. **The organization of the secretory machinery in chromaffin cells as a major factor in modeling exocytosis**. J. Villanueva, C.J. Torregrosa-Hetland, A. Gil, V. González-Vélez, J. Segura, S. Viniegra, L.M. Gutiérrez. *HFSP Journal* 4 (2) (2010) 85-92.
 66. **Exocytotic dynamics and calcium cooperativity effects in the calyx of Held synapse: a modelling study**. A. Gil, V. González-Vélez. *Journal of Computational Neuroscience* 28(1) (2010) 65-76
 67. **Software for simulating calcium-triggered exocytotic processes**. G. Carrera, A. Gil, J. Segura, B. Soria. *American Journal of Physiology-Cell Physiology* 292(2007) C749-C755.
 68. **Calcium3D: a visual software package for the simulation of calcium buffered diffusion in Neuroendocrine Cells**. G. Carrera, A. Gil, J. Segura. *Computer Methods and Programs in Biomedicine* 80(2005), 173-180.
 69. **CA3D: A Monte Carlo code to simulate 3-D buffered diffusion of ions in sub-membrane domains**. A. Gil & J. Segura. *Computer Physics Communications* 136 (2001) 269-293.

70. **Modelling study of exocytosis in neuroendocrine cells: influence of the geometrical parameters.** J. Segura, A. Gil & B. Soria. *Biophysical Journal* 79 (4) (2000) 1771-1786
71. **Engineering pancreatic islets.** B. Soria, E. Andreu, G. Berna, E. Fuentes, A. Gil, E. Montanya, A. Nadal, T. Leon-Quinto, C. Ripoll, E. Roche, F.A. Reig, J.V. Sanchez-Andres & J. Segura *Pflugers Archiv. European Journal of Physiology* 404 (2000) 1-18.
72. **Monte Carlo simulation of 3-D buffered Ca²⁺ diffusion in neuroendocrine cells.** A. Gil, J. Segura, J.A.G. Pertusa & B. Soria. *Biophysical Journal* 78 (1) (2000) 13-33.