

CURRICULUM VITAE ABREVIADO (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

First name	María Isabel		
Family name	Geli Fernández-Peñaflor		
Gender (*)	female	Birth date	12/07/1966
Social Security, Passport, ID number	38080794Q		
e-mail	mgfbmc@ibmb.csic.es	https://www.ibmb.csic.es/en/department-of-cells-and-tissues/the-endocytic-pathway-and-the-actin-cytoskeleton/	
Open Researcher and Contributor ID (ORCID) (*)	0000-0002-3452-6700		

(*) *Mandatory*

A.1. Current position

Position	Investigadora científica del CSIC		
Initial date	01/05/2009		
Institution	Consejo Superior de Investigaciones Científicas		
Department/Center	Cell Biology	Instituto de Biología Molecular de Barcelona	
Country	Spain	Teleph. number	644250746
Key words	Endocytosis actin myosin-I yeast sterols ceramides		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause	
198 -1989	Pregraduate student	Centro de Investigación y Desarrollo (CSIC)
1990-1993	Ph.D. student (FPI)	Centro de Investigación y Desarrollo (CSIC)
1994-1998	Postdoctoral Fellow	Biozentrum (University of Basel)
1999-2002	Principal Investigator	Biochemie Zentrum (University of Heidelberg)
2003-2009	Científica Titular CSIC	Instituto de Biología Molecular de Barcelona (CSIC)
2009-	Inv. Científica CSIC	Instituto de Biología Molecular de Barcelona (CSIC)

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Master Biology	University of Barcelona	1989
Ph. D. in Biology	University of Barcelona	1993

Part B. CV SUMMARY (max. 5000 characters, including spaces)

After her Ph. D. in plant cell biology, M. I. Geli obtained in 1994, a postdoctoral **EMBO fellowship** for the laboratory of **Prof. H. Riezman** at the **Biozentrum of the University of Basel**, where she worked as a postdoctoral fellow for 5 years. The group of H. Riezman pioneered studies on endocytosis in *S. cerevisiae* and made major contributions to explain the molecular mechanism of membrane traffic. In January **1999**, M. I. Geli started her scientific career as an **independent researcher** at the **Biochemie-Zentrum of the University of Heidelberg**. Her position was included in a German Research Network dedicated to the analysis of the molecular mechanisms implicated in intracellular transport processes (SFB352: *Molecular Mechanisms of Intracellular transport processes*). The network included a number of outstanding scientists such as Prof. F. Wieland, Prof. B. Dobberstein or Prof. K. Simons. During this period, M. I. Geli established a research line on the mechanisms of membrane deformation within the endocytic pathway. In **2003**, M. I. Geli got a position as **Científica Titular del CSIC** at the Instituto de Biología Molecular de



Barcelona (IBMB). In June 2009, M. I. Geli was promoted to **Investigadora Científica del CSIC**. From 2008 to 2011 M. I. Geli was **Chairwoman of the Cell Biology Department**. From 2014 to 2022, M. I. Geli was **Deputy Director of the IBMB**. Along her career, M. I. Geli has made significant contributions that have been published in scientific journals such as *Plant Cell*, *Science*, *EMBO J.*, *J. Cell Biol.*, *PNAS*, *Nat Cell Biol* or *Dev. Cell*. Since the start of her career as an independent researcher, she got continued peer-reviewed funding from the German DFG and the Spanish Government. She has supervised **eight Ph. D. Thesis** and six Master Thesis. She has been appointed six times by the AEI (Spanish Agency of Research) as a **member of the evaluation panels** for national grants in the area of fundamental biology and once for the selection of Juan de la Cierva postdoctoral contracts. She has been appointed by the AGAUR (Spanish Research Agency) for the selection of the Beatriz-Pinos postdoctoral contracts, once by the DEVA (Andalusian Agency of Research) for the selection of postdoctoral fellows, and once by the FCT (Portugues Research Agency) for the selection of principal investigators and research associates. She has been member of more than twenty Ph. D. Thesis panels, twice member of the selection panel for Research Scientist of the CSIC and once for the Junior Principal Investigators of the CRG (Center for Genomic Regulation). She **reviews** projects for national (ANEP, DEVA) and international agencies (HFSP, ATIP-Avenir) and articles from renowned journals such as *Cell*, *Nature Cell Biology* or the *Journal of Cell Biology*. She is currently an **editorial board member of ELife**.

Essential contributions of her scientific career are: 1) description of the first membrane budding process driven by luminal cargo (Geli *et al* 1994 *Plant Cell*); 2) discovery of the role of type I myosins in membrane budding (Geli and Riezman 1996 *Science*); 3) description of the first molecular motor capable of inducing Arp2/3-dependent actin polymerization (Geli *et al* 2000 *EMBO J*); 4) deciphering of the molecular mechanisms underlying the regulation of type I myosins (Geli *et al* 1998 *EMBO J*, and Grötsch *et al* 2010 *EMBO J*); 5) development of time-resolved electron microscopy to study endocytic budding in a cellular context and definition of endocytic functional modules with unprecedented resolution (Idrissi *et al* 2008 *J Cell Biol* and Idrissi *et al* 2010 *PNAS*); 6) description of a phosphoinositide/CK2 interplay in endocytic budding with important implications in cancer (Fernandez-Golbano *et al* 2014 *Dev. Cell.*); 7) Identification of the ER-endocytic contact sites and characterization of their function initiating actin polymerization (Encinar *et al* 2017 *Dev. Cell*); 8) identification and characterization of the ERSES (ER Sterol Synthesis and Exit Sites) and their asymmetric function in endocytic uptake in dividing cells (Encinar *et al.* 2021 *J Cell Biol*) and 9) identification and characterization of a candidate dynein adaptor for early endosomal transport (Hernández-Pérez *et al* 2023 *Elife*).

Part C. RELEVANT MERITS

C.1. Publications

1. Prischich D, Camarero N, Encinar Del Dedo J, Cambra-Pellejà M, Prat J, Nevola L, Martín-Quirós A, Rebollo E, Pastor L, Giralt E, Geli MI*, Gorostiza P*,. Light-dependent inhibition of clathrin-mediated endocytosis in yeast unveils conserved functions of the AP2 complex. (2023) *iScience*. Sep 12; 26(10):107899. *co-corresponding
2. Hernandez-Perez I, Rubio J, Baumann A, Girao H, Ferrando M, Rebollo E, Aragay AM, Geli MI. Kazrin promotes dynein/dynactin-dependent traffic from early to recycling endosomes. (2023) *ELife*. Apr 25;12:e83793.
3. Encinar del Dedo J, Fernández-Golbano I-M, Pastor, L., Meler P, Ferrer C, Rebollo E, Geli MI. Coupling of the sterol synthesis and transport machineries at ER-Endocytic Contact Sites. (2021) *J. Cell Biol.* 220(10):e202010016.
4. Encinar del Dedo J, Idrissi F-Z, Fernandez-Golbano I M, Garcia P, Rebollo E, Krzyzanowski M K, Grötsch H, Zimmermann T , Geli MI. ORP-mediated ER contact with endocytic sites initiates actin polymerization. (2017) *Dev. Cell.* 43:588-602.
5. Fernández-Golbano IM, Idrissi FZ, Giblin JP, Grosshans BL, Robles V, Grötsch H, Borrás MM and Geli MI. A cross-talk between PI(4,5)P₂ and CK2 modulates actin polymerization during endocytic uptake (2014) *Dev. Cell.* 30(6):746-58.
6. Idrissi FZ, Blasco A, Espinal A and Geli MI. "Ultrastructural dynamics of proteins involved in endocytic budding" (2012) *Proc Natl Acad Sci U S A.* 109: E2587-94.



7. Grötsch H, Giblin JP, Idrissi FZ, Fernández-Golbano IM, Collette JR, Newpher TM, Robles V, Lemmon SK, Geli MI. "Calmodulin dissociation regulates Myo5 recruitment and function at endocytic sites" *EMBO J.* (2010) 29: 2899-914.
8. Idrissi F-Z, Grötsch H, Fernández-Golbano IM, Presciatto-Baschong C, Riezman H and Geli MI. (2008) "Distinct acto/myosin-I structures associate with endocytic profiles at the plasma membrane" *J. Cell Biol.* 180: 1219-32.
9. Geli MI*, Schmelzl B, Lombardi R, and Riezman H (2000) "An intact SH3 domain is required for myosin-I induced actin polymerization" *EMBO J.* 19, 4281-91. *corresponding
10. Geli MI and Riezman H (1996) "Role of type I myosins in receptor-mediated endocytosis in yeast" *Science* 272, 533-5.

C.2. Congress

1. **Selected** oral communication. Fernandez-Golbano IM and Geli MI. Role of sterols and ceramides at ER-endocytic contact sites. *Yeast Lipid Conference 2022*. Gothenburg, Sweden. June 1-3 2022.
2. **Invited** oral communication. Encinar del Dedo J, Fernandez-Golbano IM, Rebollo E, Meler P, Geli MI. Role of ER Sterol Exit Sites (ERSES) in endocytic uptake *DFG international Meeting. Life in between: the cell biology of interfaces* Münster, Germany. September 27-29 2021.
3. **Invited** oral communication. Encinar del Dedo J, Idrissi F-Z, Fernandez-Golbano I M, Garcia P, Rebollo E, Krzyzanowski M K, Grötsch H, Zimmermann T, Geli MI. ORP-mediated ER contact with endocytic sites initiates actin polymerization. *Membrane Biophysics of exo-endocytosis*. Nize, France. April 3-6 2019.
4. **Invited** oral communication. Encinar del Dedo J, Idrissi F-Z, Fernandez-Golbano I M, Garcia P, Rebollo E, Krzyzanowski M K, Grötsch H, Zimmermann T, Geli MI. ORP-mediated ER contact with endocytic sites initiates actin polymerization. *Journal of Cell Science Meeting on Organelle-Cytoskeleton Interface*. Lisbon, Portugal. May 19-22 2019.
5. **Selected** oral communication. Encinar del Dedo J, Idrissi F-Z, Fernandez-Golbano I M, Garcia P, Rebollo E, Krzyzanowski M K, Grötsch H, Zimmermann T, Geli MI. OSBP-mediated ER contact with endocytic sites initiates actin polymerization. *Monod Conferences for Molecular basis for membrane remodelling and organization*. Roscoff, France. April 3-7 2017.
6. **Invited** oral communication. Idrissi FZ, Blasco A, Espinal A and Geli MI. Ultrastructural dynamics of proteins involved in endocytic budding. *Symposium of The Protein Society Proteins in Dynamic and Driven Processes*. San Diego (USA) July 26-29, 2014.
7. **Invited** oral communication. Fernández-Golbano IM, Idrissi FZ, Giblin J, Grosshans B, Grötsch H, Borrás MM and Geli MI. A cross-talk between PI(4,5)P₂ and CK2 modulates actin remodeling during endocytic uptake. *Gordon Conference on Lysosomes & Endocytosis* Andover, USA. June 15-20 2014.
8. **Selected** oral communication. Idrissi FZ, Blasco A, Espinal A and Geli MI. Ultrastructural dynamics of proteins involved in endocytic budding. *Monod conferences for molecular basis for membrane remodelling and organization*. Roscoff, France. April 3-7 2011.
9. **Selected** oral communication. Grötsch, H, Giblin, J P, Idrissi, FZ, Fernández-Golbano, I.M, Collette, J R, Newpher, TM, Robles, V, Lemmon, SK and Geli, M. I. Calmodulin dissociation regulates Myo5 recruitment and function at endocytic sites. *Biochemical Society Conference on Cellular Cytoskeletal Motor Proteins*. Hinxton, UK. 2011
10. **Selected** oral communication. Idrissi FZ, Grötsch H, Fernández-Golbano IM, Presciatto-Baschong C, Riezman H and Geli, M. I. Distinct acto/myosin-I structures associate with endocytic profiles at the plasma membrane. *EMBO-FEBS Workshop on Endocytic Systems: Mechanism and Function*. Villars-sur-Ollon, Switzerland. 2007.

C.3. Research projects.

1. Dynamic Architecture of Life, LifeArchCAT. 60,000 Euros.
AGAUR, 2021SGR00421. 01/2023-12/2025. PI/Coordinator: M. I. Geli.
2. Regulation of transient macromolecular complexes by sterols, phosphoinositides and CK2. 223,850 Euros.
AEI, PID2020-120053GB-I00. 09/2021-08/2024. PI: M. I. Geli.
3. Mecanismos moleculares de la endocitosis. 270,000 Euros.
AEI, BFU2017-82959P. 07/2018-12/2020. PI: M. I. Geli.



4. Mecanismos moleculares de la endocitosis. 302.500,00 Euros.
AEI, BFU2014-59765-P. 1/2015- 31/12/2017. PI: M.I. Geli.
5. Mechanism and physiological functions of endocytosis. 287.980,00 euros.
AEI, BFU2011-30185. 01/2011- 31/12/2014. PI: M. I. Geli.
6. Mechanism of Protein Secretion ad Compartment Organization. 245.000 Euros.
AEI, CSD2009-00016. Coor Prof. Vivek Malhotra. 01/2009-12/2014. PI: M.I. Geli.
7. Mecanismo molecular de la endocitosis dependiente de actina. 199.000 Euros.
AEI, BFU2008-03500. 01/2009-12/2011. PI: M. I. Geli.
8. Análisis del mecanismo de internalización endocítico dependiente de ubiquitina, esteroles y actina de un receptor asociado a proteína G (GPCR) en levadura. 124.950 Euros.
AEI, BFU2005-04089. 01/2006-12/2008. PI: M. I. Geli.
9. Estudio de la endocitosis asociada a rafts lipídicos y actina. 129.000 Euros.
AEI, SAF2002-04707. 01/2003-12/2005. PI: M. I. Geli.
10. Molecular Mechanism of Intracellular Transport Processes. 1.005.711 Euros.
Deutsche Forschungsgemeinschaft SFB 352 (C10). 02/1999-12/2003. PI: M. I. Geli.

C.4. Contracts, technological or transfer merits

1. Utilización de la levadura como sistema reportador de la actividad de GPCRs humanos.
Almirall Prodesfarma SA. 2009. 12.000 euros. PI: M. I. Geli
2. Report on possible strategies for Lysosomal targeting of human enzymes expressed and purified from yeast. **Bioingenium S.L.** 2010. 3000 euros. PI: M. I. Geli