

Curriculum Vitae

Begoña García-Álvarez

Department of Biochemistry and Molecular Biology I. Faculty of Chemistry Sciences. Complutense University of Madrid. Spain. C/ José Antonio Novais, 12. 28040. Madrid. Spain.

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Personal Information

Name: Begoña García Álvarez

Birth date: 01-24-1972

Birthplace: Madrid. Spain.

Marital status: Married, 1 daughter, 1 son

Home address: C/Golfo de Salónica, 20. 8º E

28033. Madrid. Spain.

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Education

1996 BSc in Chemistry. University Complutense of Madrid (UCM). Spain.

1998 MSc in Biochemistry. UCM. Subject: Crowding studies of Tubulin by dextran.

1999 MSc in Applied Biomolecular Technology, University of Nottingham, UK.

2003 PhD in Chemistry, The Burnham Institute La Jolla CA, USA and UCM. Defended June 20th 2003.

Thesis Subject: Structural and functional studies of the cytoskeleton protein Talin. *Supervised* by R.C. Liddington The Burnham Institute & J.M. de Pereda The Burnham Institute, La Jolla, CA. USA

2003-2006 Posdoctoral Position at the Spanish National Cancer Center. Structural Biology and Biocomputational Program. Madrid. Spain.

2006-2010 Posdoctoral Position at the Center of Biological Research. Spanish Research Council. Madrid. Spain.

2010-Present Research Ramón y Cajal program. Position at the Complutense University of Madrid. Spain.

2010-Present Assistant Professor/Tenure track research at the Complutense University of Madrid. Spain.

Research Positions held

1996-1998 Ph.D. Student in the G.Rivas's Lab at the Center of Biological Research (CSIC). Spain.

1998-1999 MSc. Student in the NCMH Unit at School of Biological Sciences. University of Nottingham. UK. Advisor: Professor S.E. Harding

2000-2003 Ph.D. Student in the R.C. Liddington Lab at the The Burnham Institute. La Jolla, CA. USA.

2003-2006 Posdoctoral Position at the Spanish National Cancer Center (CNIO). Structural Biology and Biocomputing Programme. Madrid. Spain.

2006-2010 Posdoctoral Position at the Center of Biological Research (CIB). Spanish Research Council (CSIC). Madrid. Spain.

2010-Present Researcher Position (Ramon y Cajal Researcher) at the Complutense University of Madrid. Spain.

2015 Visiting Researcher, California University, Berkeley. California, USA.

2016 Visiting Researcher, Leigh University. Chemical & Biomolecular Eng. Dept. Bioengineering Program.

Publications

Roldan N, Pérez-Gil J, Morrow MR, **García-Álvarez B**. Biophys J. 2017 Aug 22;113(4):847-859.

doi:10.1016/j.bpj.2017.06.059.

Roldan N., Nyholm T.K. M., Slotte J.P., Pérez-Gil J, **García-Álvarez B**. Biophys J. 2016 Oct 18;111(8):1703-1713. doi: 10.1016/j.bpj.2016.09.016.

Olmeda B., **García-Alvarez B**., Gomez-Rodriguez MJ., Cruz A., Perez-Gil J. FASEB J. 2015 Oct;29(10):4236-47. Doi: 10.1096/fj.15-273458

Roldán N, Goormaghtigh E, Pérez-Gil J, **García-Alvarez B**. 2014. BBA-Biomembranes. 2015 January. Vol 1848 (1): 1 84-191.

Olmeda B, **García-Álvarez B**, Pérez-Gil J. Eur Biophys J. 2013 Mar; 42(2-3): 209-22.

Núñez-Ramírez R, Klinge S, Sauguet L, Melero R, Recuero-Checa MA, Kilkenny M, Perera RL, **García-Alvarez B**, Hall RJ, Nogales E, Pellegrini L, Llorca O.

Nucleic Acids Res. 2011 Oct; 39(18): 8187-99. Erratum in: Nucleic Acids Res. 2012 May; 40(10):4726.

García-Alvarez B, Melero R, Dias FM, Prates JA, Fontes CM, Smith SP, Romão MJ, Carvalho AL, Llorca O. J Mol Biol. 2011 Apr 8; 407(4): 571-80.

Adami A, **García-Alvarez B**, Arias-Palomo E, Barford D, Llorca O. Mol Cell. 2007 Aug 3; 27(3): 509-16.

García-Alvarez B, de Carcer G, Ibañez S, Bragado-Nilsson E, Montoya G. Proc Natl Acad Sci U S A. 2007 Feb 27; 104: 3107-3112.

B. García-Alvarez, S. Ibañez, G. Motonya.

Acta Crystallograph Sect F Struct Biol Cryst Commun. 2006 Apr 1; 62(Pt 4): 372-5.

Ho-Sup Lee, Robert M. Bellin, Diane L. Walker, Bipin Patel, Pam Powers, Hongjun Liu, **Begoña García-Álvarez**, José M. de Pereda, Robert C. Liddington, Niels Volkman, Dorit Hanein, David R. Critchley and Richard M. Robson. J Mol Biol. 2004 Oct 22; 343(3): 771-84.

B. García-Alvarez, A. Bobkov, A. Sonnenberg, and J. M. de Pereda. Structure 2003, 11: 1-20.

D.A. Calderwood, Y. Fujioka, J.M. de Pereda, **B. García-Alvarez**, T. Nakamoto¹, B. Margolis, C. Jane McGlade, R.C. Liddington and M. H. Ginsberg. PNAS 2003, 100: 2272-2277.

B. García-Alvarez, J.M. de Pereda, D.A. Calderwood, T.S. Ulmer, D. Critchley, I.D. Campbell, M.H. Ginsberg, and R.C. Liddington. Molecular Cell 2003 11: 49-58.

Calderwood D.A., Yan B., de Pereda J.M., **García-Alvarez B**, Fujioka Y., Liddington RC and Ginsberg MH. The phosphotyrosine binding-like domain of talin activates integrins. J Biol Chem. 2002 Jun 14; 277(24): 21749-58.

Proceeding

2012 *Begoña García-Alvarez, Bárbara Olmeda, Antonio Cruz, Jesús Pérez-Gil.*

Biophysical Journal, Volume 102, Issue 3, Supplement 1, 31 January 2012, Pages 625a-626a. ISSN/ISBN: 0006-3495.

2013 *Nuria Roldán, Elena López-Rodríguez, Jesús Pérez-Gil, Begoña García-Alvarez*

Awards

- 1998-1999** "European Social Fundation" M.Sc Fellowship
2003-2005 EMBO Long Term Fellowship
2005-2006 Beca Postdoctoral del Ministerio de Educación y Ciencia. MEC/FULLBRIGHT
2006-2009 Juan de la Cierva
2009-2010 JAE-DOC (CSIC)
2010-2017 Ramón y Cajal
2017 Associate Professor Department of Biochemistry and Molecular Biology I. Faculty of Chemistry Sciences. Complutense University of Madrid.
2013 Biophysical Society and the Committee for Professional Opportunities for Woman CPOW Travel Award
2014 Biophysical American Society and International Relations Committee Travel Awards
2015 Positive Evaluation of the Ramón y Cajal Research Program I3.
2014 Agencia Estatal Profesora Ayudante Doctora. Número de Registro: PAD: 2014-3372
2014 Acreditación ANECA Profesora Contratada Doctora. Número de Registro: PCD: 2014-3371
2016 Visiting Research Fellowship Program José Castillejo.
2016 Visiting Research Fellowship Program Del Amo.

Meeting

- 2003** *Bioinformatics: present applications and future challenges.* Barcelona, Spain.
2004 CCC: "Structural Biology of Cancer Targets". CNIO Cancer Conference. Madrid, Spain
2004 3rd Portuguese-Spanish Biophysics Congress. Portuguese Biophysical Society. Spanish Biophysical Society. Lisbon, Portugal.
2006 CONGRESS Portuguese Biophysical Society. Spanish Biophysical Society. Madrid, Spain.
2008 CCC: "STRUCTURE AND MECHANISMS OF ESSENTIAL COMPLEXES FOR CELL SURVIVAL". CNIO Cancer Conference. Madrid, Spain.
2008 1st Portuguese-Spanish-British Joint Biophysics Congress 2008. Portuguese Biophysical Society. Spanish Biophysical Society. British Biophysical Society. Lisbon, Portugal.
2010 IV Spanish-Portuguese Biophysics Congress. Portuguese Biophysical Society. Spanish Biophysical Society. Zaragoza. Spain.
2011 XI Congreso de la SEB. Sociedad Española de Biofísica de España. Murcia, Spain.
2012 Biophysical Society 56th Annual Meeting (American Biophysical Society). San Diego, California. USA
2012 CONGRESS 22ND IUBMB 37TH FEBS : FROM SINGLE MOLECULES TO SYSTEMS BIOLOGY. IUBMB-FEBS 2012 Sevilla Congress (IUBMB, FEBS & SEBBM). Sevilla, Spain.
2013 Biophysical Society 57th Annual Meeting (American Biophysical Society). Philadelphia, Pennsylvania. USA.
2014 Biophysical Society 57th Annual Meeting (American Biophysical Society). San Francisco, USA.
2014 XIVth Congress of Spanish Biophysical Society. Alcalá de Henares, Madrid, Spain.

Biophysical Journal, Volume 104, Issue 2, Supplement 1, 29 January 2013, Pages 63a-64a ISSN/ISBN: 0006-3495

2014 Nuria Roldán, Jesús Pérez-Gil, Begoña García-Alvarez. *Biophysical Journal, Volume 106, Issue 2, 513a, 28 January 2014* doi:10.1016/j.bpj.2013.11.2869

Skills

I have strong background in Structural Biology. Areas of expertise include engineering and purification of proteins and macromolecular complexes and membrane proteins, structure determination with X-ray Crystallography and electron microscopy, and structure-based functional analysis.

Protein expression and purification using various expression systems, as bacterial (E. coli), eukaryotic (insect cells/baculovirus system) and in-vitro (cell-free, both bacterial and eukaryotic systems). Cloning and site-directed mutagenesis.

Protein expression and purification of the membrane proteins into nanolipoproteins systems that preserve the integrity of the membrane proteins and forms nanoparticles their biophysical, biochemical and structural analysis in a native environment.

X-ray Crystallography skills include crystallization and optimization, small molecule co-crystallization and soaking, structure determination and analysis, synchrotron data collection and processing.

Imaging and 3D reconstruction by transmission electron microscopy. Single particle analysis with Cryo-EM and negative staining.

Other biophysical techniques: Circular Dichroism (CD), IR-FTIR, Absorption and Fluorescence Spectroscopy, Dynamic Light Scattering (DLS), Nuclear Magnetic Resonance spectroscopy (NMR), Electron Paramagnetic Resonance (ESR), Analytical Ultracentrifugation and Isothermal Titration Calorimetry (ITC).

Interest

Presently, I am particularly interest in the characterization of the structural and functional relationship of the Pulmonary Surfactant Proteins SP-C and SP-B and the Biochemical, Biophysical and Structural studies of these membrane protein in a system that have the ability to mimic the same behavior of the native environment. The last five years my research work has been focused in the characterization of the structural and functional determination of the Surfactant Protein SP-C. This scientific effort has been reflected in my recent publications.