

## CURRICULUM VITAE

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**NAME** Ana Jesús **García Sáez**

**BIRTH** 2nd January 1977 in Valencia (Spain)

**CITIZENSHIP** Spanish

**WORK ADDRESS** **Interfaculty Institute of Biochemistry (IFIB)**  
**University of Tübingen**  
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### EDUCATION

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ACADEMIC DEGREES	CENTRE	DATE
M.S. Biochemistry	Universitat de València	June 2000
M.S. Chemistry	Universitat de València	July 2003
Diploma of Advanced Studies	Universitat de València	November 2002
PhD	Universitat de València	10 <sup>th</sup> June 2005

### SCIENTIFIC EXPERIENCE

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- **Full Professor in Biochemistry (W3)**, from 1<sup>st</sup> October 2013. At IFIB, University of Tübingen. Principal investigator of the department Membrane Biophysics.
- **Max Planck Research Group Leader and DKFZ Junior Group Leader**, January 2010 –September 2013. At Bioquant, Heidelberg, Germany. Principal Investigator of the group Membrane Biophysics.
- **Postdoc Fellow**, 1<sup>st</sup> January 2007 – 31<sup>st</sup> December 2009. At BioTec, TU Dresden, Germany. Project: Effect of tBid on the reorganization of cardiolipin and cytochrome c during apoptosis. Supervisor: Prof. Petra Schwille
- **Postdoc Researcher**, 15<sup>th</sup> October 2005 – 31<sup>st</sup> December 2006. At BioTec, TU Dresden, Germany. Project: *Effects on line tension in dynamic membrane processes*. Supervisor: Prof. Petra Schwille
- **Guest Researcher**, from 10<sup>th</sup> May to 10<sup>th</sup> August 2005. At Institute for Biophysics/BioTec, TU Dresden, Germany. Project: *Assessing the role of Bax on the formation and stability of lipidic pores*. Supervisor: Prof. Petra Schwille
- **Visiting PhD Student**, from 1<sup>st</sup> June to 1<sup>st</sup> September 2004. At Centro Fisica Stati Aggregati, CNR-IRC, Trento, Italy. Project: *Structural and functional characterisation of peptides from Bax, Bid and Bcl-xL*. Supervisor: Mauro Dalla Serra
- **Visiting PhD Student**, from 1<sup>st</sup> September to 15<sup>th</sup> November 2003. At Centro Fisica Stati Aggregati, CNR-ITC, Trento, Italy. Project: *Interaction of Bax<sup>a5</sup> and Bid<sup>a6</sup> with model membranes*. Supervisor: Dr. Gianfranco Menestrina/ Mauro Dalla Serra

- **PhD Student**, from November 2000 to 10<sup>th</sup> June 2005. At the Department of Biochemistry and Molecular Biology, University of Valencia, Spain. Thesis project: *Characterising the interaction of fragments derived from Bax, Bid and Bcl-xL with lipid membranes*. Supervisor: Dr. Jesús Salgado.
- **Undergraduate student, 1997-2000**. At the Department of Biochemistry and Molecular Biology, University of Valencia, Spain. Project: *Overexpression and purification of heterologous procaspase 3*. Supervisor: Dr. Enrique Pérez-Payà

### FELLOWSHIPS and AWARDS

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- **EMBO Young Investigator**. Since 1<sup>st</sup> Jan 2017.
- **ERC Starting Grant 2012**
- **Max-Planck Gesellschaft Postdoctoral scholarship**, 1<sup>st</sup> Jan 2009 – 31<sup>st</sup> Dec 2009.
- **Marie Curie Intra European fellowship**. 6th Framework Programm, Marie Curie Actions. BIOTEC, TU Dresden (Germany). Jan 2007-Dec 2008.
- **Short-term Fellowship**. Federation of European Biochemical Societies. Biotechnologisches Zentrum, Technische Universität, Dresden (Germany). May-July 2005.
- **Predocctoral Fellowship**. Formación de Profesorado Universitario, Ministerio Español de Educación y Cultura. Faculty of Biology, University of Valencia. 1st April 2001- 31st March 2005
- **Predocctoral Fellowship**. Formació de Personal Investigador, Conselleria de Cultura i Educació de la Generalitat Valenciana. 1st March – 1st April 2001.
- **Predocctoral Fellowship**. Formación de Personal Investigador, Ministerio Español de Ciencia y Tecnología. 13th July 2001- 13th July 2001.
- **Undergraduate Research Fellowship**. Beca de Colaboración, Ministerio Español de Educación y Cultura. Faculty of Biology, University of Valencia. Sept. 1999-June 2000

### PUBLICATIONS IN SCI JOURNALS

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1. Kollek M, Voigt G, Molnar C, Murad F, Bertele D, Krombholz CF, Bohler S, Labi V, Schiller S, Kunze M, Geley S, Niemeyer CM, **García-Saez A**, Erlacher M. Transient apoptosis inhibition in donor stem cells improves hematopoietic stem cell transplantation. **J Exp Med**. 2017 (Epub ahead of print)
2. Artetxe I, Ugarte-Urbe B, Gil D, Valle M, Alonso A, **García-Sáez AJ**, Goñi FM. Does Ceramide Form Channels? The Ceramide-Induced Membrane Permeabilization Mechanism. **Biophys J**. 2017 Aug 22;113(4):860-868.
3. Peña-Blanco A, **García-Sáez AJ**. Bax, Bak and beyond - mitochondrial performance in apoptosis. **FEBS J**. 2017 (Epub ahead of print)
4. Kumar Singh P, Roukounakis A, Frank DO, Kirschnek S, Das KK, Neumann S, Romer JMW, Zorzin C, Borner C, Haimovici A, **García-Saez A**, Weber A, Hacker G. Dynein light chain 1 induces assembly of large Bim complexes on

- mitochondria that stabilize Mcl-1 and regulate apoptosis. **Genes & Dev.** 2017 (Epub ahead of print)
5. Bleicken S, Hantusch A, Das KK, Frickey T, **Garcia-Saez AJ**. Quantitative interactome of a membrane Bcl-2 network identifies a hierarchy of complexes for apoptosis regulation. **Nat Commun.** 2017 July; 8:73.
  6. Ugarte-Urbe B, **Garcia-Saez AJ**. Apoptotic foci at mitochondria: in and around Bax pores. **Philos Trans R Soc Lond B Biol Sci.** 2017 Aug; 372(1726).
  7. Danial JS, **Garcia-Saez AJ**. Improving certainty in single molecule imaging. **Curr Opin Struct Biol.** 2017 May; 46:24-30.
  8. Ros U, Peña-Blanco A, Hänggi K, Kunzendorf U, Krautwald S, Wong WW-L, **Garcia-Saez AJ**. Necroptosis execution is mediated by plasma membrane nanopores independent of calcium. **Cell Rep.** 2017 Apr; 19(1):175-187.
  9. Das KK, Shalaby R, **Garcia-Saez AJ**. Determinants of BH3 sequence specificity for the disruption of Bcl-xL/cBid complexes in membranes. **ACS Chem Biol.** 2017 Apr; 12(4):989-1000.
  10. Fernández-Marrero Y, Bleicken S, Das KK, Bachmann D, Kaufmann T, **Garcia-Saez AJ**. The membrane activity of BOK involves formation of large, stable toroidal pores and is promoted by cBID. **FEBS J.** 2017 Mar; 284(5):711-724.
  11. Mesa Galloso H, Delgado-Magnero KH, Cabezas S, López-Castilla A, Hernández-González JE, Pedrera L, Alvarez C, Tieleman DP, **García-Saez AJ**, Lanio ME, Ros U, Valiente PA. Disrupting a key hydrophobic pair in the oligomerization interface of the actinoporins impairs their pore-forming activity. **Prot Sci.** 2017 Mar; 26(3):550-565.
  12. Cosentino K, **Garcia-Saez AJ**. Bax and Bak pores: are we closing the circle? **Trends in Cell Biol.** 2017 Apr; 27(4):266-275.
  13. Unsay JD, Cosentino K, Sporbeck K, **Garcia-Saez AJ**. Pro-apoptotic cBid and Bax exhibit distinct membrane remodeling activities: an AFM study. **Biochim Biophys Acta.** 2017 Jan; 1859(1):17-27
  14. Fischer AW, Bordignon E, Bleicken S, **García-Sáez AJ**, Jeschke G, Meiler J. Pushing the size limit of de novo structure ensemble prediction guided by sparse SDSL-EPR restraints to 200 residues: The monomeric and homodimeric forms of BAX. **J Struct Biol.** 2016 Jul;195(1):62-71
  15. **García Sáez AJ**, Villunger A. MOMP in the absence of BH3-only proteins. **Genes Dev.** 2016 Apr 15;30(8):878-80.
  16. Navarro G, Cordoní A, Zelman-Femiak M, Brugarolas M, Moreno E, Aguinaga D, Perez-Benito L, Cortés A, Casadó V, Mallol J, Canela EI, Lluís C, Pardo L, **García-Sáez AJ**, McCormick PJ, Franco R. Quaternary structure of a G-protein-coupled receptor heterotetramer in complex with Gi and Gs. **BMC Biol.** 2016 Apr 5;14:26.

17. Salvador-Gallego R, Mund M, Cosentino K, Schneider J, Unsay J, Schraermeyer U, Engelhardt J, Ries J, **García-Sáez AJ**. Bax assembly into rings and arcs in apoptotic mitochondria is linked to membrane pores. *EMBO J*. 2016 Feb 15; 35(4):389-401
18. Bleicken S, Hofhaus G, Ugarte-Urbe B, Schröder R, **García-Sáez AJ**. cBid, Bax and Bcl-xL exhibit opposite membrane remodeling activities. *Cell Death & Disease*. 2016 Feb 25; 7:e2121
19. Sudji IR, Subburaj Y, Frenkel N, **García-Sáez AJ**, Wink M. Membrane Disintegration Caused by the Steroid Saponin Digitonin Is Related to the Presence of Cholesterol. *Molecules*. 2015 Nov 9;20(11):20146-60.
20. Subburaj Y, Cosentino K, Axmann M, Pedrueza-Villalmanzo E, Hermann E, Bleicken S, Spatz J, **García-Sáez AJ**. Bax monomers form dimer units in the membrane that further self-assemble into multiple oligomeric species. *Nature Commun*. 2015 Aug 14; 6:8042.
21. Cosentino K, Ros U, **García-Sáez AJ**. Assembling the puzzle: Oligomerization of  $\alpha$ -pore forming proteins in membranes. *BBA - Biomembranes*. 2015 Sep 12. pii: S0005-2736(15)00298-9.
22. Ros U, Rodríguez-Vera W, Pedrera L, Valiente PA, Falcón SC, Lanio ME, **García-Saez AJ**, Alvarez C. Differences in activity of actinoporins are related with the hydrophobicity of their N-terminus. *Biochimie*. 2015; 116:70-8.
23. Unsay JD, Cosentino K, **García-Sáez AJ**. Atomic Force Microscopy Imaging and Force Spectroscopy of Supported Lipid Bilayers. *J Vis Exp*. 2015 Jul 22;(101):e52867
24. Ros U, **García-Sáez AJ**. More Than a Pore: The Interplay of Pore-Forming Proteins and Lipid Membranes. *J Membr Biol*. 2015 Jun;248(3):545-61.
25. Müller HM, Steringer JP, Wegehingel S, Bleicken S, Münster M, Dimou E, Unger S, Weidmann G, Andreas H, **García-Sáez AJ**, Wild K, Sinning I, Nickel W. Formation of disulfide bridges drives oligomerization, membrane pore formation and translocation of fibroblast growth factor 2 to cell surfaces. *J Biol Chem*. 2015; 290(14):8925-37.
26. Hermann E, Ries J, **García-Sáez AJ**. Scanning fluorescence correlation spectroscopy on biomembranes. *Methods Mol Biol*. 2015;1232:181-97.
27. Lorenz M, Vollmer B, Unsay JD, Klupp BG, **García-Saéz AJ**, Mettenleiter TC, Antonin W. A single herpesvirus protein can mediate vesicle formation in the nuclear envelope. *J Biol Chem* 2015; 290(11):6962-74.
28. Subburaj Y, Ros U, Hermann E, Tong R, **García-Sáez AJ**. Toxicity of an  $\alpha$ -pore-forming toxin depends on the assembly mechanism on the target membrane as revealed by single molecule imaging. *J Biol Chem*. 2015;290(8):4856-65.

29. Bleicken S, Jeschke G, Stegmueller C, Salvador-Gallego R, **García-Sáez AJ\***, Bordignon E\*. Structural model of active Bax at the membrane. *Molecular Cell*. 2014;56(4):496-505 (\*co-corresponding authors).
30. Ugarte-Uribe B, Müller HM, Otsuki M, Nickel W, **García-Sáez AJ**. Dynamin-related protein 1 (Drp1) promotes structural intermediates of membrane division. *J Biol Chem*. 2014; 289(44):30645-56
31. Bleicken S, **García-Sáez AJ**. “New biophysical methods to study the membrane activity of Bcl-2 proteins” *Methods Mol Biol*, 2014; 1176:191-207.
32. Cosentino K, **García-Sáez AJ**. “Mitochondrial alterations in apoptosis” *Chemistry and Physics of Lipids*, 2014; 181:62-75.
33. Hermann E, Subburaj Y, Bleicken S, **García-Sáez AJ**. “Automated GUV detection based on Hough transformation” *Bioinformatics*, 2014; 30(12):1747-54
34. Ugarte, B, **García-Sáez AJ**. “Membranes in motion: mitochondrial dynamics and their roles in apoptosis” *Biol Chem*. 2014; 395(3):297-311.
35. Bleicken S, Landeta O, Landajuola A, Basañez G, **García-Sáez AJ**. Proapoptotic Bax and Bak Proteins Form Stable Protein-permeable Pores of Tunable Size. *J Biol Chem*. 2013; 288(46):33241-52
36. Unsay JD, **García-Sáez AJ**. Scanning fluorescence correlation spectroscopy in model membrane systems. *Methods Mol Biol*. 2013; 1033:185-205.
37. Unsay JD, Cosentino K, Subburaj Y, **García-Sáez AJ**. Cardiolipin Effects on Membrane Structure and Dynamics. *Langmuir*. 2013; 29(51):15878-87.
38. Bleicken S, Wagner C, **García-Sáez AJ**. Mechanistic differences in the membrane activity of Bax and Bcl-xL correlate with their opposing function in apoptosis *Biophys J*. 2013, 104(2):421-431.
39. Jalmar O, Francois-Moutal L, **García-Saéz AJ**, Perry M, Granjon T, Gonzalez F, Gottlieb E, Ayala-Sanmartin J, Klösgen B, Schwille P, Petit PX. Caspase-8 binding to cardiolipin in giant unilamellar vesicles provides a functional docking platform for Bid. *PLOS One*. 2013, 8(2):e55250.
40. **García-Sáez AJ**. The secrets of the Bcl-2 proteins. *Cell Death and Differentiation* 2012, 19(11):1733-40.
41. Steringer J, Bleicken S, Andreas H, Zacherl S, Laußmann M, Contreras FX, Lechner J, Müller HM, Bharat TAM, Briggs JAG, **García-Sáez AJ**, Nickel W. PI(4,5)P2 Dependent oligomerization of Fibroblast Growth Factor 2 (FGF2) triggers the formation of a lipidic membrane pore implicated in unconventional secretion. *J Biol Chem* 2012, 287(33):27659-69.
42. Bleicken S, **García-Sáez AJ**, Conte E, Bordignon E. Dynamic interactions of cBid with detergents, liposomes and mitochondria. *PLOS One* 2012, 7(4):e35910.

43. Leprivier G, Rufini A, **García-Sáez AJ**, Borner C, Rotblat B. 7th Tuscany Retreat on Cancer Research: Genetic profiling, resistance mechanism and novel treatment concepts in cancer. *Cell Death Differ* 2012, 19(3):546-8.
44. Bleicken S, Otsuki M, **García-Sáez AJ** Quantification of protein-protein interactions within membranes by fluorescence correlation spectroscopy. *Current Prot & Pept Sci* 2011, 12(8):691-8.
45. **García-Sáez AJ**, Buschhorn SB, Keller H, Anderluh G, Simons K, Schwille P. Oligomerization and pore formation by Equinatoxin II inhibit endocytosis and lead to plasma membrane reorganization. *J Biol Chem* 2011, 286(43):37768-77.
46. Apellaniz B, **García-Sáez AJ**, Nir S, Nieva JL. Destabilization exerted by peptides derived from the membrane-proximal external region of HIV-1 Gp41 in lipid vesicles supporting fluid phase co-existence. *BBA - Biomembranes* 2011, 1808:1797-805.
47. Jalmar O, **García-Sáez AJ**, Berland L, Gonzalez F, Petit PX. Giant unilamellar vesicles (GUVs) as a new tool for analysis of caspase-8/Bid-FL complex binding to cardiolipin and its functional activity. *Cell Death & Dis* 2010, 1, e103; doi:10.1038/cddis.2010.81
48. Apellániz B, Nieva JL, Schwille P and **García-Sáez AJ**. All-or-none vs. graded: a single vesicle analysis of membrane permeabilization evidences lipid composition effects. *Biophys J* 2010, 99(11):3619-28.
49. Ries J, Petrásek Z, **García-Sáez AJ** and Schwille P. A comprehensive framework for fluorescence correlation spectroscopy. *New J Phys* 2010, 12:113009
50. Fuertes G, **García-Sáez AJ**, Giménez D, Esteban-Martín S, Schwille P and Salgado J. Pores formed by Bax-alpha5 relax to a smaller size and keep at equilibrium. *Biophys J* 2010, 99(9):2917-25.
51. Klose C, Ejsing CS, **García-Sáez AJ**, Kaiser HJ, Sampaio JL, Schevchenko A, Schwille P and Simons K. Yeast lipids can phase separate into micrometer-scale membrane domains. *J Biol Chem* 2010, 285(39):30224-32.
52. Apellániz B, **García-Sáez AJ**, Huearte N, Kunert R, Schwille P and Nieva JL. Confocal microscopy of giant vesicles supports the absence of HIV-1 neutralizing 2F5 antibody reactivity to plasma membrane phospholipids. *FEBS Letters* 2010, 584(8):1591-6.
53. **García-Sáez AJ** and Schwille P. Stability of lipid domains. *FEBS Letters* 2010, 584(9):1653-8.
54. **García-Sáez AJ** and Schwille P. Surface analysis of membrane dynamics. *BBA-Biomembranes* 2010, 1798(4):766-776.
55. **García-Sáez AJ**, Ries J, Orzáez M, Pérez-Payà E and Schwille P. Membrane promotes tBid interaction with Bcl-xL. *Nature Structural and Molecular Biology* 2009, 16(11) :1178-85.

56. Ivashina O, **García-Sáez AJ**, Ries J, Christenson ET, Schwille P and Schlessinger P. Oligomeric state of Bax during detergent activation. *J Biol Chem* 2009, 284(36):23935-46.
57. **García-Sáez AJ** and Schwille P. Fluorescence correlation spectroscopy for the study of membrane dynamics and protein/lipid interactions. *Methods* 2008, 46(2):116-22
58. Schoen P, **García-Sáez AJ**, Malovrh P, Bacia K, Anderluh G and Schwille P. Equinatoxin II permeabilizing activity depends on the presence of sphingomyelin and lipid phase coexistence. *Biophys J* 2008, 95(2):691-8
59. **García-Sáez AJ**, Chiantia S and Schwille P. Effect of line tension on the lateral organization of lipid membranes. *J Biol Chem*, 2007, 282(46):33537-44.
60. **García-Sáez AJ** and Schwille P. Single molecule techniques for the study of membrane proteins. *Appl Microbiol Biotech*, 2007, 76 (2):257-66.
61. **García-Sáez AJ**, Chiantia S, Salgado J and Schwille P. Pore formation by a Bax-derived peptide: effect on the line tension of the membrane probed by AFM. *Biophys J*, 2007, 93(1):103-12.
62. **García-Sáez AJ**, Coraiola M, Dalla Serra M, Mingarro I, Salgado J. Peptides corresponding to helices 5 and 6 of Bax can independently form large pores of lipidic nature. *FEBS Journal*, 2006, 273(5):971-81.
63. **García-Sáez AJ**, Coraiola M, Dalla Serra M, Mingarro I, Menestrina G, Salgado J. Peptides derived from apoptotic Bax and Bid reproduce the poration activity of the parent full-length proteins. *Biophys J*, 2005, 88 (6):3976-3790.
64. **García-Sáez AJ**, Mingarro I, Pérez-Payà E, Salgado J. Membrane insertion fragments of Bcl-xL, Bax and Bid. *Biochemistry (USA)*, 2004, 43 (34):10930-43.
65. Salgado J, **García-Sáez AJ**, Malet G, Mingarro I, Pérez-Payà E. Peptides in apoptosis research. *Journal of Peptide Science*, 2002, 8:543-60.

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#### BOOK CHAPTERS

1. Subburaj Y, Salvador Gallego R, **García-Sáez AJ**  
 "Membrane dynamics as revealed by fluorescence studies"  
 Encyclopedia of Analytical Chemistry. (2013) accepted
2. Unsay J, **García-Sáez AJ**.  
 "Progress in fluorescence correlation spectroscopy to investigate membrane dynamics" Chapter for volume on Membrane Biogenesis in the *Methods in Molecular Biology* series. Editor: Prof. Doron Rapaport (accepted)
3. Zelman-Femiak M, Subburaj Y, **García-Sáez AJ**  
 "Fluorescence correlation spectroscopy to study membrane organization and interactions" Ed. Guy Duportail and Ives Mely, SPRINGER SERIES ON FLUORESCENCE *Fluorescent Methods to Study Biological Membranes*, Springer Series on Fluorescence 2013; 13:241-269.

4. **García-Sáez AJ**, Carrer D and Schwille P  
“Fluorescence correlation spectroscopy in giant unilamellar vesicles”  
Ed. Wolkmar Weissig, *Methods in Molecular Biology* (2010), 606:493-508.
5. **García-Sáez AJ**, Fuertes G, Suckale J, Salgado J  
“Permeabilization of the outer mitochondrial membrane by the Bcl-2 proteins”  
Ed. Gregor Anderluh and Jeremy Lakey, Landes Bioscience, 2009
6. Fuertes G, Giménez D, Esteban-Martin S, **García-Sáez AJ**, Sánchez O and Salgado J  
“Role of membrane lipids for the activity of pore forming proteins and peptides”  
Ed. Gregor Anderluh and Jeremy Lakey, Landes Bioscience, 2009

### FUNDED PROJECTS

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- Stoichiometry of homo- and hetero-complexes of the Bcl-2 proteins at the single molecule level. DACH Forschungsgruppe, **DFG. 2017-2020**. PI: Ana J. Garcia-Saez. Amount: €414.100.
- Structural dynamics of membrane-bound Bax oligomers: intramolecular flexibility vs. population heterogeneities. **DFG. 2016-2019**. PI: Ana J. Garcia-Saez. Amount: €206.325.
- Deciphering the BH3 code for the neutralization of antiapoptotic Bcl-2 proteins. DACH Forschungsgruppe, **DFG. 2014-2017**. PI: Ana J. García-Sáez. Amount: €375.500.
- **ERC Starting Grant 2012**: *The quantitative Bcl-2 interactome in apoptosis: decoding how cancer cells escape death*. European Research Council. **2013 to 2019**. Coordinator: Ana J. García-Sáez. Amount: €1.462.000.
- **Junior group-Nanobiotechnology**: *Cell migration and adhesion in complex environments*. BMBF. **2010-2015**. Coordinator: Ana J. Garcia-Saez. Amount: €842.000
- *Effect of tBid on the reorganization of cardiolipin and cytochrome c during apoptosis*. European Commission. Marie Curie Intra-European Fellowship. 2007-2008. Coordinator: Ana J. Garcia-Saez
- *Investigating the relevance of lipid microdomains for HI virus particle assembly in an artificial cell environment, by means of single molecule fluorescence spectroscopy and microscopy*. Deutsche Forschungsgemeinschaft. October 2005 to October 2007. Coordinator: Petra Schwille
- *Folding of constitutively hydrosoluble proteins in lipid membranes: Structural study of proteins of the Bcl-2 family*. Ministerio de Educación y Ciencia. Dirección General de Investigación Científica y Técnica. 2005 to 2007. Coordinator: Jesús Salgado Benito
- *Translocation into lipid media as a regulating mechanism: activation mechanism of proteins of the Bcl-2 family using biophysic and bioinformatic methods*. Projectes d'Investigació de la Generalitat Valenciana. 2004 to 2005. Coordinator: Jesús Salgado Benito
- *Grants for I+D+I groups*. Agencia Valenciana de Ciencia y Tecnología. 2003 to 2005. Coordinator: Ismael Mingarro Muñoz



- *Characterisation of molecular targets for the regulation of cellular apoptosis. Assay development for the identification of modulators with therapeutic uses.* Ministerio de Ciencia y Tecnología, Programa Nacional de Biomedicina (SAF 2001-2811) 28/12/01 to 27/12/04. Coordinator: Enrique Pérez Payà

**INVITED PRESENTATIONS to peer-reviewed, internationally established conferences and/or international advanced schools**

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1. Garcia-Saez AJ (2017) Apoptosis control by the Bcl-2 network at the single molecule level. **Cold Spring Harbor Meeting on Cell Death.** Cold Spring Harbor, USA.
2. Garcia-Saez AJ (2017) Membrane permeabilization in cell death. **Cell Death and Disease.** Menaggio di Como, Italy.
3. Garcia-Saez AJ (2017) Mitochondrial alterations in apoptosis at the single molecule level. **16th Spanish Biophysical Society Congress.** Sevilla, Spain.
4. Garcia-Saez AJ (2017) Architecture of apoptotic foci in mitochondria. **EMBO/EMBL Symposium: Molecular and Cell Biology of membranes.** Heidelberg, Germany.
5. Garcia-Saez AJ (2017) Necroptosis execution is mediated by plasma membrane nanopores independently of calcium. **Fusion Conference on Cell Death, Cell Stress and Metabolism.** Cancun, Mexico.
6. Garcia-Saez AJ (2017) Mechanical aspects of mitochondrial alterations in apoptosis. **61st Meeting of the Biophysical Society.** New Orleans, USA.
7. Garcia-Saez AJ (2017) Structural and biophysical properties of the apoptotic pore. **EMBO Workshop on Cell Death.** Obergurgl, Austria.
8. Garcia-Saez AJ (2016) Mitochondrial permeabilization by Bax at the single molecule level. **39th Congress of the Spanish Society for Biochemistry and Molecular biology (SEBBM).** Salamanca, Spain.
9. Garcia-Saez AJ (2016) Bax pores: one particle at a time. **Gordon Research Conference on Cell Death.** Girona, Spain.
10. Garcia-Saez AJ (2016) New insights into Bax pore formation from advanced microscopy methods. **Membrane pores: from structure and assembly, to medicine and technology. The Royal Society.** London, UK.
11. Garcia-Saez AJ (2016) Mitochondrial permeabilization by Bax at the single molecule level. **Keystone Symposium on Mitochondrial Dynamics.** Mont Snow, USA.
12. Garcia-Saez AJ (2015) Bax and the pore: new insight from single molecule microscopy. **23rd Euroconference on apoptosis.** Geneva, Switzerland.
13. Garcia-Saez AJ (2015) Oligomerization of pore forming proteins in membranes at the single molecule level. **Biophysical Society Thematic Meeting: Biophysics of proteins at surfaces. Assembly, activation, signaling.** Madrid, Spain.
14. Garcia-Saez AJ (2015) Fluorescence correlation spectroscopy to study protein interactions in membranes. **EMBO Practical Course Single molecule and single cell fluorescence Å/nm/µm/mm-scopy.** Heidelberg, Germany.
15. Garcia-Saez AJ (2014) New insights into mitochondrial permeabilization in apoptosis. **8th Swiss Apoptosis Meeting,** Bern, Switzerland.

16. García-Saez AJ (2014) New insights into mitochondrial permeabilization in apoptosis. **58th Meeting of the Biophysical Society**, San Francisco, USA.
17. García-Saez AJ (2013) Advanced microscopy methods to study Bax mitochondrial permeabilization in apoptosis. **Physics of Cancer**, Leipzig, Germany.
18. García-Saez AJ (2013) New insights into membrane permeabilization by Equinatoxin II. **Physics meets biology at the membrane**, San Sebastian, Spain.
19. García-Saez AJ (2013) Mitochondrial alterations in apoptosis. **64. Mosbacher Kolloquium – Membranes in motion**. Mosbach, Germany.
20. García-Sáez AJ (2013) Advanced microscopy approaches to study Bax pore formation. **XIII International Congress of the Spanish Biophysical Society**, Valencia, Spain.
21. García-Sáez AJ (2012) Advanced microscopy methods to study apoptosis regulation. **Research Training Group "GRK 1188"**, Heidelberg, Germany
22. García-Sáez AJ (2012) Differences in the membrane activity of Bax and Bcl-xL reconcile their opposed function in apoptosis. **European Workshop in Cell Death 2012**, Monetier les Bains, France.
23. García-Sáez AJ (2011) Quantification of protein-protein interactions and dynamics within lipid membranes by fluorescence correlation spectroscopy. **IRB Biomed Conference, Macromolecular Dynamics**. Barcelona, Spain. (selected, cancelled due to illness)
24. García-Sáez AJ (2011) On the use of advanced microscopy methods to understand processes in biomembranes. **46<sup>th</sup> Fall meeting**. Burg Homberg, Germany.
25. García-Sáez AJ (2011) New insights into the Bcl-2 proteins: of single vesicles and individual molecules. **7th Tuscany Retreat on Cancer Research**, Palazzo di Piero, Sarteano-Siena, Italy.
26. García-Sáez AJ (2011) Advanced microscopy techniques to investigate the mechanism of the Bcl-2 proteins. Research program structural and functional genomics. **DKFZ International PhD program**, Heidelberg, Germany.
27. García-Sáez AJ (2010) Fluorescence correlation spectroscopy to measure dynamics in lipid membranes. **BIGGS Summer School 2010** of the Ellitenetzwerk Bayern, Würzburg, Germany.
28. García-Sáez AJ (2010) Quantification of protein-protein interactions within membranes by fluorescence correlation spectroscopy. **IV Spanish Portuguese Biophysical Congress**, Zaragoza, Spain.
29. García-Sáez AJ (2010) Single molecule applications in membrane biophysics. **European Biophysical Societies' Association, EBSA Biophysics Course on Membrane Biophysics and Lipid/Protein Interaction**. Arcachon, France.
30. García-Sáez AJ, Buschhorn S, Keller H, Simons K and Schwille P (2009) Equinatoxin II induces plasma membrane organization in cells during its toxic action. **49<sup>th</sup> Annual Meeting of the American Society for Cell Biology**, San Diego, USA
31. García-Sáez AJ, Ries J, Orzáez M, Pérez-Payà E and Schwille P (2008) Lipid membranes promote interaction of tBid with Bcl-xL. **International Workshop on Quantitative analysis of dynamic processes in membrane transport and tranlocation**, Heidelberg, Germany

32. García-Sáez AJ, Ries J, Orzáez M, Pérez-Payà E and Schwille P (2008) Interactions between Bcl-2 proteins in the membrana: single molecule studies. **XXXI Congress of Spanish Society of Biochemistry and Molecular Biology**, Bilbao, Spain
33. García-Sáez AJ (2008) Fluorescence correlation spectroscopy and lipid domains. **Workshop of European Membrane Biology Network - Membrane proteins and proteomics**, Groningen, Netherlands
34. García-Sáez AJ, Chiantia S and Schwille P (2007) Line tension effects on the lateral organization of lipid membranes. A study by confocal microscopy coupled to AFM. **Focus on Microscopy**, Valencia, Spain.
35. García-Sáez AJ, Dalla Serra M, Menestrina G, Coraiola M, Pérez-Payà E, Mingarro I & Salgado J (2004) Biophysical characterisation of putative pore forming peptides derived from apoptotic Bcl-2 proteins. **9th Iberian Peptide Meeting**. Porto, Portugal

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### PROFESSIONAL EXPERIENCE

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- **Member of Editorial Board of the journals Journal of Biological Chemistry, FEBS Journal and Physics and Chemistry of Lipids.**
- **Editor for the book series Advances in Biomembranes and Lipid Self-Assembly.**
- **Reviewer for Nature, Science, Nature Chemical Biology, PNAS, EMBO Journal, EMBO Reports, Biophysical Journal, Cell Death and Differentiation, Nature Communications, FEBS Journal, Langmuir, Cell Death and Disease, FEBS Letters, Physical Biology, BBA Biomembranes, etc.**
- **Grant reviewer** for the German Research Society (DFG), Swiss National Science Foundation (SNSF) International Foundation for Sciences (IFS), the French National Agency of Research, the Volkswagen Foundation, the Alexander von Humboldt Foundation, the Baden-Württemberg Foundation, the intramural grant program of the ETH Zurich, the German Service for Academic Exchange (DAAD), the Polish Agency of Sciences and the Portuguese Foundation for Science and Technology (FCT).
- **Organizer of the 585. WE-Hereaus Seminar: Advanced microscopy of membrane biophysics.** (Bad Honef, Germany, 2015).
- **Co-Chair of Research Conference Cellular Nano-Sciences** (Heidelberg, July 2011) and **International Summer School Cellular Systems** (Heidelberg, August 2011) on the occasion of the 625<sup>th</sup> anniversary of the Ruprecht-Karls-University Heidelberg
- **Co-organizer Max Lead Meeting 2012** (Berlin, May 2012)
- **Member of selection committee** for the Max Planck Research Group Leaders in the section of chemistry, physics and technology (2011).
- **Faculty member of the IMPRS Tübingen.**

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### TEACHING

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- (2014 - ): Course “Membrane Organization and Dynamics” at the Master Degree in Biochemistry of the University of Tübingen.

- (2015 - ): Course “Science of cooking” at the Bachelor Degree in Biochemistry of the University of Tübingen.
- (2015 - ): Course Biochemistry III (Lipid Metabolism) at the Bachelor Degree in Biochemistry of the University of Tübingen.
- (2015 - ): Course “Advanced Biochemistry” (Signaling) at the Master Degree in Biochemistry of the University of Tübingen.
- (2012): Course “Seminar Techniques” at the Bachelor Degree in Molecular Biotechnology of the University of Heidelberg.
- (2011-2012): Course “Physical methods in systems biology” at the Master Degree in Molecular Biosciences of the University of Heidelberg.
- (2010): Course “Membrane biophysics” at the HBIGS International PhD program of the University of the Heidelberg.
- (2005-2008): Course: “Experimental biophysics” at the International PhD Program from the MPI-CBG, Master Degree in Physics from the TU Dresden and Master Degree in Bionanotechnology from the TU Dresden.
- (2003-2005). Course: Instrumental techniques of analysis and separation. Degree in Biology. University of Valencia