

CURRICULUM VITAE

Personal Data

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Education

1981 Bachelor's Degree in Chemical Sciences (Speciality: Organic Chemistry), University of Barcelona
1982 Master's in Organic Chemistry, University of Barcelona
1988 Ph.D. in Organic Chemistry, University of Barcelona
1988 Bachelor's Degree in Physical Sciences (Speciality: Theoretical Physics), University of Barcelona

Positions

1983-1987 Teaching Assistant, Dept. of Organic Chemistry, University of Barcelona
1987-1989 Teaching Associate, Dept. of Organic Chemistry, University of Barcelona
1989-1990 Research Fellow, Dept. Pharmacology, University of Texas Southwestern Medical Center (UTSWMC)
1990-1991 Assistant Instructor, Dept. Pharmacology, UTSWMC
1991-1993 Instructor, Dept. Pharmacology, UTSWMC
1993-1994 Research Assistant Professor, Dept. Pharmacology, UTSWMC
1995-2001 Assistant Professor, Dept. Pharmacology, UTSWMC
1996-2001 Assistant Professor, Dept. Biochemistry, UTSWMC
2001-2003 Associate Professor, Dept. Pharmacology, UTSWMC
2001-2003 Associate Professor, Dept. Biochemistry, UTSWMC
2003- Professor, Dept. Pharmacology, UTSWMC
2003- Professor, Dept. Biochemistry, UTSWMC
2010-2017 Chair, Molecular Biophysics Graduate Program, UTSWMC
2012- Professor, Dept. Biophysics, UTSWMC
2013-present Virginia Lazenby O'Hara Chair in Biochemistry

Teaching Experience

1982-1987 Recitation (30 hours/year) and laboratory (200 hours/year) on general chemistry and organic chemistry for first- to fifth-year students in the Faculty of Chemistry, University of Barcelona
1987-1988 Lectures (90 hours) and laboratory (140 hours) on general chemistry for first-year students in the Faculty of Biology, University of Barcelona
1991- Magnetic resonance course (half semester) and lectures on biophysics and mathematics for graduate students of the Biophysics Program in UTSWMC
1995- Lectures on Nuclear Magnetic Resonance, on Protein Folding and Protein Structure, and on membrane fusion in the Core Course of the Division of Cell and Molecular Biology in UTSWMC. Courses on Advanced Nuclear Magnetic Resonance Spectroscopy, Modern Methods in Structural Biology and Physical Chemistry of Macromolecules of the Molecular Biophysics

Graduate Program in UTSWMC.

Grants, Awards, Service and Honors

1980-1981	Fellow, Undergraduate Research Collaborator, INAPE (Spain)
1982-1983	Fellow, Ministry of Education and Science, Spain
1983	Student Award, Catalan Society of Physical, Chemical and Mathematical Sciences (Spain)
1983	IV Sant Albert Award for Graduate Research, School of Chemistry Graduates, Catalan Chemical Association (Spain)
1989-1990	Postdoctoral Fellow, Ministry of Education and Science, Spain; at UTSWMC
1994-1996	Joint Grant United Cerebral Palsy Foundation/Hearst Foundation, "Analysis of the structure and binding properties of synaptotagmin"
1995-1998	Grant Welch Foundation "Analysis of interactions between synaptic proteins by NMR"
1995-2000	Grant NIH (R29) "Structural and Binding Properties of Synaptotagmin"
1997-2016	Grant NIH (RO1) "Structure and Function of Syntaxin 1"
1998-2001	Grant Welch Foundation "Structure and interactions of Vln0"
1998-2001	Established Investigator Award from the American Heart Association
2000	Student invited speaker, 'From genes to thoughts' Symposium, EMBL, Heidelberg
2001-2004	Grant Welch Foundation "Rab/SNARE coupling at the synapse"
2001-present	Member, Faculty of 1000
2001-2016	Grant NIH (RO1) "Synaptotagmin and C2-domains: Structure and Function"
2002	Member, NIH Shared Instrumentation Study Section
2002	High End Instrumentation Grant NIH "800 MHz NMR spectrometer"
2003-2004	Grant Muscular Dystrophy Association "Structure and function of MUNC13 and RIM"
2003-2006	Scientific Advisory Board, DFG-Research Center for Molecular Physiology of the Brain, Gottingen, Germany
2003	Member, NIH Special Emphasis Panel to Review the MIT/Harvard Center for Magnetic Resonance resource grant
2004-2007	Grant Welch Foundation "Mechanism of Ca ²⁺ -dependent Neurotransmitter Release"
2004	Ad hoc member, BBCB study section from NIH
2004	Ad hoc member, MDCNA2 study section from NIH
2004	Member, NIH Shared Instrumentation Study Section
2004	Member, NIH Special Emphasis Panel to Review Program Project Grant from UCSD
2005	Member, NIH Special Emphasis Panel to Review Program Project Grant from Salk-Baylor
2005	Ad hoc member, MSFC study section from NIH
2005	Ad hoc member, SYN study section from NIH
2005	University Lecture, UTSWMC, Dallas, Texas
2006-2009	Permanent member, SYN study section from NIH
2006	Visiting Lecturer of the Alberta Heritage Foundation for Medical Research
2006	Molecular Biosciences Lecturer, Wichita State University
2007-present	Grant Welch Foundation "NMR methods to study membrane proteins in lipid bilayers"
2007-2010	Human Frontiers Science Program grant "Roles of V0 and SNAREs in lipid mixing and pore opening during membrane fusion"
2008-	K. P. Professor, Zhejiang University, Hangzhou, China
2009	Graduate Student invited Molecular and Cellular Biology seminar, University of Massachusetts, Amherst
2010	Closing Lecture, 35th Lorne Conference on Protein Structure and Function, Lorne, Australia
2010	Keynote Speaker, Centre for Neurogenomics and Cognition Research, Amsterdam, The Netherlands
2010	Opening Lecture, IV Spanish Portuguese Biophysical Congress, Zaragoza, Spain
2012	ZRG1 BCMB-B January Study Section from NIH
2012-2018	CPRIT MIRA Award (co-PI) "Molecular and Structural Basis of Epigenetic Regulation of AR"
2013	Keynote Lecture, 8th Asian Biophysics Association Symposium, Jeju Island, South Korea

2013 Neuroscience Distinguished Lecture, University of Toronto
 2013 MDCN September Special Emphasis Panel from NIH
 2014-present Guest Professor, Huazhong University of Science and Technology, Wuhan, China
 2014 Co-Organizer, 26th International Conference on Magnetic Resonance in Biological Systems, Dallas, Texas, USA
 2014-2019 International Scientific Advisory Board, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany
 2014 ZRG1 F05-R(20)L February Study Section from NIH
 2014-present Coordinator of the Polish Visiting Research Graduate Traineeship Program at UTSWMC
 2015 BDMA February Study Section from NIH
 2015-present Visiting Professor, Academia Sinica, Taipei, Taiwan
 2015 Keynote Lecture, 17th International Neuroscience Winter Conference, Soelden, Austria
 2015 Medalla Narcis Monturiol al Merit Científic, Generalitat de Catalunya
 2016-present American Heart Association - Basic Cell PC1 April Study Section
 2016 ZRG1 BCMB-D Program Project Study Section from NIH
 2016-present Research Program Award NIH (R35) "Mechanisms of neurotransmitter release and its regulation"
 2017-present Scientific Advisory Board, Institute of Biological Chemistry, Academia Sinica, Taipei, Taiwan
 2017 ZNS1 SRB-J (16) Special Emphasis Panel for review of R35 applications, NIH
 2017 Keynote lecture, Collaborative Research Center 665, Developmental disturbances in the nervous system, Final Symposium, Berlin, Germany
 2017 Ad hoc member, Biophysics of Neural Systems study section from NIH
 2017-present Scientific Advisory Board, STXBP1 Disorders Foundation

Memberships

American Chemical Society
 Sociedad de Biofísica de España
 Biophysical Society
 American Association for the Advancement of Science

Editorial Boards

Cell Research
 Journal of Molecular Cell Biology

Publications

1. J. Rizo, "Aplicació de la RMN de ¹³C a l'estudi de suports polimèrics emprats en la Síntesi de Pèptids en Fase Sòlida", *Butll. Soc. Cat. Cièn. III*, 35-85 (1984).
2. E. Giralt, J. Rizo, and E. Pedrosa, "Application of Gel-Phase ¹³C-NMR to monitor Solid Phase Peptide Synthesis", *Tetrahedron* 40, 4141-4152 (1984).
3. J. Rizo, F. Albericio, G. Romero, C. Garcia-Echeverria, J. Claret, C. Muller, E. Giralt and E. Pedrosa, "Use of Polar Picolyl Protecting Groups in Peptide Synthesis", *J. Org. Chem.* 53, 5386-5389 (1988).
4. F. Albericio, E. Nicolas, J. Rizo, M. Ruiz-Gayo, E. Pedrosa and E. Giralt, "Convenient Synthesis of Fluorenylmethyl-Based Side Chain Derivatives of Glutamic and Aspartic acids, Lysine, and Cysteine", *Synthesis*, 119-122 (1990).
5. F. Albericio, J. Rizo, E. Nicolas, M. Ruiz-Gayo, F. Cardenas, C. Carreno, D. Andreu, E. Pedrosa, and E. Giralt, "Fluorenylmethyl-based side-chain Protecting Groups: Towards a New Strategy of Peptide Synthesis", in *Peptides: Chemistry, Structure, and Biology. Proceedings of the 11th American Peptide Symposium* (J. E. Rivier & G. R. Marshall, Eds.), Escom, Leiden, The Netherlands, pp. 923-924 (1990).

6. S. Stradley, J. Rizo, M. Bruch, Z.-P. Liu, and L. Gierasch, "Influence of Asparagine on Turn Formation in Cyclic Pentapeptides", in *Peptides: Chemistry, Structure, and Biology. Proceedings of the 11th American Peptide Symposium* (J. E. Rivier & G. R. Marshall, Eds.), Escom, Leiden, The Netherlands, pp. 644-646 (1990).
7. S. Stradley, J. Rizo, M. Bruch, A. Stroup, and L. Gierasch, "Cyclic Pentapeptides as Models for Reverse Turns: Determination of the Equilibrium Distribution Between Type I and Type II Conformations of Pro-Asn and Pro-Ala β -Turns", *Biopolymers* 29, 263-287 (1990).
8. E. Giralt, F. Albericio, F. Bardella, R. Eritja, M. Feliz, E. Pedroso, M. Pons and J. Rizo, "Gel-phase NMR Spectroscopy as a Useful Tool in Solid Phase Synthesis", in *Solid Phase Synthesis* (R. Epton, Ed.), SPCC (UK), Birmingham, pp. 111-120 (1990).
9. J. Rizo, M. M. Dhingra and L. M. Gierasch, "A Cyclic Hexapeptide Model for Asparagine Side-chain/backbone Interactions in a Protein α Turn", in *Peptides 1990. Proceedings of the 21st European Peptide Symposium* (E. Giralt & D. Andreu, Eds.), Escom, Leiden, The Netherlands, pp. 468-471 (1991).
10. J. Rizo, M. M. Dhingra and L. M. Gierasch, "Peptide Models for Reverse Turns. The Role of Asparagine in the α Position of a α turn", in *Molecular Conformations and Biological Interactions*, P. Balaram and S. Ramaseshan, Eds., Indian Academy of Sciences, Bangalore, India, 469-496 (1991).
11. J. Rizo, F. Blanco, B. Kobe, M. D. Bruch, D. W. Hoyt and L. M. Gierasch, "Conformations of Wild-type and Mutant OmpA Signal Sequences in Membrane Mimetic Environments", in *Peptides: Chemistry and Biology. Proceedings of the 12th American Peptide Symposium* (J. A. Smith and J. E. Rivier, Eds.), ESCOM, Leiden, The Netherlands, pp. 265-267 (1992).
12. R. J. Bienstock, S. C. Koerber, J. Rizo, J. Rivier, A. T. Hagler and L. M. Gierasch, "Conformation of a Highly Potent Bicyclic GnRH Antagonist by Combined Molecular Dynamics and Two-Dimensional NMR Analyses", in *Peptides: Chemistry and Biology. Proceedings of the 12th American Peptide Symposium* (J. A. Smith and J. E. Rivier, Eds.), ESCOM, Leiden, The Netherlands, pp. 262-264 (1992).
13. J. Rizo and L. M. Gierasch, "Constrained Peptides: Models of Bioactive Peptides and Protein Substructures", *Annu. Rev. Biochem.* 61, 387-418 (1992).
14. J. Rizo, S. C. Koerber, R. J. Bienstock, J. Rivier, A. T. Hagler and L. M. Gierasch, "Conformational Analysis of a Highly Potent, Constrained Gonadotropin-Releasing Hormone Antagonist I. Nuclear Magnetic Resonance", *J. Am. Chem. Soc.* 114, 2852-2859 (1992).
15. J. Rizo, S. C. Koerber, R. J. Bienstock, J. Rivier, L. M. Gierasch and A. T. Hagler, "Conformational Analysis of a Highly Potent, Constrained Gonadotropin-Releasing Hormone Antagonist II. Molecular Dynamics Simulations", *J. Am. Chem. Soc.* 114, 2860-2871 (1992).
16. J. Rizo, F. Albericio, E. Giralt and E. Pedroso, "Reversible protection of lysine to facilitate the purification of protected peptide segments", *Tetrahedron Lett.* 33, 397-400 (1992).
17. M. Bruch, J. Rizo and L. M. Gierasch "Impact of a Micellar Environment on the Conformations of Two Cyclic Pentapeptides", *Biopolymers* 32, 1741-1754 (1992).
18. J. Rizo, F. Blanco, B. Kobe, M. D. Bruch and L. M. Gierasch, "Conformational Behavior of Escherichia coli OmpA Signal Peptides in Membrane Mimetic Environments", *Biochemistry* 32, 4881-4894 (1993).
19. J. Rivier, L. Gierasch, J. Rizo, S. C. Koerber, A. Hagler, J. Porter, A. Corrigan, W. Vale and C. Rivier, "Probing the GnRH Receptor with Linear and Cyclic Analogs", in *Peptide Chemistry 1992. Proceedings of the 2nd Japan Symposium on Peptide Chemistry*, (N. Yanaihara, Ed.), ESCOM, Leiden, The Netherlands, 313-317

(1993).

20. R. J. Bienstock, J. Rizo, S. C. Koerber, J. E. Rivier, A. T. Hagler and L. M. Gierasch, "Conformational Analysis of a Highly Potent Dicyclic Gonadotropin-Releasing Hormone Antagonist by Nuclear Magnetic Resonance and Molecular Dynamics", *J. Med. Chem.* **36**, 3265-3273 (1993).

21. S. J. Stradley, J. Rizo and L. M. Gierasch, "The Conformation of a Hexapeptide Substrate Bound to Protein Farnesyltransferase", *Biochemistry* **32**, 12586-12590 (1993).

22. Z. Wang, J. Jones, J. Rizo and L. M. Gierasch, "Membrane-Bound Conformation of a Signal Peptide: a Transferred Nuclear Overhauser Effect Analysis", *Biochemistry* **32**, 13991-13999 (1993).

23. Z.-P. Liu, J. Rizo and L. M. Gierasch, "Equilibrium Folding Studies of Cellular Retinoic Acid Binding Protein, a Predominantly β -Sheet Protein", *Biochemistry* **33**, 134-142 (1994).

24. J. Rizo, R. B. Sutton, J. Breslau, S. C. Koerber, J. Porter, J. E. Rivier, A. T. Hagler and L. M. Gierasch, "Defining the Active Conformation of Gonadotropin Releasing Hormone (GnRH) through Design and Conformational Analysis of Constrained GnRH Analogs", in *Peptides: Chemistry, Structure and Biology. Proceedings of the 13th American Peptide Symposium* (R. S. Hodges and J. A. Smith, Eds.), ESCOM, Leiden, The Netherlands, pp. 766-768 (1994).

25. J. Rizo, Z.-P. Liu and L. M. Gierasch, " ^1H and ^{15}N NMR resonance assignments and secondary structure of cellular retinoic acid binding protein with and without bound ligand", *J. Biomol. NMR.* **4**, 741-760 (1994).

26. M. Sukumar, J. Rizo, M. Wall, L. A. Dreyfus, Y. M. Kupersztoch and L. M. Gierasch, "The Structure of *Escherichia Coli* Heat-Stable Enterotoxin b by Nuclear Magnetic Resonance and Circular Dichroism", *Protein Sci.* **4**, 1718-1729 (1995).

27. J. Rivier, G. C. Jiang, S. L. Lahrichi, J. Porter, S. C. Koerber, J. Rizo, A. Corrigan, L. Gierasch, A. Hagler, W. Vale and C. Rivier, "Dose relationship between GnRH antagonists and pituitary suppression", *Hum. Reprod.* **11 Suppl. 3**, 133-147 (1996).

28. J. E. Rivier, G.-C. Jiang, S. C. Koerber, S. L. Lahrichi, L. Porter, J. Rizo, L. Gierasch, A. Hagler, W. Vale, M. Karten, and C. L. Rivier, "GnRH antagonists: design, synthesis and side effects", *Proceedings of the Treatment with GnRH Analogs: Controversies and Prospectives* (M. Filicori, C. Flamigni, Eds.), 13-23 (1996).

29. J. Rizo and M. D. Bruch, "Structure Determination of Biological Macromolecules", in *NMR Spectroscopy Techniques*, second ed. (M. D. Bruch, Ed.), Marcel Dekker, New York, pp. 285-415 (1996).

30. J. Rizo, R. B. Sutton, J. Breslau, S. C. Koerber, J. Porter, A. T. Hagler, J. E. Rivier and L. M. Gierasch, "A Novel Conformation in a Highly Potent, Constrained Gonadotropin Releasing Hormone Antagonist", *J. Am. Chem. Soc.* **118**, 970-976 (1996).

31. J. Rizo and L. M. Gierasch, "Secondary Structure Elements in Peptides and Proteins: β -turns, β -helices and β -sheets", in *Encyclopedia of NMR* (D. M. Grant and R. K. Harris, Eds.), John Wiley & Sons, pp. 3517-3526 (1996).

32. X. Shao, B. A. Davletov, R. B. Sutton, T. C. Südhof and J. Rizo, "A Bipartite Ca^{2+} -Binding Motif in C_2 Domains of Synaptotagmin and Protein Kinase C", *Science* **273**, 248-251 (1996).

33. T. C. Südhof and J. Rizo, "Synaptotagmins: C_2 -Domain Containing Proteins that Regulate Membrane Traffic", *Neuron* **17**, 379-388 (1996).

34. X. Shao, C. Li, I. Fernandez, X. Zhang, T. C. Südhof and J. Rizo, "Synaptotagmin-Syntaxin Interaction: the

C₂-Domain as a Ca²⁺-Dependent Electrostatic Switch, *Neuron* 18,133-142 (1997).

35. A. L. Osterman, H. Brooks, J. Rizo and M. A. Phillips, □The role of Arg-277 in the binding of pyridoxal-5'-phosphate to *Trypanosoma brucei* ornithine decarboxylase, *Biochemistry* 36, 4558-4567 (1997).

36. C. Von Poser, K. Ichtchenko, X. Shao, J. Rizo and T. C. Südhof, □The Evolutionary Pressure to Inactivate: a Subclass of Synaptotagmins with an Amino Acid Substitution that Abolishes Ca²⁺ Binding, *J. Biol. Chem.* 272, 14314-14319 (1997).

37. K. K. Reddy, J. Rizo and J. R. Falck, □Concise Synthesis of L-□-Phosphatidyl-D-*myo*-Inositol 3,4-Biphosphate, an Intracellular Messenger, *Tetrahedron Letters* 38, 4729-4730 (1997).

38. X. Shao, T. C. Südhof and J. Rizo, □Assignment of the ¹H, ¹⁵N and ¹³C resonances of the calcium-free and calcium-bound forms of the first C₂-domain of synaptotagmin I, *J. Biomol. NMR* 10, 307-308 (1997).

39. P. L. Clark, Z.-P. Liu, J. Rizo and L. M. Gierasch, □Cavity formation before stable hydrogen bonding in the folding of a □-clam protein, *Nature Struct. Biol.* 4, 883-886 (1997).

40. J. Rizo, "Peptides", in *The Encyclopedia of Chemistry* (J. J. Lagowski, Ed.), Macmillan, New York, NY, 1145-1151 (1997).

41. Z.-P. Liu, J. Rizo and L. M. Gierasch, "Protein Folding", in *Bioorganic Chemistry: Peptides and Proteins* (S. M. Hecht, Ed.), Oxford University Press, New York, NY, 224-257 and 493-498 (1998).

42. J. Rizo* and T. C. Südhof*, □C₂-domains, structure and function of a universal Ca²⁺-binding domain, *J. Biol. Chem.* 273, 15879-15882 (1998).

43. J. Ubach, X. Zhang, X. Shao, T. C. Südhof and J. Rizo, □Ca²⁺-binding to synaptotagmin: how many Ca²⁺ ions bind at the tip of a C₂-domain?, *EMBO J.* 17, 3921-3930 (1998).

44. R. G. Kibbey, J. Rizo, L. M. Gierasch and R. G. W. Anderson, □The LDL receptor clustering motif interacts with the clathrin terminal domain in a reverse turn conformation, *J. Cell. Biol.* 142, 59-67 (1998).

45. X. Zhang, J. Rizo and T. C. Südhof, □Mechanism of phospholipid binding by the C₂A-domain of synaptotagmin I, *Biochemistry* 37, 12395-12403 (1998).

46. X.-M. Yang, W.-F. Yu, J.-H. Li, J. Fuchs, J. Rizo and M. L. Tasayco, □NMR evidence for the reassembly of an □/□ domain after cleavage of an □-helix: implications for protein design, *J. Am. Chem. Soc.* 120, 7985-86 (1998).

47. X. Shao, I. Fernandez, T. C. Südhof and J. Rizo, □Solution structures of the Ca²⁺-free and Ca²⁺-bound C₂A-domain of synaptotagmin I: does Ca²⁺ induce a conformational change?, *Biochemistry* 37, 16106-16115 (1998).

48. I. Fernandez, J. Ubach, X. Zhang, T. C. Südhof and J. Rizo, □Three-dimensional structure of an evolutionarily conserved N-terminal domain of syntaxin 1A, *Cell* 18, 841-849 (1998).

49. J. Rizo and T. C. Südhof, □Mechanics of membrane fusion, *Nature Struct. Biol.* 5, 839-842 (1998).

50. P. L. Clark, M. Sukumar, Z. P. Liu, J. Rizo, B. F. Weston, K. S. Rotondi and L. M. Gierasch, "Folding of a predominantly □-sheet", in *Peptides. Proceedings of the 15th American Peptide Symposium* (J. P. Tam, P. T. P. Pravin, Eds.), Kluwer, Dordrecht, The Netherlands, pp. 349-351 (1999).

51. R. Baluna, J. Rizo, B. E. Gordon, V. Ghetie and E. S. Vitetta, □Evidence for a structural motif in toxins and interleukin-2 which may be responsible for binding to endothelial cells and initiating vascular leak syndrome, □,

Proc. Natl. Acad. Sci. USA 96, 3957-3962 (1999).

52. J. Ubach, J. Garcia, M. P. Nittler, T. C. Südhof and J. Rizo, □ Structure of the Janus-faced C₂B-domain of rabphilin □, *Nature Cell Biol.* 1, 106-112 (1999).

53. H. Kim, L. Esser, M. B. Hossain, D. Xia, C.-A. Yu, J. Rizo, D. Van der Helm and J. Deisenhofer, □ Structure of antimycin A1, a specific electron transfer inhibitor of ubiquitinol-cytochrome c oxidoreductase □, *J. Am. Chem. Soc.* 121, 4902-4903 (1999).

54. J. Hazzard, T. C. Südhof and J. Rizo, □ NMR analysis of the structure of synaptobrevin and of its interaction with syntaxin □, *J. Biomol. NMR* 14, 203-207 (1999).

55. I. Dulubova, S. Sugita, S. Hill, M. Hosaka, I. Fernandez, T. C. Südhof* and J. Rizo*, □ A conformational switch in syntaxin during exocytosis □, *EMBO J.* 18, 4372-4382 (1999).

56. M. A. Contreras, J. Ubach, O. Millet, J. Rizo* and M. Pons*, □ Lanthanide induced orientation of a calcium binding protein □, *J. Am. Chem. Soc.* 121, 8947-8948 (1999).

57. S. C. Koerber, J. Rizo, R. S. Struthers and J. E. Rivier, □ Consensus bioactive conformation of cyclic GnRH antagonists defined by NMR and molecular modeling □, *J. Med. Chem.* 43, 819-828 (2000).

58. T. Matos, J. Rizo and T. C. Südhof, “The relation of protein binding to function: what is the significance of munc18 and synaptotagmin binding to syntaxin 1, and where are the corresponding binding sites?”, *Eur. J. Cell Biol* 79, 377-382 (2000).

59. S. Pabst, J. Hazzard, W. Antonin, T. C. Südhof, R. Jahn, J. Rizo and D. Fasshauer, “Selective interaction of complexin with the neuronal SNARE complex: determination of the binding regions”, *J. Biol. Chem.* 275, 19808-19818 (2000).

60. R. Fernandez-Chacon, A. Königstorfer, S. H. Gerber, J. Garcia, M. F. Matos, C. F. Stevens, N. Brose, J. Rizo, C. Rosenmund and T. C. Südhof, “Synaptotagmin I functions as a Ca²⁺-regulator of release probability”, *Nature* 410, 41-49 (2001).

61. I. Dulubova, T. Yamaguchi, Y. Wang, T. C. Südhof and J. Rizo, “Vam3p structure reveals conserved and divergent properties of syntaxins”, *Nature Struct. Biol.* 8, 258-264 (2001).

62. S. H. Gerber, J. Garcia, J. Rizo and T. C. Südhof, “An unusual C₂-domain in the active-zone protein piccolo: implications for Ca²⁺-regulation of neurotransmitter release”, *EMBO J.* 20, 1605-1619 (2001).

63. J. Ubach, Y. Lao, I. Fernandez, D. Arac, T. C. Südhof and J. Rizo, “The C₂B-domain of synaptotagmin I is a Ca²⁺-binding module”, *Biochemistry* 40, 5854-5860 (2001).

64. Y. Wang, I. Dulubova, J. Rizo and T. C. Südhof, “Functional analysis of conserved structural elements in yeast syntaxin Vam3p”, *J. Biol. Chem.* 276, 28598-28605 (2001).

65. S. H. Gerber, J. Rizo and T. C. Südhof, “The top loops of the C₂-domains from synaptotagmin and phospholipase A2 control functional specificity”, *J. Biol. Chem.* 276, 32288-32292 (2001).

66. I. Fernandez, D. Arac, J. Ubach, S. H. Gerber, O. Shin, Y. Gao, R. G. W. Anderson, T. C. Südhof and J. Rizo, “Three-dimensional structure of the synaptotagmin I C₂B-domain: synaptotagmin I as a phospholipid binding machine”, *Neuron* 32, 1057-1069 (2001).

67. S. H. Gerber, J. Rizo and T. C. Südhof, “Role of electrostatic and hydrophobic interactions in Ca²⁺-dependent phospholipid binding by the C₂A-domain from synaptotagmin I”, *Diabetes* 51 Suppl 1, S12-18 (2002).

68. X. Chen, D. Tomchick, E. Kovrigin, D. Arac, M. Machius, T. C. Südhof and J. Rizo, “Three-dimensional structure of the complexin/SNARE complex”, *Neuron* 33, 397-409 (2002).
69. X. Luo, Z. Tang, J. Rizo* and H. Yu*, “The Mad2 spindle checkpoint protein undergoes similar major conformational changes upon binding to either Mad1 or Cdc20”, *Molecular Cell* 9, 59-71 (2002).
70. J. Rizo, J. Ubach and J. Garcia, “Ca²⁺-binding mode of the C₂A-domain of synaptotagmin”. In "Methods in Molecular Biology: Calcium-Binding Protein Protocols" (H. J. Vogel, Ed.), Humana Press, Totowa, NJ, pp. 305-316 (2002).
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72. O. Millet, P. Bernado, J. Garcia, J. Rizo* and M. Pons*, “NMR measurement of the off-rate from the first calcium-binding site of the synaptotagmin I C₂A-domain”, *FEBS Lett.* 516, 93-96 (2002).
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74. W. C. Wigley, M. J. Corboy, T. D. Cutler, P. H. Thibodeau, J. Oldan, M. G. Lee, J. Rizo, J. F. Hunt and P. J. Thomas, “Protein sequence that can encode native secondary structure by disfavoring alternate conformations”, *Nature Struct. Biol.* 9, 381-388 (2002).
75. J. Lu, J. Garcia, I. Dulubova, T. C. Südhof and J. Rizo, “Solution structure of the Vam7p PX domain”, *Biochemistry* 41, 5956-5962 (2002).
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