



**Ministerio de Economía y Competitividad**  
(Ministry of Economy and Competitiveness)



**Consejo Superior de Investigaciones Científicas**  
(Spanish Research Council)

# **Curriculum vitae**

F. Xavier Gomis-Rüth

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## PERSONAL DETAILS

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Name: **F. Xavier Gomis-Rüth**  
Citizenships: German and Spanish  
Private address: c/ Freixes, 4, 2<sup>on</sup> 2<sup>a</sup>  
08960 Sant Just Desvern  
Barcelona, Spain  
Mobile: (+34) 653 117 190  
Date & place of birth: December 4, 1964; Barcelona, Spain

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## CURRENT POSITION

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Organization: Consejo Superior de Investigaciones Científicas ([CSIC](#))  
(Spanish Research Council)  
Centre: Molecular Biology Institute of Barcelona ([IBMB](#))  
Department: Structural Biology Unit ([SBU](#))  
"María de Maeztu" Unit of Excellence  
Laboratory: Proteolysis Lab  
Position Held: Principal Investigator of the Proteolysis Lab  
Rank: Full Professor CSIC (tenured civil servant)  
Address: Edifici Hèlix; Parc Científic de Barcelona  
c/ Baldiri Reixac, 15-21  
08028 Barcelona  
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URL: <http://www.ibmb.csic.es/home/xgomis>  
UNESCO scientific registration: 2302, 230221, 2415 and 221104  
Lines of Research: Structural and functional biochemistry of proteolysis  
Structural and functional biochemistry of host-microbiome interactions

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## EDUCATION

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<b>B.Sc. in Chemical Sciences</b> Ramon-Llull University ( <a href="#">URL</a> ), Barcelona	11.4.1994
<b>Ph.D. (Dr. rer. nat.) in Protein Crystallography</b> Faculty of Chemistry and Pharmacy, Ludwig - Maximilian University, Munich, Germany (Accredited by the Spanish Ministry of Education and Science 14.10.1994)	21.7.1992
<b>M.Sc. in Organic Stereochemistry</b> Chemical Institute of Sarrià ( <a href="#">IQS</a> ), Barcelona	28.6.1989
<b>B.Sc. in Chemical Engineering</b> IQS, Barcelona	6.1988

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## CAREER HISTORY

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Director of SBU, IBMB.	since 3.11.2014
Vice-Director of IBMB	27.9.2010 – 17.7.2014
Tenured Full Professor ( <i>Profesor de Investigación</i> ), CSIC, SBU, IBMB.	since 21.7.2008
Director of DBE, IBMB.	2.2008 – 9.2010
Tenured Associate Professor ( <i>Investigador Científico</i> ), CSIC, SBU, IBMB.	25.11.2004 – 20.7.2008
Tenured Assistant Professor ( <i>Científico Titular</i> ), CSIC, SBU, IBMB.	1.9.2000 – 24.11.2004
Interim Assistant Professor ( <i>Científico Titular Interino</i> ), CSIC, SBU, IBMB.	22.12.1999 – 31.8.2000
Postdoctoral Researcher CSIC, SBU, IBMB (PI: M. Coll)	1.1997 – 12.1999
Postdoctoral Researcher,	4.1995 – 12.1996

Max-Planck Institute of Biochemistry ( <a href="#">MPIB</a> ), Munich, Germany (PIs: R. Huber [Nobel Prize for Chemistry 1988] and W. Bode).	
<b>Postdoctoral Researcher,</b> Institute of Fundamental Biology, Autonomous University of Barcelona ( <a href="#">UAB</a> )(PI: F.X. Avilés).	11.1992 – 03.1995
<b>Postdoctoral Researcher,</b> Dept. of Structural Analysis, MPIB, Munich, Germany (PIs: R. Huber and W. Bode).	8.1992 – 10.1992
<b>Graduate student,</b> Dept. of Structural Analysis, MPIB, Munich, Germany (PIs: R. Huber and W. Bode).	8.1989 – 7.1992

## PROMINENT PUBLICATIONS

(For complete list, please see Appendix)

### Summary (only accepted/published papers)

Total nº of peer-reviewed publications indexed by Web of Knowledge (1992 to present)	128
Nº of first author publications	28
Nº of publications as last author or correspondence author	74
Cumulative IF (Web of Knowledge; values of respective year, except of 2015 for 2016 and 2017)	805
Total nº of citations (according to Scholar Google) as of Mar 31, 2017 / since 2012 only	9,409 / 3,091
H-Index and i10-index (according to Scholar Google) as of Mar 31, 2017 (see <a href="http://scholar.google.com/citations?user=w-SQWtIAAAAJ">http://scholar.google.com/citations?user=w-SQWtIAAAAJ</a> )	49 / 104

- W. Bode, **F.X. Gomis-Rüth**, R. Huber, R. Zwilling & W. Stöcker (1992). Structure of astacin and implications for activation of astacins and zinc-ligation of collagenases. *Nature*, **358**, 164-167.
- **F.X. Gomis-Rüth**, L.F. Kress & W. Bode (1993). First structure of a snake venom metalloproteinase: a prototype for matrix metalloproteinases/collagenases. *EMBO J.*, **12**, 4151-4157.
- D. Zhang, I. Bothos, **F.X. Gomis-Rüth**, R. Doll, C. Blood, F.G. Njoroge, J.W. Fox, W. Bode & E.F. Meyer (1994). Structural interaction of natural and synthetic inhibitors with the venom metalloproteinase, atrolysin C (form d). *Proc. Natl. Acad. Sci. USA*, **91**, 8447-8451.
- **F. X. Gomis-Rüth**, M. Gómez, W. Bode, R. Huber & F. X. Avilés (1995). The three-dimensional structure of the native ternary complex of bovine pancreatic procarboxypeptidase A with proproteinase E and chymotrypsinogen C. *EMBO J.*, **14**, 4387-4394.
- **F.X. Gomis-Rüth**, K. Maskos, M. Betz, A. Bergner, R. Huber, K. Suzuki, N. Yoshida, H. Nagase, K. Brew, G.P. Bourenkov, H. Bartunik & W. Bode (1997). Mechanism of inhibition of the human matrix metalloproteinase stromelysin-1 by TIMP-1. *Nature*, **389**, 77-81.
- F.J. Medrano, J. Alonso, J.L. García, A. Romero, W. Bode & **F.X. Gomis-Rüth** (1998). Structure of proline iminopeptidase from *Xanthomonas campestris* pv. *citri*: a prototype for the prolyl oligopeptidase family. *EMBO J.*, **17**, 1-9.
- **F.X. Gomis-Rüth**, M. Solà, P. Acebo, A. Párraga, A. Guasch, R. Eritja, A. González, M. Espinosa, G. del Solar & M. Coll (1998). The structure of plasmid-encoded transcriptional repressor CopG, unliganded and bound to its operator. *EMBO J.*, **17**, 7404-7415.
- **F.X. Gomis-Rüth**, V. Companys, Y. Qian, L.D. Fricker, J. Vendrell, F.X. Avilés & M. Coll (1999). Crystal structure of avian carboxypeptidase D domain II: a prototype for the regulatory metallocarboxypeptidase family. *EMBO J.*, **18**, 5817-5826.
- **F.X. Gomis-Rüth**, G. Moncalián, R. Pérez-Luque, A. González, E. Cabezón, F. de la Cruz & M. Coll (2001). Structure of a membrane DNA transfer protein essential for bacterial conjugation. *Nature*, **409**, 637-641.
- Guasch, M. Lucas, M. Cabezas, R. Pérez-Luque, **F.X. Gomis-Rüth**, F. de la Cruz & M. Coll (2003). Recognition and processing of the origin of transfer DNA by conjugative relaxase TrwC. *Nat. Struct. Biol.*, **10**, 1002-1010.
- Pallarés, R. Bonet, R. García-Castellanos, S. Ventura, F.X. Avilés, J. Vendrell & **F.X. Gomis-Rüth** (2005). Structure of human carboxypeptidase A4 with its endogenous protein inhibitor, latexin. *Proc. Natl. Acad. Sci. USA*, **102**, 3978-3983.
- **F. X. Gomis-Rüth** & M. Coll (2006). Cut and move: Protein machinery for DNA processing in bacterial conjugation. *Curr. Op. Struct. Biol.*, **16**, 744-752.
- L. Sanglas, Z. Valnickova, J.L. Arolas, I. Pallarés, T. Guevara, M. Solà, T. Kristensen, J.J. Enghild, F.X. Avilés & **F.X. Gomis-Rüth** (2008). Structure of activated thrombin-activatable fibrinolysis inhibitor, a molecular link between coagulation and fibrinolysis. *Mol. Cell*, **31**, 598-606.
- **F.X. Gomis-Rüth** (2008). Structure and function of metallocarboxypeptidases. *Crit. Rev. Biochem. Mol. Biol.*, **43**, 319-345.
- L. Sanglas, F.X. Avilés, R. Huber, **F.X. Gomis-Rüth** & J.L. Arolas (2009). Mammalian metallopeptidase inhibition at the defense barrier of *Ascaris* parasite. *Proc. Natl. Acad. Sci. USA*, **106**, 1743-1747.
- H. Wójtowicz, T. Guevara, C. Tallant, M. Olczak, A. Sroka, J. Potempa, M. Solà, T. Olczak & **F. X. Gomis-Rüth** (2009). Unique structure and stability of HmuY, a novel heme-binding protein of *Porphyromonas gingivalis*. *PLoS Pathog.*, **5**, e1000419.
- D.R. Boer, J.A. Ruíz-Masó, J.R. López-Blanco, A.G. Blanco, M. Vives-Llacer, P. Chacón, I. Usón, **F. X. Gomis-Rüth**, M. Espinosa, O. Llorca, G. del Solar & M. Coll (2009). Plasmid replication initiator RepB forms a hexamer reminiscent of ring helicases and has mobile nuclelease domains. *EMBO J.*, **28**, 1666-1678.
- A.M. Houghton, W.O. Hartzell, C.S. Robbins, **F.X. Gomis-Rüth** & S.D. Shapiro (2009). Macrophage elastase (MMP-12) kills bacteria within murine macrophages. *Nature*, **460**, 637-641.
- T. Goulas, J.L. Arolas & **F.X. Gomis-Rüth** (2011). Structure, function and latency regulation of a bacterial enterotoxin potentially derived from a mammalian adamalysin/ADAM xenolog. *Proc. Natl. Acad. Sci. USA*, **108**, 1856-1861.

- J.L. Arolas, T.O. Botelho, A. Vilcinskas & **F.X. Gomis-Rüth** (2011). Structural evidence for standard-mechanism inhibition in metallopeptidases from a complex poised to re-synthesize a peptide bond. *Angew. Chem. Int. Ed.*, **50**, 10357-10360.
- A. Marrero, S. Duquerroy, S. Trapani, T. Goulas, T. Guevara, G.R. Andersen, J. Navaza, L. Sottrup-Jensen & **F.X. Gomis-Rüth** (2012). The crystal structure of human  $\alpha_2$ -macroglobulin reveals a unique molecular cage. *Angew. Chem. Int. Ed.*, **51**, 3340-3344 (chosen by the journal as a *Very Important Paper* and for the issue cover; comment in C. Meyer, W. Hinrichs & U. Hahn, Human  $\alpha_2$ -macroglobulin—another variation on the venus flytrap, *Angew. Chem. Int. Ed.*, **51**, 5045-5047).
- J.L. Arolas, C. Broder, T. Jefferson, T. Guevara, E.E. Sterchi, W. Bode, W. Stöcker, C. Becker-Pauly & **F.X. Gomis-Rüth** (2012). Structural basis for the sheddase function of human meprin  $\beta$  metalloproteinase at the plasma membrane. *Proc. Natl. Acad. Sci. USA*, **109**, 16131-16136.
- M. López-Pelegrín, N. Cerdà-Costa, A. Cintas-Pedrola, F. Herranz-Trillo, P. Bernadó, J.R. Peinado, J.L. Arolas & **F.X. Gomis-Rüth** (2014). Multiple stable conformations account for reversible concentration-dependent oligomerization and autoinhibition of a metamorphic metallopeptidase. *Angew. Chem. Int. Ed.*, **53**, 10624-10630 (chosen for the frontispiece of the section on communications).
- P.F. Huesgen, P.F. Lange, L.D. Rogers, N. Solis, U. Eckhard, O. Kleifeld, T. Goulas, **F.X. Gomis-Rüth** & C.M. Overall (2015). LysargiNase mirrors trypsin for identification of protein C-termini and methylation sites. *Nat. Meth.*, **12**, 55-58.
- I. García-Ferrer, P. Aréde, J. Gómez-Blanco, D. Luque, S. Duquerroy, J.R. Castón, T. Goulas & **F.X. Gomis-Rüth** (2015). Structural and functional insights into *Escherichia coli*  $\alpha_2$ -macroglobulin endopeptidase snap-trap inhibition. *Proc. Natl. Acad. Sci. USA*, **112**, 8290-8295 (highlighted by the Spanish Biophysical Society as one of four Papers of the Month by SBE Members in July; Biofísica Magazine, issue #2, May-August 2015, <http://www.sbe.es/ph2015-07.asp>; selected by the Spanish Society of Biochemistry and Molecular Biology as The Article of the Month, January 2016, <http://www.sebbm.es/web/en/science-for-society/article-of-the-month>).

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## CURRENT FUNDING

(See Appendix for expired grants)

- Program “Centers of Excellence” from the Ministry of Economy and Competitiveness. Appointment of the Department of Structural Biology of IBMB as a “**María de Maeztu Unit of Excellence**”. Ref.: MDM-2014-0435. Total funding awarded (incl. indirect costs): €2,000,000. Role: co-PI (out of just 7 PIs). 1.7.2015 - 30.6.2019.
- **R&D project**, State Plan, section Molecular and Cellular Biology, Ministry of Economy and Competitiveness. “Biochemistry of proteolysis: function, regulation and structure of peptidases of biomedical relevance and their inhibitors”. Ref.: BFU2015-64487-R. Total awarded (direct costs): €340,000. Role: PI. 1.1.2016-31.12.2019.

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## R&D CONTRACTS AND RELATIONSHIP WITH COMPANIES

- Title of contract/project: Biological localization and function of genes or proteins related to pathologies of diagnostic interest. Infociencia, S.L. (Grupo Pharmaquest), Barcelona. 2005. Investigators in charge: José Manuel Mas (Infociencia) / F. Xavier Gomis-Rüth (CSIC). Project total: €15,000.
- Title of contract/project: Crystallization of lysozyme complexed with a *Treponema pallidum* antigen. BIOKIT, S.A., Lliça de Munt (Barcelona). 2004. Investigators in charge: Xavier Berthet and Pau Bruguera (BIOKIT) / F. Xavier Gomis-Rüth (CSIC). Project total: €6,000.
- **Member of the Scientific Advisory Board of Anaxomics**, a biotech company committed to the discovery and development of drugs to improve human health (<http://www.anaxomics.es/about-us/the-team/>).
- Title of contract/project: Laboratory Management Agreement. CLASADO BIOSCIENCES LTD., UK. 2016-2017. Investigators in charge: George Tzortzis (CLASADO) / T. Goulas and F. Xavier Gomis-Rüth (CSIC). Project total: €63,000.

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## ACADEMIC ACTIVITY

### Teaching

- **Participation** in the Macromolecular Crystallography Schools MCS2016 and MCS2017, Institute of Physical Chemistry "Rocasolano", Madrid.
- **External examiner**, Doctoral Thesis by Marcin Wegrecki, Technical University of València (Spain), 2015.
- **Co-organizer** of the Macromolecular Crystallography Schools MCS2010, MCS2011, MCS2012, MCS2013, MCS2014, and MCS2015, Institute of Physical Chemistry "Rocasolano", Madrid.
- **External examiner**, Doctoral Thesis by R. Rathi Suganya, SRM University (Kattankulathur, India), 2014.
- **Workshop** “Structural insights into metallopeptidases and their protein inhibitors”, within the Biochemistry degree’s Design and Evaluation of Bioactive Molecules course. Organized by E. Estébanez-Perpiñá, UB, 22.10.2013.
- **External examiner**, Doctoral Thesis by Emilie Poudevigne, University of Grenoble (France), 2013.
- **External examiner**, Doctoral Thesis by Claudia Broder, University of Kiel (Germany), 2013.

- **External examiner (Externer Gutachter)**, Doctoral Thesis by Michael Schöpfel, University of Halle-Wittenberg (Germany), 2013.
- **External examiner**, Doctoral Thesis by Roopa Kothapalli, National University of Singapore (Singapore), 2013.
- **External examiner (Koreferent)**, Doctoral Thesis by Ulrich Eckhard, University of Salzburg (Austria), 2011.
- **External examiner**, Doctoral Thesis by Nan Li, University of Sydney (Australia), 2011.
- **Lecturer**, School of Macromolecule Crystallography MCS2011, part of the Master in Crystallography and Crystallization, Menéndez-Pelayo International University ([UIMP](#)), 2010-2011 (6 ECTS credits).
- **Lecturer**, Practicals in Macromolecule Crystallography, part of the Master in Crystallography and Crystallization, UIMP, 2010-2011 (10 ECTS credits).
- **External examiner (Koreferent)**, Doctoral Thesis by Sandro Waltersperger, University of Bern (Switzerland), 2010.
- **External examiner (Koreferent)**, Doctoral Thesis by Renato Baumgartner, University of Bern (Switzerland), 2010.
- **Workshop "Protein Crystallography"**, part of the 4th year Human Biology degree's Structural Biology course. Organized by B. Oliva, University Pompeu Fabra ([UPF](#)), 27.5.2010.
- **Lecturer**, School of Macromolecule Crystallography MCS2010, part of the Master in Crystallography and Crystallization, UIMP, 2009-2010 (6 ECTS credits).
- **Lecturer**, Practicals in Macromolecule Crystallography, part of the Master in Crystallography and Crystallization, UIMP, 2009-2010 (10 ECTS credits).
- **External examiner (Koreferent)**, Doctoral Thesis by Marina Vostrukhina, University of Bern (Switzerland), 2009.
- **External examiner**, Master in Bioinformatics by Iñaki Martínez de Ilarduya Muñoz. UPF, 2008.
- **External examiner (Koreferent)**, Doctoral Thesis by Patrick Schütz, University of Bern (Switzerland), 2008.
- **External examiner**, Doctoral Thesis by Claus Gyryp Nielsen, University of Aarhus (Denmark), 2007.
- **Workshop "Protein Crystallography"** part of the 4th year Human Biology degree's Structural Biology course. Organized by B. Oliva, UPF, 20.4.2007.
- **Workshop "Protein Crystallography"**, part of the "Principles of Protein Structure" Unit (sub-coordinator B. Oliva), "Master in Bioinformatics for Health Sciences" (BIOINFO; coordinator: J. Villà), UPF, 17.1.2007.
- **External examiner (Koreferent)**, Doctoral Thesis by Christoph Bienossek, University of Bern (Switzerland), 2006.
- **Inter-University Doctoral Programme "Structure and Function of Proteins"**. Course title: "Techniques in the Structural Characterisation of Proteins", Organized by J.A. Hermoso/M. Bruix, Institute of Physical Chemistry "Rocasolano", Madrid, 2.2.2006.
- **External examiner (Koreferent)**, Doctoral Thesis by Santina Russo, University of Bern (Switzerland), 2005.
- **PhD Course "Methods in Molecular Biology"**, part of the International Doctoral Programme in Health and Life Sciences. Organized by E. Hidalgo, UPF, 24.1.2005.
- **Workshop "Protein Crystallography"**, part of Unit H33: "Principles of Protein Structure" (sub-coordinator B. Oliva), "Master in Bioinformatics for Health Sciences" (coordinator: J. Villà), UPF. Academic course 2004/2005, 2.12.2004.
- **PhD Course** in experimental biology and biomedicine "Advanced course on structural biology". Organized by S. Macedo Ribeiro, University of Coimbra, Coimbra (Portugal), 4-8.10.2004.
- **Workshop "Protein Crystallography"**, part of the 4th year Human Biology degree's Structural Biology course. Organized by B. Oliva, UPF, 12.5.2004.
- **PhD Course "Structure of Biomolecules"**. Organized by M. Pons/E. Giralt, Dept. of Organic Chemistry, University of Barcelona ([UB](#)), 24-25.2.2004.
- **PhD Course "Methods in Molecular Biology"**, part of the International Doctoral Programme in Health and Life Sciences. Organized by E. Hidalgo, UPF, 23.1.2004.
- **Workshop "Principles of Protein Crystallography"**, part of the 3rd/4th year Chemistry and 3rd year Biochemistry degrees' "Protein Chemistry and Engineering". Organized by F. Xavier Avilés, UAB, 9.12.2003.
- **PhD Course "Crystallography of Macromolecules"**. Organized by M. Pons, Department of Organic Chemistry, UB, 6-9.5.2003.
- **Workshop "Principles of Protein Crystallography"**, part of the 4th year Human Biology degree's "Structural Biology" course. Organized by B. Oliva, UPF, Barcelona, 26.4.2002 and 28.4.2003.
- **PhD Course "Spectroscopic Techniques in Biology and Medicine"**. Organized by J. Vendrell, Dept. of Biochemistry and Molecular Biology, UAB, 14.3.2002.
- **PhD Course "Molecular Biology in Prokaryotes – 1"**. Organized by M. Espinosa and A. Tormo, Complutense University of Madrid, 21.5. - 1.6.2001.
- **PhD Course "Protein Structure"**. Organized by F. de la Cruz, Faculty of Medicine, University of Cantabria, Santander, 15-19.6.1998.
- **Lecturer**, Practicals in Inorganic Chemistry, part of undergraduate studies in Chemical Engineering, IQS, 1988-1989 (whole semester).

## Master/DEA Supervision

- **Irene Garcia Ferrer**. "Biophysical and biochemical characterization of synmetzin, a *de novo* designed minimal protease". UB, 9.9.2011.
- **Mar López Pelegrín**. "Production and crystallization of putative metalloproteases from hyperthermophilic archaea". UB, 22.7.2011.
- **Sergio Trillo Muyo**. "Cloning, overexpression, purification and crystallization of a human archaemetzincin: AMZ-2". UAB, 22.5.2008.
- **Tiago Oliveira Botelho**. "Functional and structural studies on the HmrA protein from *Staphylococcus aureus*". UB, 8.10.2007.
- **Sònia García Piqué**. "*Clostridium histolyticum* collagenases: 78-kDa collagenase type I". UB, 9.10.2006.
- **Cynthia Tallant Blanco**. "Expression, purification and characterization of metalloproteases of *Bacillus anthracis*". UB, 9.10.2006.

- **Anna Cintas Pedrola.** "Cloning, overexpression and purification of a BlaR1-like protease from *Methanococcus jannaschi*: Q58610". UB, 24.7.2006.
- **Aniebrys Marrero Nodarse.** "Cloning and overexpression of the regulator/transducer proteins BlaR1 and MecR1, and their PBD and trans-membrane regions". UB, 8.10.2003.
- **Raquel García Castellanos.** "Preparation and crystallization of *Aquifex aeolicus* RecG helicase". UB, 16.7.2002.
- **Goretti Mallorquí Fernández.** "Determination of the three-dimensional structure of the eosinophil cationic protein. Functional Implications". University of Girona, 14.7.2000 (co-supervisor).
- **Mariola Gómez Ortiz.** "Crystallization of the ternary complex of bovine procarboxypeptidase A and *Termus aquaticus* carboxypeptidase". UAB, 09.1994 (co-supervisor).

### Ph.D. Thesis Supervision

- Since 5.2017: **Soraia Inês dos Reis Mendes**.
- Since 1.2016: **Laura del Amo Maestro**.
- Since 2.2014: **Laura Mariño Puertas**.
- **Irene Garcia Ferrer.** "Structural and functional studies on *Escherichia coli*  $\alpha_2$ -macroglobulin: a snap-trap peptidase inhibitor", UB, 1.12.2015 (co-supervisor).
- **Mar López Pelegrín.** "Mechanisms of proteolytic activity regulation exerted via a unique propeptide in matrix metalloproteinases and intra/intermolecular interactions in a novel family of minimal gluzincins", UB, 13.11.2015 (co-supervisor).
- **Sergio Trillo Muyo.** "Functional and structural study of a single-domain double-faced protein inhibitor, sermetstatin, in complex with two peptidases from distinct classes, subtilisin and snapalysin", UAB, 31.5.2013 (co-supervisor).
- **Tiago Oliveira Botelho.** "Structural and functional studies on HmrA", UB, 4.3.2011.
- **Anna Cintas Pedrola.** "Characterization of *Methanococcus jannaschii* MJ1213, a hyperthermophilic metalloprotease potentially similar to *Staphylococcus aureus* BlaR1", UB, 2.11.2010 (co-supervisor).
- **Cynthia Tallant Blanco.** "Structural and functional analysis of ulilysin, the prototype of the catalytic domain of the human IGFBP protease PAPP-A", UB, 28.6.2010.
- **Aniebrys Marrero Nodarse.** "Molecular study of the sensor/transducer protein MecR1 involved in bacterial resistance to  $\beta$ -lactam antibiotics", UB, 19.6.2007.
- **Raquel García Castellanos.** "Structural and functional study of the transcriptional regulator of methicillin resistance in *Staphylococcus aureus*, MecI", UB, 18.4.2006 (XII UB Faculty Award).
- **Goretti Mallorquí Fernández.** "Structural characterization of human ribonucleases", University of Girona, 22.5.2003 (co-supervisor).
- **Marta Costa Estrader.** "Expression and purification of signal-transduction proteins. Structure of CopG-DNA22 and GST-C47A", UB, 26.2.2001 (co-supervisor).
- **Mariola Gómez Ortiz.** "Crystallographic analysis bovine pancreatic carboxypeptidase-A complexed with zinc, PCI and protease zymogens", UAB, 13.1.1997 (co-supervisor).

### Ad hoc Ph.D. Thesis Examination Panels

- Arka Chakraborti, UB, 8.7.2016.
- Raquel Sanz Soler, University of València ([UV](#); Spain), 21.6.2016.
- Iñaki Martínez de Iiarduya Muñoz, UB, 23.6.2015.
- Massimo Sammito, UB, 22.6.2015.
- Jordi Durban Sánchez, UV, 6.3.2015.
- Pablo Fernández Millán, UB, 4.7.2014.
- Laia Vives Adrián, UB, 4.4.2014.
- Geovanny Rivera Hernández, UAB, 28.2.2014.
- Dayté Dayana Rodríguez Martínez, University Ramon Llull (Barcelona; Spain), 17.12.2013.
- Mariana Castillo Briceño, Autonomous University of Madrid ([UAM](#); Spain), 8.11.2013.
- Emilie Poudevigne, University of Grenoble (France), 24.9.2013.
- Erick Adolfo Hernández Carvajal, UB, 18.9.2013.
- Michael Schöpfel, University of Halle/Wittenberg (Germany), 18.3.2013.
- Fabiola Rodríguez Calviño, Complutense University of Madrid ([UCM](#)), 27.6.2012.
- Núria Cerdà Costa, UAB, 16.12.2008.
- Claus Gyurup Nielsen, Aarhus University (Denmark), 21.6.2007.
- María Teresa Villanueva de la Torre, UAB, 26.1.2006.
- María Llamazares Prada, University of Oviedo (Spain), 7.9.2005.
- Àlex Bayés Puig, UAB, 20.7.2005.
- María Iluminada Fernández López-Lucendo, UCM, 15.6.2005.
- Marta Garrido Franco, UAB, 28.5.2002.
- Eva Estébanez Perpiñá, UAB, 28.5.2002.
- Carlos Fernández Tornero, UAM, 23.5.2002.
- Patrick Aloy Calaf, UAB, 15.12.2000.

- Marc Antoni Martí Renom, UAB, 21.1.1999.
- Alba Guarné Cabello, UB, 14.1.1999.
- David Reverter Cendrós, UAB, 24.4.1998.

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## PROMINENT CONGRESSES, INVITED CONFERENCES, TALKS AND COURSES

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**Since 2007** (For complete list and selected conferences prior to 2007, please see Appendix)

- **XVth International Symposium on Proteinases, Inhibitors and Biological Control**, Portorož (Slovenia). Attendance and invited lecture: F.X.Gomis-Rüth: “Endopeptidase inhibition by  $\alpha_2$ -macroglobulins: Venus-flytrap or snap-trap mechanisms”. 17.09.2016 - 21.09.2016.
- **5<sup>th</sup> International Biophysics Congress**, Oporto (Portugal). Attendance and Manuel Rico/Bruker Award Lecture: F.X.Gomis-Rüth: “Molecular mechanisms of broad-spectrum endopeptidase inhibition by  $\alpha_2$ -macroglobulins”. 15.06.2016-17.06.2016.
- **29<sup>th</sup> Annual Symposium of the Protein Society**, Barcelona (Spain). Chair of the session Current Morning Symposia 1 “Enzyme and Pathway Engineering”. 22.07.2015 – 25.07.2015.
- **Gordon Research Conference** on Proteolytic Enzymes and their Inhibitors, XVIII, Il Ciocco, Lucca (Barga; Italy). Attendance and invited talk: F.X.Gomis-Rüth: “Reversible concentration-dependent oligomerisation regulates activity in a minimal metallopeptidase”. 22.06.2014 - 27.06.2014.
- **XIII Congress of the Spanish Biophysical Society**, València (Spain). Plenary Lecture of the Congress: F.X.Gomis-Rüth: “Structural insights into the Venus flytrap inhibitory mechanism of a 0,7MDa multimeric proteinase inhibitor”. 19.06.2013-21.06.2013.
- **FASEB Science Research Conference** on Proteases in Hemostasis and Vascular Biology, Sheraton Resort, Nassau (The Bahamas). Attendance and invited talk: F.X.Gomis-Rüth: “Structural studies of human  $\alpha_2$ -macroglobulin, a pan-protease inhibitor from blood”. 02.06.2013 – 07.06.2013.
- **Gordon Research Conference** on Matrix Metalloproteinases, XI, Il Ciocco, Lucca (Barga; Italy). Attendance, session chairman and invited talk: F.X.Gomis-Rüth: “Structure of  $\alpha_2$ -macroglobulin, a Venus flytrap pan-protease inhibitor”. 19.05.2013 - 24.05.2013.
- **Gordon Research Conference** on Proteolytic Enzymes and their Inhibitors, XVII, Il Ciocco, Lucca (Barga; Italy). Attendance, poster presentation and two invited talks: F.X.Gomis-Rüth: “Insight into a molecular Venus flytrap: the structure of human methylamine-treated  $\alpha_2$ -macroglobulin”; and T. Jefferson, J.L. Arolas, T. Goulas, J. Bien, M. Caušević, U. auf dem Keller, O. Schilling, J.S. Bond, W. Bode, W. Stöcker, C.M. Overall, C.U. Pietrzik, T. Guevara, F.X. Gomis-Rüth & C. Becker-Pauly: “Structure and function of dimeric transmembrane meprin  $\beta$ : a sheddase of APP with possible functions in neurodegenerative disorders”. Poster presentation (#73): J.L. Arolas, S. Trillo-Muyo, T.O. Botelho, A. Vilcinskas & F.X. Gomis-Rüth: “The structure of insect metalloproteinase inhibitor in complex with thermolysin reveals standard-mechanism inhibition in metallopeptidase”. 17.06.2012 – 22.06.2012.
- **Invited Talk**: “Molecular evolution in metallopeptidases and their inhibitors”. Biochemical Institute (Sonderforschungsbereich 877), Christian-Albrechts University of Kiel, Kiel (Germany). 22.11.2011.
- **XXII Congress and General Assembly of the International Union of Crystallography**, Madrid (Spain). Attendance and co-chairman of the micro-symposium “Dissecting enzyme mechanisms”. 22.08.2011 - 30.08.2011.
- **Gordon Research Conference** on Matrix Metalloproteinases, X, Bryant University, Smithfield, Rhode Island (USA). Attendance, session chairman, and invited talk: F.X.Gomis-Rüth: “Recent advances in the structural characterization of metallopeptidases”. 07.08.2011 - 12.08.2011.
- **Invited Talk**: “Recent advances in the structural analysis of metallopeptidases”. Joint symposium focused on molecular and cellular structural biology and bioinformatics, Johannes-Gutenberg-University of Mainz, (Germany). 08.11.2010.
- **Gordon Research Conference** on Proteolytic Enzymes and their Inhibitors, XVI, Il Ciocco, Lucca (Barga) (Italy). Attendance, session co-chairman and invited talk: F.X.Gomis-Rüth: “Structural Insights into biomedically relevant metallocarboxypeptidases”. 02.05.2010 - 07.05.2010.
- **XXXII SEBBM Congress**, Oviedo, Spain. Attendance, session co-chairman and invited talk at the Symposium 3.1: F.X.Gomis-Rüth: “Biomedically relevant metallocarboxypeptidases: a structural viewpoint”. 23.09.2009-26.09.2009.
- **Gordon Research Conference** on Matrix Metalloproteinases, IX, Les Diablerets (Switzerland). Attendance and poster presentation: M. Gómez-Chiarri, D. Preston, S. Salger, C.F. Vaughn & F.X. Gomis-Rüth: “Genomic and functional characterization of an oyster MMP” and plenary talk: “Recent advances into metallocarboxypeptidase structures”. 30.08.2009-04.09.2009.
- **Gordon Research Conference** on Proteolytic Enzymes and their Inhibitors, XV, Colby-Sawyer-College, New London, New Hampshire (USA). Attendance and (co)presentation of 2 posters: N. Mallorquí-Fernández, S.P. Manandhar, G. Mallorquí-Fernández, I. Usón, M. Solà, J. Potempa & F.X. Gomis-Rüth: “A novel activation mechanism for cysteine proteases revealed by structural analyses of *P. intermedia* interpain A” (poster #24); and M. Solà, G. Niemirowicz, D. Fernández, J.J. Cazzulo, F.X. Avilés & F.X. Gomis-Rüth. “The molecular analysis of *Trypanosoma cruzi* metallocarboxypeptidase 1 (TcMCP-1) provides insight into fold and substrate specificity” (poster #74). 06.07.2008 -11.07.2008.
- **5<sup>th</sup> General Meeting of the International Proteolysis Society**, Patras (Greece). Attendance and session co-chairman: “Insights into Protease Specificity, Mechanisms and Regulation”. 20.10.2007 - 24.10.2007.
- **Gordon Research Conference** on Matrix Metalloproteinases, VIII, Il Ciocco, Lucca (Barga) (Italy). Attendance, session chairman and invited talk (in substitution of Wolfram Bode): F.X.Gomis-Rüth: “Metzincin structures: past, present and future”. 03.06.2007 - 08.06.2007.

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## PATENTS

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- Cerdà-Costa N., López-Pelegrín M., Cintas-Pedrola A., López-Arolas J., **Gomis-Rüth F.X.** "Novel proteolytic enzyme for specific cleavage and use thereof", European Patent Application No. EP13382350.0. Submission number 300102450, reference P26977EP00. Date of receipt: September 10, 2013.
- Coma M., Aloy P., Pujol A., **Gomis X.**, Oliva B., Lleó A., Mas J.M. "New combination therapies for treating neurological disorders", U.S. Patent Application No. 13/660,205. Filing date: October 25, 2012. PCT/US12/61908.

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## OTHER ACTIVITIES AND MERITS

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- **Editorial Board Member** (reviewer), *Journal of Biological Chemistry* (1.7.2005 - 30.9.2010 and 1.7.2012 - 30.9.2017).
- **Editorial Board Member** (peer-review supervisor and final decider, category Molecular Biology), *Scientific Reports* (since 20.9.2016).
- **Member of Referee Panel**, *Acta Crystallographica section F* (2009 - 2010).
- **Roche Diagnostics Prize** (<36-y career award) of the **Spanish Society for Biochemistry and Molecular Biology**, 1999.
- **Manuel Rico / Bruker Prize** (career award) of the **Spanish Biophysical Society**, 2016.
- **Nominated** by the Spanish Society for Biophysics for the **EBSA 2000 Biophysical Award** for young European scientists.
- **Member of Societies:**  
Gesellschaft Deutscher Chemiker (GDCh)  
American Society for Biochemistry and Molecular Biology (ASBMB)  
Federation of European Biochemical Societies (FEBS)  
International Union of Biochemistry and Molecular Biology (IUBMB)  
Federation of American Societies for Experimental Biology (FASEB)  
Catalan Biological Society (SCB)  
Spanish Biophysical Society (SBE)  
Spanish Society for Biochemistry and Molecular Biology (SEBBM)
- **Participation in Collaborative Networks:**  
RIBERMOV ([www.ribermov.org](http://www.ribermov.org)). A multidisciplinary consortium of more than 65 scientists from Spain, Argentina, Brazil, Chile, Ecuador, Peru and Portugal to study neurodegeneration in Parkinson's disease and spinocerebellar ataxias (since 2010-2014).  
NEURODEGENET ([www.neurodeg.net/NEURODEGENET/Welcome.html](http://www.neurodeg.net/NEURODEGENET/Welcome.html)). A multidisciplinary consortium to study neuro-degeneration in humans (2009-2014).  
CONSOLIDER NETWORK from the Ministry of Economy and Competitiveness entitled "Network of Crystallography and Crystallization - The Crystallization Factory." Ref: FIS2015-71928-REDC (2016-2017).  
STRATEGIC NETWORK OF EXCELLENCE from the Ministry of Economy, Innovation and Competitiveness entitled "Severo Ochoa and María de Maeztu Alliance: Spanish Centers and Units of Excellence." Ref: BFU2016-81721-REDE (2017-2018).
- **Ad hoc Referee for Scientific Publications:** *Acta Crystallographica section D* and *section F*, *Angewandte Chemie Int. Ed.*, *Applied and Environmental Microbiology*, *Biochemistry*, *Biological Chemistry*, *Biochimie*, *Biochimica et Biophysica Acta*, *Biologia*, *Blood*, *BMC Bioinformatics*, *BMC Infectious Diseases*, *Cell Reports*, *Cellular and Molecular Life Sciences*, *ChemBioChem*, *EMBO Journal*, *European Journal of Biochemistry*, *European Journal of Medicinal Chemistry*, *FEBS Journal*, *FEBS Letters*, *FEBS Open Bio*, *FEMS Microbiology Reviews*, *Inorganic Chemistry*, *Journal of Bacteriology*, *The Journal of Biochemistry*, *Journal of Biological Chemistry*, *Journal of Biological Inorganic Chemistry*, *Journal of Clinical Microbiology*, *Journal of Computer-Aided Molecular Design*, *Journal of Molecular Biology*, *Journal of Proteome Research*, *Journal of Proteome*, *Journal of Structural Biology*, *Journal of Thrombosis and Haemostasis*, *Metallomics*, *Molecular Microbiology*, *Nature Communications*, *Nature Medicine*, *Nature Reviews in Molecular and Cell Biology*, *Nucleic Acids Research*, *Plasmid*, *PLoS Biology*, *PLoS ONE*, *PLoS Pathogens*, *Proceedings of the National Academy of Sciences USA*, *Protein & Peptide Letters*, *Protein Expression and Purification*, *Protein Science*, *Proteomics Clinical Applications*, *Science Immunology*, *Scientific Reports*, *Structure*, *Trends in Pharmacological Sciences*, *Wiley Encyclopedia of Industrial Biotechnology* (book chapter) and Springer Basel AG (book).
- **Ad hoc Assessor of Promotions to Associate and Full Professorships** for US, EU, and Australian universities and institutions.
- **Ad hoc Referee for Research Projects and Scientific Candidatures:**  
German Research Foundation (DFG)  
The Wellcome Trust (Intermediate Wellcome Research Fellowships and Research Projects; Great Britain)  
Biomedical and Therapeutic Research Committee (Scotland)  
Scottish Association for International Cancer Research  
The Royal Society, Great Britain  
Austrian Science Fund (FWF)  
Israel Science Foundation  
Research Foundation - Flanders (Fonds Wetenschappelijk Onderzoek - Vlaanderen, FWO)  
Netherlands Organisation for Scientific Research (Council of Chemical Studies)  
European Science Foundation  
National Health and Medical Research Council, Australian Government

National Biotechnological Programme (BIO) and National Molecular Biological and Cellular Programme (BMC) of Spanish Ministries, to which scientific research has been assigned, and for the National Agency for Evaluation and Foresight (as referee, member of evaluation panel, and member of the commission, both for research grants and "Ramón y Cajal" researcher positions)  
EXPLORA Programme, Spanish Ministry of Economy and Competitiveness (Spain)  
Subdirectorate-General of Health Research, Ministry of Health (FIS projects, Spain)  
Ikerbasque (The Basque Foundation for Science; Basque Country)  
Evaluation Agency of Andalusia (Spain)

- **Coorganizer of the VIth Joint Seminar of the Catalan Society of Biology**, Sitges (Spain). June 1998.
- Member (president, vocal or supply) of several **Boards of Examiners for Civil Service Examinations** of Advanced Specialist Technician, Assistant Professor and Associate Professor positions within C.S.I.C..
- **Member of the Selection Panel for the José Tormo Award**, Structural Biology section (2005).
- **Five quinquenios** (five-year reviews of teaching and dissemination) and **four sexenios** (six-year reviews of scientific performance) **approved** (all of those applied for).
- **3 entries in the Electron Microscopy Database** (EMD; [www.emdatabank.org](http://www.emdatabank.org)), access codes: 3016, 3017 and 3018.
- **122 entries in the Protein Data Bank** (PDB; [www.pdb.org](http://www.pdb.org)), access codes:  
1pyt, 1ast, 1atl, 1iaa, 1iab, 1iac, 1iae, 1iag, 1nba, 1iaf, 1pex, 1kbc, 1rtg, 2aig, 3aig, 4aig, 1uea, 1azw, 1jae, 1tmq, 1rnf, 2rnf, 2cpq,  
1b01, 1b00, 1qmu, 1dyt, 1e9r, 1e9s, 1ea4, 1e21, 1h8l, 1gki, 1gl6, 1gl7, 1jvw, 1gvl, 1gxq, 1kwm, 1h2c, 1h2d, 1omh, 1osb,  
1nq6, 1htd, 1h5w, 1okr, 1qx0, 1sax, 2bo9, 2boa, 1s6m, 2cki, 2iwa, 2iwb, 2iwc, 2iwd, 2j83, 2jb9, 2jba, 2pcu, 2iyn, 3bb7, 3bba, 3d4u,  
3dwc, 3fju, 3h8t, 3dkx, 3dky, 3lms, 3lq0, 3lum, 3lun, 3mn8, 3osl, 2xs3, 2xs4, 3p24, 3ram, 3ssb, 4acq, 4gwm, 4gwn, 4he5, 4he6,  
4hwx, 4hx2, 4hx3, 4ief, 4ija, 4in9, 4jiu, 4jix, 4qhf, 4qhg, 4qhh, 4qhi, 4qhj, 4r3v, 4rbm, 4yt9, 4ytb, 4ytg, 4yu5, 4yu6, 4ziq, 4ziu, 4zjg,  
4zjh, 5a24, 5a42, 5ag8, 5ag9, 5cx8, 5m11, 5mun, 5ncs, 5nct, 5ncu and 5ncw.
- **User of large installations.** Analysis of protein crystals by synchrotron radiation. Deutsches Elektronensynchrotron (DESY), Hamburg, 1995 - 2001; Sincrotrone Elettra, Trieste, 1996 and 1999; European Synchrotron Radiation Facility (ESRF), Grenoble, since 1998; Sincrotró ALBA, Cerdanyola, since 2012.

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## REFEREES

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Institute of Zoology  
Johannes-Gutenberg University of Mainz  
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**APPENDIX**


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**COMPLETE LIST OF PEER-REVIEWED PUBLICATIONS**


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- 1) J. Irurre, F. Marquillas, E. Narbón, C. Puig & **X. Gomis** (1992). Atropoisomería en la serie 11H -dibenzo[b,e]azepínica. Parte III. 11-oxo derivados N-aril sustituidos. *An. Quim.*, **88**, 601-606.
- 2) W. Bode, **F.X. Gomis-Rüth**, R. Huber, R. Zwilling & W. Stöcker (1992). Structure of astacin and implications for activation of astacins and zinc-ligation of collagenases. *Nature*, **358**, 164-167.
- 3) M.J. Romão, D. Turk, **F.X. Gomis-Rüth**, R. Huber, G. Schumacher, H. Möllering & L. Rüssmann (1992). Crystal structure analysis, refinement and enzymatic reaction mechanism of *N*-carbamoylsarcosine amidohydrolase from *Arthrobacter* sp. at 2.0 Å resolution. *J. Mol. Biol.*, **226**, 1111-1130.
- 4) B. Laber, **F.X. Gomis-Rüth**, M.J. Romão & R. Huber (1992). *Escherichia coli* dihydrodipicolinate synthase. Identification of the active site and crystallization. *Biochem. J.*, **288**, 691-695.
- 5) **F.X. Gomis-Rüth**, W. Stöcker, R. Huber, R. Zwilling & W. Bode (1993). Refined 1.8 Å X-ray crystal structure of astacin, a zinc-endopeptidase from the crayfish *Astacus astacus* L. Structure determination, refinement, molecular structure, and comparison with thermolysin. *J. Mol. Biol.*, **229**, 945-968.
- 6) W. Stöcker, **F.X. Gomis-Rüth**, W. Bode & R. Zwilling (1993). Implications of the three-dimensional structure of astacin for the structure and function of the astacin family of zinc-endopeptidases. *Eur. J. Biochem.*, **214**, 215-231.
- 7) W. Bode, **F.X. Gomis-Rüth** & W. Stöcker (1993). Astacins, serralysins, snake venom and matrix metalloproteinases exhibit identical zinc-binding environments (HEXXHXXGXXH and Met-turn) and topologies and should be grouped into a common family, the 'metzincins'. *FEBS Lett.*, **331**, 134-140.
- 8) **F.X. Gomis-Rüth**, L.F. Kress & W. Bode (1993). First structure of a snake venom metalloproteinase: a prototype for matrix metalloproteinases/collagenases. *EMBO J.*, **12**, 4151-4157.
- 9) **F.X. Gomis-Rüth**, F. Grams, I. Yallouros, H. Nar, U. Küsthhardt, R. Zwilling, W. Bode & W. Stöcker (1994). Crystal structures, spectroscopic features and catalytic properties of cobalt(II), copper(II), nickel(II), and mercury(II) derivatives of the zinc endopeptidase astacin. A correlation of structure and proteolytic function. *J. Biol. Chem.*, **269**, 17111-17117.
- 10) **F.X. Gomis-Rüth**, L.F. Kress, J. Kellermann, I. Mayr, X. Lee, R. Huber & W. Bode (1994). Refined 2.0 Å X-ray crystal structure of the snake venom zinc-endopeptidase adamalysin II. Primary and tertiary structure determination, refinement, molecular structure and comparison with astacin, collagenase and thermolysin. *J. Mol. Biol.*, **239**, 513-544.
- 11) D. Zhang, I. Bothos, **F.X. Gomis-Rüth**, R. Doll, C. Blood, F.G. Njoroge, J.W. Fox, W. Bode & E.F. Meyer (1994). Structural interaction of natural and synthetic inhibitors with the venom metalloproteinase, atrolysin C (form d). *Proc. Natl. Acad. Sci. USA*, **91**, 8447-8451.
- 12) W. Stöcker, F. Grams, U. Baumann, P. Reinemer, **F.X. Gomis-Rüth**, D.B. McKay & W. Bode (1995). The metzincins - Topological and sequential relations between the astacins, adamalysins, serralysins, and matrixins (collagenases) define a superfamily of zinc-peptidases. *Prot. Sci.*, **4**, 823-840.
- 13) **F. X. Gomis-Rüth**, M. Gómez, S. Ventura, J. Vendrell & F. X. Avilés (1995). Crystallization and preliminary X-ray analysis of the ternary complex of procarboxypeptidase A from bovine pancreas. *FEBS Lett.*, **367**, 211-213.
- 14) **F.X. Gomis-Rüth**, I. Fita, R. Kiefersauer, R. Huber, F.X. Avilés & J. Navaza (1995). Determination of hemihedral twinning and initial structural analysis of crystals of the procarboxypeptidase A ternary complex. *Acta Cryst.*, **D51**, 819-823.
- 15) **F. X. Gomis-Rüth**, M. Gómez, W. Bode, R. Huber & F. X. Avilés (1995). The three-dimensional structure of the native ternary complex of bovine pancreatic procarboxypeptidase A with proproteinase E and chymotrypsinogen C. *EMBO J.*, **14**, 4387-4394.
- 16) U. Gohlke, **F.X. Gomis-Rüth**, T. Crabbe, G. Murphy, A.J.P. Docherty & W. Bode (1996). The C-terminal (haemopexin-like) domain structure of human gelatinase A (MMP2): structural implications for its function. *FEBS Lett.*, **378**, 126 -130.
- 17) R. Kiefersauer, J. Stetefeld, **F.X. Gomis-Rüth**, M.J. Romão, F. Lottspeich & R. Huber (1996). Protein crystal density by volume measurement and amino acid analysis. *J. Appl. Crystallogr.*, **29**, 311-317.
- 18) **F.X. Gomis-Rüth**, U. Gohlke, M. Betz, V. Knäuper, G. Murphy, C. López-Otín & W. Bode (1996). The helping hand of collagenase 3 (MMP-13): 2.7 Å crystal structure of its C-terminal haemopexin-like domain. *J. Mol. Biol.*, **264**, 556-566.
- 19) F.J. Medrano, J. Alonso, J.L. García, W. Bode & **F.X. Gomis-Rüth** (1997). Crystallization and preliminary X-ray diffraction analysis of proline-iminopeptidase from *Xanthomonas campestris* pv. *citri*. *FEBS Lett.*, **400**, 91-93.
- 20) M. Gómez-Ortiz, **F.X. Gomis-Rüth**, R. Huber & F.X. Avilés (1997). The inhibition of carboxypeptidase A by excess zinc: analysis of the structural determinants by X-ray crystallography. *FEBS Lett.*, **400**, 336-340.
- 21) C. Hammann, G. van Pouderoyen, H. Nar, **F.X. Gomis-Rüth**, A. Messerschmidt, R. Huber, T. den Blaauwen & G.W. Canters (1997). Crystal structures of modified apo-His117Gly and apo-His46Gly mutants of *Pseudomonas aeruginosa* azurin. *J. Mol. Biol.*, **266**, 357-366.
- 22) S. Ventura, **F.X. Gomis-Rüth**, A. Puigserver, F.X. Avilés & J. Vendrell (1997). Pancreatic procarboxypeptidases: oligomeric structures and activation processes revisited. *Biol. Chem.*, **378**, 161-165.
- 23) **F.X. Gomis-Rüth**, M. Gómez-Ortiz, J. Vendrell, S. Ventura, W. Bode, R. Huber & F.X. Avilés (1997). Crystal structure of an oligomer of proteolytic zymogens: detailed conformational analysis of the bovine ternary complex and implications for their activation. *J. Mol. Biol.*, **269**, 861-880
- 24) S. Strobl, **F.X. Gomis-Rüth**, K. Maskos, G. Frank, R. Huber & R. Glockshuber (1997). The  $\alpha$ -amylase from the yellow meal worm: complete primary structure, crystallization and preliminary X-ray analysis. *FEBS Lett.*, **409**, 109-114.

- 25) M. Betz, P. Huxley, S.J. Davies, Y. Mushtaq, M. Pieper, H. Tschesche, W. Bode & **F.X. Gomis-Rüth** (1997). The 1.8-Å crystal structure of the catalytic domain of human neutrophil collagenase (matrix metalloproteinase-8) complexed with a peptidomimetic hydroxamate primed-side inhibitor with a distinct selectivity profile. *Eur. J. Biochem.*, **247**, 356-363.
- 26) **F.X. Gomis-Rüth**, K. Maskos, M. Betz, A. Bergner, R. Huber, K. Suzuki, N. Yoshida, H. Nagase, K. Brew, G.P. Bourenkov, H. Bartunik & W. Bode (1997). Mechanism of inhibition of the human matrix metalloproteinase stromelysin-1 by TIMP-1. *Nature*, **389**, 77-81.
- 27) M. Pieper, M. Betz, N. Budisa, **F.X. Gomis-Rüth**, W. Bode & H. Tschesche (1997). Expression, purification, characterization and X-ray analysis of selenomethionine 215 variant of leukocyte collagenase. *J. Prot. Chem.*, **16**, 637-650.
- 28) M. Cirilli, C. Gallina, E. Gavuzzo, C. Giordano, **F.X. Gomis-Rüth**, B. Gorini, L.F. Kress, F. Mazza, M. Paglialunga Paradisi, G. Pochetti & V. Politi (1997). 2Å X-ray structure of adamalysin II complexed with a peptide phosphonate inhibitor adopting a retro-binding mode. *FEBS Lett.*, **418**, 319-322.
- 29) F.J. Medrano, J. Alonso, J.L. García, A. Romero, W. Bode & **F.X. Gomis-Rüth** (1998). Structure of proline iminopeptidase from *Xanthomonas campestris* pv. *citri*: a prototype for the prolyl oligopeptidase family. *EMBO J.*, **17**, 1-9.
- 30) **F.X. Gomis-Rüth**, E.F. Meyer, L.F. Kress & V. Politi (1998). Structures of adamalysin II with peptidic inhibitors. Implications for the design of tumour necrosis factor  $\alpha$  convertase inhibitors. *Prot. Sci.*, **7**, 283-292.
- 31) **F.X. Gomis-Rüth**, M. Gómez-Ortiz, J. Vendrell, S. Ventura, W. Bode, R. Huber & F.X. Avilés (1998). Cutting at the right place. The importance of selective limited proteolysis in the activation of proproteinase E. *Eur. J. Biochem.*, **251**, 839-844.
- 32) S. Strobl, K. Maskos, M. Betz, G. Wiegand, R. Huber, **F.X. Gomis-Rüth** & R. Glockshuber (1998). Crystal structure of the yellow meal worm  $\alpha$ -amylase at 1.64 Å resolution. *J. Mol. Biol.*, **278**, 617-628.
- 33) **F.X. Gomis-Rüth**, M. Solà, R. Pérez-Luque, P. Acebo, M.T. Alda, A. González, M. Espinosa, G. del Solar & M. Coll (1998). Overexpression, purification, crystallization, and preliminary X-ray diffraction analysis of the pMV158-encoded plasmid transcriptional repressor protein CopG. *FEBS Lett.*, **425**, 161-165.
- 34) S. Strobl, K. Maskos, G. Wiegand, R. Huber, **F.X. Gomis-Rüth** & R. Glockshuber (1998). A novel strategy for inhibition of  $\alpha$ -amylases: yellow meal worm  $\alpha$ -amylase in complex with the *Ragi* bifunctional inhibitor at 2.5 Å resolution. *Structure*, **6**, 911-921.
- 35) M. Solà, **F.X. Gomis-Rüth**, A. Guasch, L. Serrano & M. Coll (1998). Overexpression, purification, crystallization, and preliminary X-ray diffraction analysis of the receiver domain of PhoB. *Acta Cryst.*, **D54**, 1460-1463.
- 36) **F.X. Gomis-Rüth**, M. Solà, P. Acebo, A. Párraga, A. Guasch, R. Eritja, A. González, M. Espinosa, G. del Solar & M. Coll (1998). The structure of plasmid-encoded transcriptional repressor CopG, unliganded and bound to its operator. *EMBO J.*, **17**, 7404-7415.
- 37) S.S. Terzyan, R. Peracaula, R. de Llorens, Y. Tsushima, H. Yamada, M. Seno, **F.X. Gomis-Rüth** & M. Coll (1999). The three dimensional structure of human RNase 4, unliganded and complexed with d(Up), reveals the basis for its uridine selectivity. *J. Mol. Biol.*, **285**, 205-214.
- 38) M. Solà, **F.X. Gomis-Rüth**, L. Serrano, A. González & M. Coll (1999). Three-dimensional crystal structure of the transcription factor PhoB receiver domain. *J. Mol. Biol.*, **285**, 675-687.
- 39) A. González, J.-D. Pédelacq, M. Solà, **F.X. Gomis-Rüth**, M. Coll, J.P. Samama & S. Benini (1999). Two wavelength MAD phasing: in search of the optimal wavelengths. *Acta Cryst.*, **D55**, 1449-1458.
- 40) **F.X. Gomis-Rüth**, V. Companys, Y. Qian, L.D. Fricker, J. Vendrell, F.X. Avilés & M. Coll (1999). Crystal structure of avian carboxypeptidase D domain II: a prototype for the regulatory metallocarboxypeptidase family. *EMBO J.*, **18**, 5817-5826.
- 41) G. Mallorquí-Fernández, J. Pous, R. Peracaula, T. Maeda, H. Tada, H. Yamada, M. Seno, R. de Llorens, **F.X. Gomis-Rüth** & M. Coll (2000). Three-dimensional structure of human eosinophil cationic protein (RNase 3) at 1.75 Å resolution. *J. Mol. Biol.*, **300**, 1297-1309.
- 42) **F.X. Gomis-Rüth**, G. Moncalián, R. Pérez-Luque, A. González, E. Cabezón, F. de la Cruz & M. Coll (2001). Structure of a membrane DNA transfer protein essential for bacterial conjugation. *Nature*, **409**, 637-641.
- 43) J. Pous, G. Mallorquí-Fernández, R. Peracaula, S.S. Terzyan, J. Futami, H. Tada, H. Yamada, M. Seno, R. de Llorens, **F.X. Gomis-Rüth** & M. Coll (2001). Three-dimensional crystal structure of human RNase 1ΔN7 at 1.9 Å. *Acta Cryst.*, **D57**, 498-505.
- 44) V. Knäuper, M.L. Stewart, **F.X. Gomis-Rüth**, B. Smith, A. Lyons, A.J.P. Docherty & G. Murphy (2001). The role of Exon 5 in fibroblast collagenase (MMP-1) substrate specificity and inhibitor selectivity. *Eur. J. Biochem.*, **268**, 1888-1896.
- 45) P. Aloy, V. Companys, J. Vendrell, F.X. Avilés, L.D. Fricker, M. Coll & **F.X. Gomis-Rüth** (2001). The crystal structure of the inhibitor-complexed carboxypeptidase D domain II as a basis for the modelling of regulatory carboxypeptidases. *J. Biol. Chem.*, **276**, 16177-16184.
- 46) **F.X. Gomis-Rüth** & M. Coll (2001). Solving a 300kDa multimeric protein by low-resolution MAD phasing and averaging/phase extension. *Acta Cryst.*, **D57**, 800-805.
- 47) M. Costa, M. Solà, G. Del Solar, R. Eritja, A.M. Hernández-Arriaga, M. Espinosa, **F.X. Gomis-Rüth** & M. Coll (2001). Plasmid transcriptional repressor CopG oligomerises to render helical superstructures unbound and in complexes with oligonucleotides. *J. Mol. Biol.*, **310**, 403-417.
- 48) **F.X. Gomis-Rüth** & M. Coll (2001). The structure of TrwB, a gatekeeper in bacterial conjugation. *Int. J. Biochem. Cell Biol.*, **33**, 839-843.
- 49) P.J.B. Pereira, M.C. Vega, E. González-Rey, R. Fernández-Carazo, S. Macedo-Ribeiro, **F.X. Gomis-Rüth**, A. González & M. Coll (2002). *Trypanosoma cruzi* macrophage infectivity potentiator has a rotamase core and a highly exposed  $\alpha$ -helix. *EMBO Rep.*, **3**, 88-94.
- 50) A. Guasch, J. Pous, B. Ibarra, **F.X. Gomis-Rüth**, J.M. Valpuesta, N. Sousa, J.L. Carrascosa & M. Coll (2002). Detailed architecture of a DNA translocation machine: the high-resolution structure of bacteriophage  $\Phi$ 29 connector particle. *J. Mol. Biol.*, **315**, 663-676.

- 51) **F.X. Gomis-Rüth**, G. Moncalián, F. de la Cruz & M. Coll (2002). Conjugative plasmid protein TrwB, an integral membrane type IV secretion system coupling protein: detailed structural features and mapping of the active site cleft. *J. Biol. Chem.*, **277**, 7556-7566.
- 52) A.G. Blanco, M. Solà, **F.X. Gomis-Rüth** & M. Coll (2002). Tandem DNA recognition by PhoB, a two-component signal transduction transcriptional activator. *Structure*, **10**, 701-713.
- 53) **F.X. Gomis-Rüth**, F. de la Cruz & M. Coll (2002). Structure and role of coupling proteins in conjugal DNA transfer. *Res. Microbiol.*, **153**, 199-204.
- 54) M. Llosa, **F.X. Gomis-Rüth**, M. Coll & F. de la Cruz (2002). Bacterial conjugation: a two-step mechanism for DNA transport. *Mol. Microbiol.*, **45**, 1-8.
- 55) **F.X. Gomis-Rüth**, A. Bayés, G. Sotiropoulou, G. Pampalakis, T. Tsetsenis, V. Villegas, F.X. Avilés & M. Coll (2002). The structure of human prokallikrein 6 reveals a novel activation mechanism for the kallikrein family. *J. Biol. Chem.*, **277**, 27273-27281.
- 56) P.J.B. Pereira, S. Segura-Martín, B. Oliva, C. Ferrer-Orta, F.X. Avilés, M. Coll, **F.X. Gomis-Rüth** & J. Vendrell. (2002). Human procarboxypeptidase B: three-dimensional structure and implications for thrombin-activatable fibrinolysis inhibitor (TAFI). *J. Mol. Biol.*, **321**, 537-547.
- 57) G. del Solar, A.M. Hernández-Arriaga, **F.X. Gomis-Rüth**, M. Coll & M. Espinosa (2002). A genetically economical family of plasmid-encoded transcriptional repressors involved in the control of plasmid copy number. *J. Bacteriol.*, **184**, 4943-4951.
- 58) **F. X. Gomis-Rüth**, A. Dessen, J. Timmins, A. Bracher, L. Kolesnikowa, S. Becker, H.-D. Klenk & W. Weissenhorn (2003). The matrix protein VP40 from Ebola virus octamerizes into pore-like structures with specific RNA-binding properties. *Structure*, **11**, 423-433.
- 59) **F. X. Gomis-Rüth** (2003). Structural aspects of the metzincin clan of metalloendopeptidases. *Mol. Biotech.*, **24**, 157-202.
- 60) A. Canals, M.C. Vega, **F.X. Gomis-Rüth**, M. Díaz, R.I. Santamaría & M. Coll (2003). Structure of xylanase Xys1 $\Delta$  from *Streptomyces halstedii*. *Acta Cryst.*, **D59**, 1447-1453.
- 61) R. García-Castellanos, A. Marrero, G. Mallorquí-Fernández, J. Potempa, M. Coll & **F.X. Gomis-Rüth** (2003). Three-dimensional structure of Mecl: molecular basis for transcriptional regulation of staphylococcal methicillin resistance. *J. Biol. Chem.*, **278**, 39897-39905.
- 62) A. Guasch, M. Lucas, M. Cabezas, R. Pérez-Luque, **F.X. Gomis-Rüth**, F. de la Cruz & M. Coll (2003). Recognition and processing of the origin of transfer DNA by conjugative relaxase TrwC. *Nat. Struct. Biol.*, **10**, 1002-1010.
- 63) R. García-Castellanos, G. Mallorquí-Fernández, A. Marrero, J. Potempa, M. Coll & **F.X. Gomis-Rüth** (2004). On the transcriptional regulation of methicillin resistance: Mecl repressor in complex with its operator. *J. Biol. Chem.*, **279**, 17888-17896.
- 64) **F.X. Gomis-Rüth**, M. Solà, F. de la Cruz & M. Coll (2004). Coupling factors in macromolecular type IV secretion machineries. *Curr. Pharm. Des.*, **10**, 1551-1565.
- 65) G. Mallorquí-Fernández, A. Marrero, S. García-Piqué, R. García-Castellanos & **F.X. Gomis-Rüth** (2004). Staphylococcal methicillin resistance: fine focus on folds and functions. *FEMS Microbiol. Lett.*, **235**, 1-8.
- 66) M. José-Estanyol, **F.X. Gomis-Rüth** & P. Puigdomènech (2004). The eight-cysteine motif, a versatile structure in plant proteins. *Plant Physiol. Biochem.*, **42**, 355-365.
- 67) I. Pallarés, R. Bonet, R. García-Castellanos, S. Ventura, F.X. Avilés, J. Vendrell & **F.X. Gomis-Rüth** (2005). Structure of human carboxypeptidase A4 with its endogenous protein inhibitor, latexin. *Proc. Natl. Acad. Sci. USA*, **102**, 3978-3983.
- 68) A. Díaz-Perales, V. Quesada, J.R. Peinado, A. P. Ugalde, J. Álvarez, M.F. Suárez, **F.X. Gomis-Rüth** & C. López-Otín (2005). Identification and characterization of human archaeemetzincins-1 and -2, two novel members of a family of metalloproteases widely distributed in archaea. *J. Biol. Chem.*, **280**, 30367-30375.
- 69) R. García-Castellanos, R. Bonet-Figuero, I. Pallarés, S. Ventura, F.X. Avilés, J. Vendrell & **F.X. Gomis-Rüth** (2005). Detailed molecular comparison between the inhibition mode of A/B-type carboxypeptidases in the zymogen state and by the endogenous inhibitor latexin. *Cell. Mol. Life Sci.*, **62**, 1996-2014.
- 70) D. Mouradov, A. Craven, J.K. Forwood, J.U. Flanagan, R. García-Castellanos, **F.X. Gomis-Rüth**, J.L. Martin, B. Kobe & T. Huber (2006). Modelling the structure of latexin-carboxypeptidase A complex based on chemical cross-linking and molecular docking. *Protein Eng. Des. Sel. (PEDS)*, **19**, 9-16.
- 71) C. Tallant, R. García-Castellanos, J. Seco, U. Baumann & **F.X. Gomis-Rüth** (2006). Molecular analysis of ulilysin, the structural prototype of a new family of metzincin metalloproteases. *J. Biol. Chem.*, **281**, 17920-17928.
- 72) A. Marrero, G. Mallorquí-Fernández, T. Guevara, R. García-Castellanos & **F.X. Gomis-Rüth** (2006). Unbound and acylated structures of the MecR1 extracellular antibiotic-sensor domain provide insights into the signal-transduction systems that triggers methicillin resistance. *J. Mol. Biol.*, **361**, 506-521.
- 73) M. Solà, D.L. Drew, A.G. Blanco, **F.X. Gomis-Rüth** & M. Coll (2006). The cofactor-induced pre-active conformation in PhoB. *Acta Cryst.*, **D62**, 1046-1057.
- 74) T. Guevara, N. Mallorquí-Fernández, R. García-Castellanos, S. García-Piqué, G.E. Petersen, C. Lauritzen, J. Pedersen, J. Arnau, **F. X. Gomis-Rüth** & M. Solà (2006). Papaya glutamine cyclotransferase shows a singular fivefold  $\beta$ -propeller architecture that suggests a novel reaction mechanism. *Biol. Chem.*, **387**, 1479-1486.
- 75) **F. X. Gomis-Rüth** & M. Coll (2006). Cut and move: Protein machinery for DNA processing in bacterial conjugation. *Curr. Op. Struct. Biol.*, **16**, 744-752.
- 76) R. García-Castellanos, C. Tallant, A. Marrero, M. Solà, U. Baumann & **F.X. Gomis-Rüth** (2007). Substrate specificity of a metalloprotease of the pappalysin family revealed by an inhibitor and a product complex. *Arch. Biochem. Biophys.*, **457**, 57-72.
- 77) R. Arribas-Bosacoma, S.-K. Kim, C. Ferrer-Orta, A.G. Blanco, P.J.B. Pereira, **F.X. Gomis-Rüth**, B.L. Wanner, M. Coll & M. Solà (2007). The X-ray crystal structures of two constitutively active mutants of the *E. coli* PhoB receiver domain give insights into activation. *J. Mol. Biol.*, **366**, 626-641.

- 78) A. Bayés, D. González, M. Solà, A. Marrero, S. García-Piqué, F.X. Avilés, J. Vendrell & **F.X. Gomis-Rüth** (2007). Caught after the act: a human A-type metallocarboxypeptidase in a product complex with a cleaved hexapeptide. *Biochemistry*, **46**, 6921-6930.
- 79) C. Tallant, R. García-Castellanos, A. Marrero, F. Canals, Y. Yang, J.L. Reymond, M. Solà, U. Baumann & **F.X. Gomis-Rüth** (2007). Activity of ulilysin, an archaeal PAPP-A-related gelatinase and IGBP protease. *Biol. Chem.*, **388**, 1243-1253.
- 80) N. Mallorquí-Fernández, S.P. Manandhar, G. Mallorquí-Fernández, I. Usón, K. Wawrzonek, T. Kantyka, M. Solà, I.B. Thøgersen, J.J. Enghild, J. Potempa & **F.X. Gomis-Rüth** (2008). A new autocatalytic activation mechanism for cysteine proteases revealed by *Prevotella intermedia* interpain A. *J. Biol. Chem.*, **283**, 2871-2882.
- 81) L. Sanglas, Z. Valnickova, J.L. Arolas, I. Pallarés, T. Guevara, M. Solà, T. Kristensen, J.J. Enghild, F.X. Avilés & **F.X. Gomis-Rüth** (2008). Structure of activated thrombin-activatable fibrinolysis inhibitor, a molecular link between coagulation and fibrinolysis. *Mol. Cell*, **31**, 598-606.
- 82) **F.X. Gomis-Rüth** (2008). Structure and function of metallocarboxypeptidases. *Crit. Rev. Biochem. Mol. Biol.*, **43**, 319-345.
- 83) G. Niemirowicz, D. Fernández, M. Solà, J.J. Cazzulo, F.X. Avilés & **F.X. Gomis-Rüth** (2008). The molecular analysis of *Trypanosoma cruzi* metallocarboxypeptidase 1 provides insight into fold and substrate specificity. *Mol. Microbiol.*, **70**, 853-866.
- 84) L. Sanglas, F.X. Avilés, R. Huber, **F.X. Gomis-Rüth** & J.L. Arolas (2009). Mammalian metallopeptidase inhibition at the defense barrier of *Ascaris* parasite. *Proc. Natl. Acad. Sci. USA*, **106**, 1743-1747.
- 85) K. Runager, R. García-Castellanos, Z. Valnickova, T. Kistensen, N.C. Nielsen, G.K. Klintworth, **F.X. Gomis-Rüth** & J.J. Enghild (2009). Purification, crystallization and preliminary X-ray diffraction of wild-type and mutant recombinant human transforming growth factor beta induced protein (TGFB $\beta$ ). *Acta Cryst.*, **F65**, 299-303.
- 86) **F.X. Gomis-Rüth** (2009). Catalytic domain architecture of metzincin metalloproteases. *J. Biol. Chem.*, **284**, 15353-15357.
- 87) H. Wójtowicz, T. Guevara, C. Tallant, M. Olczak, A. Sroka, J. Potempa, M. Solà, T. Olczak & **F. X. Gomis-Rüth** (2009). Unique structure and stability of HmuY, a novel heme-binding protein of *Porphyromonas gingivalis*. *PLoS Pathog.*, **5**, e1000419.
- 88) D.R. Boer, J.A. Ruiz-Masó, J.R. López-Blanco, A.G. Blanco, M. Vives-Llacer, P. Chacón, I. Usón, **F. X. Gomis-Rüth**, M. Espinosa, O. Llorca, G. del Solar & M. Coll (2009). Plasmid replication initiator RepB forms a hexamer reminiscent of ring helicases and has mobile nuclease domains. *EMBO J.*, **28**, 1666-1678.
- 89) A.M. Houghton, W.O. Hartzell, C.S. Robbins, **F.X. Gomis-Rüth** & S.D. Shapiro (2009). Macrophage elastase (MMP-12) kills bacteria within murine macrophages. *Nature*, **460**, 637-641.
- 90) C. Tallant, A. Marrero & **F.X. Gomis-Rüth** (2010). Matrix metalloproteinases: fold and function of their catalytic domains. *Biochim. Biophys. Acta – Mol. Cell Res.*, **1803**, 20-28.
- 91) C. Tallant, R. García-Castellanos, U. Baumann & **F.X. Gomis-Rüth** (2010). On the relevance of the Met-turn methionine in metzincins. *J. Biol. Chem.*, **285**, 13951-13957.
- 92) T. Guevara, I. Yiallouros, R. Kappelhoff, S. Bissdorf, W. Stöcker & **F.X. Gomis-Rüth** (2010). Proenzyme structure and activation of astacin metallopeptidase. *J. Biol. Chem.*, **285**, 13958-13965.
- 93) L. Sanglas, J.L. Arolas, Z. Valnickova, F.X. Avilés, J.J. Enghild & **F.X. Gomis-Rüth** (2010). Insights into the molecular inactivation mechanism of human activated thrombin-activatable fibrinolysis inhibitor. *J. Thromb. Haemost.*, **8**, 1056-1065 (Editorial in the same issue: A. Gils, Hot spots in TAFIa, *J. Thromb. Haemost.*, **8**, 1054-1055).
- 94) S. Tanco, J.L. Arolas, T. Guevara, J. Lorenzo, F.X. Avilés & **F.X. Gomis-Rüth** (2010). Structure-function analysis of the short splicing-variant carboxypeptidase encoded by *Drosophila melanogaster* silver. *J. Mol. Biol.*, **401**, 465-477.
- 95) Z. Valnickova, L. Sanglas, J.L. Arolas, S.V. Petersen, C. Schar, D. Otzen, F.X. Avilés, **F.X. Gomis-Rüth** & J.J. Enghild (2010). Flexibility of the thrombin-activatable fibrinolysis inhibitor pro-domain enables productive binding of protein substrates. *J. Biol. Chem.*, **285**, 38243-38250.
- 96) N. Cerdà-Costa, T. Guevara, A.Y. Karim, M. Ksiazek, K.-A. Nguyen, J.L. Arolas,, J. Potempa & **F.X. Gomis-Rüth** (2011). The structure of the catalytic domain of *Tannerella forsythia* kariyisin reveals it is a bacterial xenolog of animal matrix metalloproteinases. *Mol. Microbiol.*, **79**, 119-132.
- 97) T. Goulas, J.L. Arolas & **F.X. Gomis-Rüth** (2011). Structure, function and latency regulation of a bacterial enterotoxin potentially derived from a mammalian adamalysin/ADAM xenolog. *Proc. Natl. Acad. Sci. USA*, **108**, 1856-1861.
- 98) T.O. Botelho, T. Guevara, A. Marrero, P. Aréde, V.S. Fluxá, J.-L. Reymond, D.C. Oliveira & **F.X. Gomis-Rüth** (2011). Structural and functional analyses reveal that *Staphylococcus aureus* antibiotic resistance factor HmrA is a zinc-dependent endopeptidase. *J. Biol. Chem.*, **286**, 25697-25709.
- 99) J.L. Arolas, T.O. Botelho, A. Vilcinskas & **F.X. Gomis-Rüth** (2011). Structural evidence for standard-mechanism inhibition in metallopeptidases from a complex poised to re-synthesize a peptide bond. *Angew. Chem. Int. Ed.*, **50**, 10357-10360.
- 100) **F.X. Gomis-Rüth**, T.O. Botelho & W. Bode (2012). A standard orientation for metallopeptidases. *Biochim. Biophys. Acta – Prot. & Proteom.*, **1824**, 157-163.
- 101) A. Marrero, S. Duquerroy, S. Trapani, T. Goulas, T. Guevara, G.R. Andersen, J. Navaza, L. Sottrup-Jensen & **F.X. Gomis-Rüth** (2012). The crystal structure of human  $\alpha_2$ -macroglobulin reveals a unique molecular cage. *Angew. Chem. Int. Ed.*, **51**, 3340-3344 (chosen by the journal as a *Very Important Paper* and for the cover; comment in C. Meyer, W. Hinrichs & U. Hahn, Human  $\alpha_2$ -macroglobulin—another variation on the venus flytrap, *Angew. Chem. Int. Ed.*, **51**, 5045-5047).
- 102) **F.X. Gomis-Rüth**, S. Trillo-Muyo & W. Stöcker (2012). Functional and structural insights into astacin metallopeptidases. *Biol. Chem.*, **393**, 1027-1041.
- 103) J.L. Arolas, C. Broder, T. Jefferson, T. Guevara, E.E. Sterchi, W. Bode, W. Stöcker, C. Becker-Pauly & **F.X. Gomis-Rüth** (2012). Structural basis for the sheddase function of human meprin  $\beta$  metalloproteinase at the plasma membrane. *Proc. Natl. Acad. Sci. USA*, **109**, 16131-16136.
- 104) S. Trillo-Muyo, S. Martínez-Rodríguez, J.L. Arolas & **F.X. Gomis-Rüth** (2013). Mechanism of action of a Janus-faced single-domain protein inhibitor simultaneously targeting two peptidase classes. *Chem. Sci.*, **4**, 791-797.

- 105) S. Trillo-Muyo, A. Jasilionis, M. Domagalski, M. Chruszcz, W. Minor, N. Kuisiene, J.L. Arolas, M. Solà & **F.X. Gomis-Rüth** (2013). Ultra-tight crystal packing of a 10-KDa protein. *Acta Cryst.*, **D69**, 464-470.
- 106) T. Guevara, M. Ksiazek, P.D. Skottrup, N. Cerdà-Costa, S. Trillo-Muyo, I. de Diego, E. Riise, J. Potempa & **F.X. Gomis- Rüth** (2013). Structure of *Tannerella forsythia* matrix-metallopeptidase karylisin catalytic domain in complex with a tetrapeptidic inhibitor. *Acta Cryst.*, **F69**, 472-476.
- 107) I. De Diego, F. T. Veillard, T. Guevara, B. Potempa, M. Sztukowska, J. Potempa & **F.X. Gomis-Rüth** (2013). *Porphyromonas gingivalis* virulence factor gingipain RgpB shows a unique zymogenic mechanism for cysteine peptidases. *J. Biol. Chem.*, **288**, 14287-14296.
- 108) F. Veillard, M. Sztukowska, D. Mizgalska, M. Ksiazek, J.A. Houston, B. Potempa, J.J. Enghild, I.B. Thøgersen, **F.X. Gomis-Rüth** & J. Potempa (2013). Inhibition of gingipains by their profragments as the mechanism protecting *Porphyromonas gingivalis* against premature activation of secreted proteases. *Biochim. Biophys. Acta – Gen. Subj.*, **1830**, 4218-4228.
- 109) P. Aréde, T. Botelho, T. Guevara, I. Usón, D.C. Oliveira & **F.X. Gomis-Rüth** (2013). Structure-function studies of the staphylococcal methicillin resistance anti-repressor, MecR2. *J. Biol. Chem.*, **288**, 21267-21278.
- 110) M. López-Pelegrín, N. Cerdà-Costa, F. Martínez-Jiménez, A. Cintas-Pedrola, A. Canals, J.R. Peinado, M.A. Martí-Renom, C. López-Otin, J.L. Arolas & **F.X. Gomis-Rüth** (2013). A novel family of soluble minimal scaffolds provides structural insight into the catalytic domains of integral-membrane metallopeptidases. *J. Biol. Chem.*, **288**, 21279-21294.
- 111) N. Cerdà-Costa & **F.X. Gomis-Rüth** (2014). Architecture and function of metallopeptidase catalytic domains. *Prot. Sci.*, **23**, 123-144.
- 112) J.L. Arolas, R. García-Castellanos, T. Goulas, Y. Akiyama & **F.X. Gomis-Rüth** (2014). Expression and purification of integral membrane metallopeptidase HtpX. *Protein Expre. Purif.*, **99**, 113-118.
- 113) M. López-Pelegrín, N. Cerdà-Costa, A. Cintas-Pedrola, F. Herranz-Trillo, P. Bernadó, J.R. Peinado, J.L. Arolas & **F.X. Gomis- Rüth** (2014). Multiple stable conformations account for reversible concentration-dependent oligomerization and autoinhibition of a metamorphic metallopeptidase. *Angew. Chem. Int. Ed.*, **53**, 10624-10630 (chosen for the frontispiece of the section on communications).
- 114) T. Goulas, I. García-Ferrer, S. García-Piqué, L. Sottrup-Jensen & **F.X. Gomis-Rüth** (2014). Crystallization and preliminary X-Ray diffraction analysis of eukaryotic  $\alpha_2$ -macroglobulin family members modified by methylamine, proteases and glycosidases. *Mol. Oral Microbiol.*, **29**, 354-364.
- 115) I. De Diego, F. Veillard, M.N. Sztukowska, T. Guevera, B. Potempa, A. Pomowski, J.A. Huntington, J. Potempa & **F.X. Gomis- Rüth** (2014). Structure and mechanism of cysteine peptidase Kgp, a major virulence factor of *Porphyromonas gingivalis* in periodontitis. *J. Biol. Chem.*, **289**, 32291-32302.
- 116) T. Goulas, A. Cuppari, R. García-Castellanos, S. Snipas, R. Glockshuber, J.L. Arolas & **F.X. Gomis-Rüth** (2014). The pCri system: a vector collection for recombinant protein expression and purification. *PLoS ONE*, **9**, e112643.
- 117) P.F. Huesgen, P.F. Lange, L.D. Rogers, N. Solis, U. Eckhard, O. Kleinfeld, T. Goulas, **F.X. Gomis-Rüth** & C.M. Overall (2015). LysargiNase mirrors trypsin for identification of protein C-termini and methylation sites. *Nat. Meth.*, **12**, 55-58.
- 118) M. López-Pelegrín, M. Ksiazek, A.Y. Karim, T. Guevara, J.L. Arolas, J. Potempa & **F.X. Gomis-Rüth** (2015). A novel mechanism of latency in matrix metalloproteinases. *J. Biol. Chem.*, **290**, 4728-4740.
- 119) T. Goulas, D. Mizgalska, I. Garcia-Ferrer, T. Kantyka, T. Guevara, B. Szmigielski, A. Sroka, C. Millán, I. Usón, F. Veillard, B. Potempa, P. Mydel, M. Solà, J. Potempa & **F.X. Gomis-Rüth** (2015). Structure and mechanism of a bacterial host-protein citrullinating virulence factor, *Porphyromonas gingivalis* peptidylarginine deiminase. *Sci. Rep.*, **5**, 11969 (highlighted by the Spanish Biophysical Society as one of Papers of the Month in July 2015 in Biofísica Magazine, issue #2, May-August 2015; <http://www.sbe.es/ph2015-07.asp>).
- 120) I. Garcia-Ferrer, P. Aréde, J. Gómez-Blanco, D. Luque, S. Duquerroy, J.R. Castón, T. Goulas & **F.X. Gomis-Rüth** (2015). Structural and functional insights into *Escherichia coli*  $\alpha_2$ -macroglobulin endopeptidase snap-trap inhibition. *Proc. Natl. Acad. Sci. USA*, **112**, 8290-8295 (highlighted by the Spanish Biophysical Society as one of Papers of the Month in July 2015 in Biofísica Magazine, issue #2, May-August 2015, <http://www.sbe.es/ph2015-07.asp>; selected by the Spanish Society of Biochemistry and Molecular Biology as The Article of the Month, January 2016, <http://www.sebbm.es/web/en/science-for-society/article-of-the-month>).
- 121) J.L. Arolas, T. Goulas, A.P. Pomerantsev, S.H. Leppla & **F.X. Gomis-Rüth** (2016). Structural basis for latency and function of immune inhibitor A metallopeptidase, a modulator of the *Bacillus anthracis* secretome. *Structure*, **24**, 25-36 (Preview in the same journal issue: Schacherl, M. & Baumann, U. (2016). Feeding anthrax: the crystal structure of *Bacillus anthracis* InhA protease. *Structure*, **24**, 1-2).
- 122) M.W. Risør, L.R. Thomsen, K.W. Sanggaard, T.A. Nielsen, I.B. Thøgersen, M.V. Lukassen, L. Rossen, I. Garcia-Ferrer, T. Guevara, C. Scavenius, E. Meinjohanns, **F.X. Gomis-Rüth** & J.J. Enghild (2016). Enzymatic and structural characterization of the major endopeptidase in the Venus flytrap digestion fluid. *J. Biol. Chem.*, **291**, 2271-2287 (highlighted in the May 2016 issue of the magazine of the American Society for Biochemistry and Molecular Biology ASBMB Today; <http://www.asbmb.org/asbmbtoday/201605/JournalNews/JBCVenus/>).
- 123) I. De Diego, M. Ksiazek, D. Mizgalska, L. Koneru, P. Golik, B. Szmigielski, M. Nowak, Z. Nowakowska, B. Potempa, J.A. Houston, J.J. Enghild, I.B. Thøgersen, J. Gao, A.H. Kwan, J. Trewella, G. Dubin, **F.X. Gomis-Rüth**, K.-A. Nguyen & J. Potempa (2016). The outer-membrane export signal of *Porphyromonas gingivalis* type IX secretion system (T9SS) is a conserved C-terminal  $\beta$ -sandwich domain. *Sci. Rep.*, **6**, 23123.
- 124) T. Goulas, I. Garcia-Ferrer, J.A. Hutcherson, B.A. Potempa, J. Potempa, D.A. Scott & **F.X. Gomis-Rüth** (2016). Structure of RagB, a major immunodominant outer-membrane surface receptor antigen of *Porphyromonas gingivalis*. *Mol. Oral Microbiol.*, **31**, 472-485.

- 125) A.M. Lasica, T. Goulas, D. Mizgalska, X. Zhou, I. de Diego, M. Ksiazek, M. Madej, Y. Guo, T. Guevara, M. Nowak, B. Potempa, A. Goel, M. Sztukowska, A.T. Prabhakar, M. Bzowska, M. Widziolek, I.B. Thøgersen, J.J. Enghild, M. Simonian, A.W. Kulczyk, K.-A. Nguyen, J. Potempa & **F.X. Gomis-Rüth** (2016). Structural and functional probing of PorZ, an essential bacterial surface component of the type-IX secretion system of human oral-microbiomic *Porphyromonas gingivalis*. *Sci. Rep.*, **6**, 37708 (highlighted by the Spanish Biophysical Society as one of Papers of the Month in November 2016 in Biofísica Magazine, issue #6, September-December 2016; <http://biofisica.info/lasica-gomis-ruth-sci-rep-6-37708>).
- 126) A. Pomowski, I. Usón, Z. Nowakowska, F. Veillard, M.N. Sztukowska, T. Guevara, T. Goulas, D. Mizgalska, M. Nowak, B. Potempa, J.A. Huntington, J. Potempa & **F.X. Gomis-Rüth** (2017). Structural insights unravel the zymogenic mechanism of the virulence factor gingipain K from *Porphyromonas gingivalis*, a causative agent of gum disease from the human oral microbiome. *J. Biol. Chem.*, **292**, 5724-5735 (highlighted in the March 2017 issue of the *JBC Editorial Member Digest*, "Bringing the gingipain").
- 127) T. Goulas, I. Garcia-Ferrer, A. Marrero, L. Marino-Puertas, S. Duquerroy & **F.X. Gomis-Rüth** (2017). Structural and functional insight into pan-endopeptidase inhibition by  $\alpha_2$ -macroglobulins. *Biol. Chem.*, **398**, in press.
- 128) L. Marino-Puertas, T. Goulas & **F.X. Gomis-Rüth** (2017). Matrix metalloproteinases outside vertebrates. *Biochim. Biophys. Acta – Mol. Cell Res.*, **1864**, in press.

## OTHER PUBLICATIONS

- 1) **F.X. Gomis-Rüth** (1989). Síntesis, resolución en atropoisómeros y análisis conformacional en derivados 11-carboximetilénicos de 11H-dibenzo[b,e]azepin-6-onas y 6-tionas N-substituidas. Dept. of Organic Chemistry, IQS, Barcelona (M.Sc.-thesis).
- 2) **F.X. Gomis-Rüth** (1992). Biochemische und kristallographische Arbeiten an zwei Enzymen: Dihydrodipicolinat-Synthase und Astacin. Faculty of Chemistry and Pharmacy, Ludwig-Maximilian University, Munich (Germany) (Ph.D.-thesis).
- 3) W. Stöcker, **F.X. Gomis-Rüth**, R. Huber, R. Zwilling & W. Bode (1992). Astacin: Archetype of a novel protein-family. *Verh. Dtsch. Zool. Ges.*, **85**, 170-170 (Published conference communication).
- 4) W. Stöcker, **F.X. Gomis-Rüth**, R. Huber, R. Zwilling & W. Bode (1992). The three-dimensional structure of astacin and its implications for the structure and function of a new family of zinc-endopeptidases. *Biol. Chem. Hoppe-Seyler*, **373**, 654-654 (Published conference communication).
- 5) W. Bode, L. Kress & **F.X. Gomis-Rüth** (1994). The crystal structure of adamalysin II, a zinc-endopeptidase from the snake venom of the Eastern diamondback rattlesnake *Crotalus adamanteus*. *Brazilian J. Med. Biol. Res.*, **27**, 2049-2068 (Published conference communication).
- 6) W. Bode, **F.X. Gomis-Rüth**, R. Zwilling & W. Stöcker (1993). The three-dimensional structure of astacin: implications for the structure of astacins and for the zinc ligation of other metalloproteinases. In *Proteolysis and Protein Turnover* (A.J. Barrett & J.S. Bond, eds.), Portland Press Inc., Cambridge, pp. 13-24 (Published conference communication).
- 7) W. Stöcker, I. Yallouros, R. Zwilling, **F.X. Gomis-Rüth**, F. Grams & W. Bode (1993). Kinetic investigation and X-ray structure analysis of metal-substituted derivatives of the zinc-endopeptidase astacin reveals a correlation between metal-ligand geometry and catalytic activity. *Biol. Chem. Hoppe-Seyler*, **374**, 682-683 (Published conference communication).
- 8) W. Bode, F. Grams, P. Reinemer, **F.X. Gomis-Rüth**, U. Baumann, D.B. McKay & W. Stöcker (1995/1996). The metzincins: a superfamily of structurally related metalloproteinases. *Zoology - Analysis of Complex Systems*, **99**, 237-246 (Published conference communication).
- 9) W. Bode, F. Grams, P. Reinemer, **F.X. Gomis-Rüth**, U. Baumann, D.B. McKay & W. Stöcker (1996). The metzincin-superfamily of zinc-peptidases. In *Intracellular Protein Catabolism* (K. Suzuki & J.S. Bond, eds.), Book Series *Advances in Experimental Medicine and Biology*, Vol. 389, Plenum Publishing Co., New York, pp. 1 – 11 (Published conference communication).
- 10) W. Bode, F. Grams, P. Reinemer, **F.X. Gomis-Rüth**, U. Baumann, D.B. McKay & W. Stöcker (1997). The metzincins: a new superfamily of zinc endopeptidases. In *The Astacins - Structure and Function of a New Protein Family* (W. Stöcker & R. Zwilling, eds.), Verlag Dr. Kovač, Hamburg, pp. 29-43 (Book chapter).
- 11) W. Stöcker, I. Yallouros, D. Köhler, S. Gredel, R. Zwilling, V. Dive, W. Bode, **F.X. Gomis-Rüth** & F. Grams (1997). Structural basis for the function of astacin and related zinc peptidases. In *The Astacins - Structure and Function of a New Protein Family* (W. Stöcker & R. Zwilling, eds.), Verlag Dr. Kovač, Hamburg, pp. 147-163 (Book chapter).
- 12) **F.X. Gomis-Rüth**, W. Stöcker & W. Bode (1997). Comparison of the crystallographic structure of rattlesnake venom adamalysin II with other members of the metzincin-superfamily of metalloendopeptidases and thermolysin. In *The Astacins - Structure and Function of a New Protein Family* (W. Stöcker & R. Zwilling, eds.), Verlag Dr. Kovač, Hamburg, pp. 329-348 (Book chapter).
- 13) A. Guasch, N. Verdaguer, **F.X. Gomis-Rüth**, I. Fita & M. Coll (1998). Cristal·lografia de proteïnes. *Treballs de la Societat Catalana de Biologia*, **48**, 13-23 (Special issue of the Catalan Biological Society).
- 14) W. Bode, C. Fernández-Catalán, F. Grams, **F.X. Gomis-Rüth**, H. Nagase, H. Tschesche & K. Maskos (1999). Insights into MMP-TIMP interactions. *Ann. N.Y. Acad. Sci.*, **878**, 73-91 (Published conference communication).
- 15) F. X. Gomis & Miquel Coll. Resistencia bacteriana a los antibióticos. Diario de Sevilla, 15-03-2001, pp. 48-49 (Newspaper article).
- 16) **F. X. Gomis-Rüth** (2004). Hemopexin Domains. In *Handbook of Metalloproteins – Volume III* (W. Bode, M. Cygler & A. Messerschmidt, eds.), John Wiley & Sons, Chichester, pp. 631-646 (Book chapter).
- 17) I. Pallarés, R. Bonet, R. García-Castellanos, S. Ventura, F.X. Avilés, J. Vendrell & **F.X. Gomis-Rüth** (2005). Biochemical and structural characterisation of human ECI and its complex with human carboxypeptidase A4. *FEBS J.*, **272** (Suppl. 1), 96-97 (Published conference communication; poster A2-064P).

- 18) L. Sanglas, Z. Valnickova, J.L. Arolas, I. Pallarés, T. Guevara, M. Solà, T. Kristensen, J.J. Enghild, F.X. Avilés & **F.X. Gomis-Rüth** (2009). Atomic structure of a molecular switch for blood coagulation and fibrinolysis. In *ESRF Highlights 2008* (Gary Admans, ed.). ESRF, Grenoble, pp.66-67 (Book chapter).
- 19) J.A. Ruiz-Maso, D.R. Boer, J.R. López-Blanco, A.G. Blanco, M. Vives-Llacer, P. Chacón, I. Usón, **F.X. Gomis-Rüth**, M. Espinosa, O. Llorca, G. del Solar & M. Coll (2009). Structural features of the replication initiator protein RepB of the promiscuous plasmid pMV158. *FEBS J.*, **276** (Suppl. 1), 387-387 (Published conference abstract).
- 20) **X. Gomis-Rüth** & M. Solà (2010). Em cura la grip : L'estructura tridimensional de proteïnes com a motlle per el desenvolupament de fàrmacs. In *Què fa la biotecnologia per a mi?* (Silvia Pujals Riatós & Eduard Sabidó Aguadé, eds.). Xarxa de Referència en Biotecnologia, Generalitat de Catalunya, Barcelona, pp.27-36 (Digital book chapter).
- 21) J. Potempa, **F. X. Gomis-Rüth** & A.Y. Karim (2013). 185. Karilysin. In *Handbook of Proteolytic Enzymes* (N.D. Rawlings & G.S. Salvesen, eds.), Academic Press, Oxford, pp. 883-886 (Book chapter).
- 22) T. Goulas & **F. X. Gomis-Rüth** (2013). 186. Fragilysin. In *Handbook of Proteolytic Enzymes* (N.D. Rawlings & G.S. Salvesen, eds.), Academic Press, Oxford, pp. 887-891 (Book chapter).
- 23) U. Baumann & **F. X. Gomis-Rüth** (2013). 270. Ulilysin (*Methanoscarcina acetivorans*). In *Handbook of Proteolytic Enzymes* (N.D. Rawlings & G.S. Salvesen, eds.), Academic Press, Oxford, pp. 1208-1211 (Book chapter).
- 24) L.D. Fricker & **F. X. Gomis-Rüth** (2013). 291. Carboxypeptidase A4. In *Handbook of Proteolytic Enzymes* (N.D. Rawlings & G.S. Salvesen, eds.), Academic Press, Oxford, pp. 1307-1310 (Book chapter).
- 25) T.O. Botelho & **F. X. Gomis-Rüth** (2013). 373. HmrA peptidase. In *Handbook of Proteolytic Enzymes* (N.D. Rawlings & G.S. Salvesen, eds.), Academic Press, Oxford, pp. 1651-1654 (Book chapter).
- 26) **F. X. Gomis-Rüth** (2013). Zinc adamalysins. In *Encyclopedia of Metalloproteins* (V.N. Uversky, R.H. Kretsinger & E.A. Permyakov, eds.), Springer Verlag, Heidelberg, pp. 2345-2349 (Book chapter).
- 27) J.L. Arolas & **F. X. Gomis-Rüth** (2013). Zinc metallocarboxypeptidases. In *Encyclopedia of Metalloproteins* (V.N. Uversky, R.H. Kretsinger & E.A. Permyakov, eds.), Springer Verlag, Heidelberg, pp. 2473-2479 (Book chapter).
- 28) **F. X. Gomis-Rüth** (2013). A different look for AB<sub>5</sub> toxins. *Structure*, **21**, 1909-1910 (Preview of an article in the same issue).
- 29) W. Stöcker & **F. X. Gomis-Rüth** (2013). Astacins : proteases in development and tissue differentiation. In *Proteases : Structure and Function* (K. Brix & W. Stöcker, eds.), Springer Verlag, Vienna (Austria), pp. 235-263 (Book chapter).
- 30) **F. X. Gomis-Rüth** (2014). Peptidasas: nanomáquinas para el procesado de proteínas. In *A través del cristal: Cómo la cristalográfia ha cambiado la vision del mundo* (M. Martínez-Ripoll, J.A. Hermoso & A. Albert, eds.), Los Libros de la Catarata, CSIC, Madrid, pp. 89-97 (Book chapter).
- 31) M. López-Pelegrín, N. Cerdà-Costa, A. Cintas-Pedrola, F. Herranz-Trillo, P. Bernadó, J.R. Peinado, J.L. Arolas & **F.X. Gomis-Rüth** (2015). Molecular plasticity controls proteolytic activity. ALBA Activity Report 2014, Alba Synchrotron, Cerdanyola del Vallès (Barcelona), pp. 15-16 (Annual report of activity).
- 32) I. Garcia-Ferrer, P. Aréde-Rei, T. Goulas & **F.X. Gomis-Rüth** (2015). Mechanistic insights into the action of a bacterial protease inhibitor (P35-019). *FEBS J.*, **282** (Suppl. 1), 328-328 (Published conference abstract).
- 33) I. Garcia-Ferrer, A. Marrero, **F.X. Gomis-Rüth** & T. Goulas (2017). α<sub>2</sub>-Macroglobulins: structure and function. In *Macromolecular Protein Complexes*, series *Subcellular Biochemistry*, Vol. 83 (J.R. Harris & J. Marles-Wright, eds.), Springer, Cham (Switzerland), pp. 149-183 (Book chapter).

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## PREVIOUS GRANTS AND FUNDING

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- **PhD grant** (Max-Planck-Gesellschaft), Dept. of Structural Analysis, Max-Planck Institute of Biochemistry (Martinsried, Munich, Germany). 8.1989 - 7.1992
- **Postdoctoral research grant** (Max-Planck-Gesellschaft). Max-Planck Institute of Biochemistry. 8.1992 - 10.1992.
- **CIRIT grant**, General Management of Research, Generalitat of Catalunya (**Travel expenses grant**). Ref.: EE92-392. 11.1992 - 12.1992.
- **EMBO long-term fellowship**. Ref.: ALTF 371-1992. 1.1993 - 7.1993.
- **CIRIT grant**, General Management of Research, Generalitat of Catalunya (**Travel expenses grant**). Ref.: EE93-121. 5.1993 - 8.1993.
- **Marie-Curie Training Grant** financed by the European Commission's Human Capital and Mobility Programme (category 30). Ref.: ERBCHBICT920053. 7.1993 - 3.1995.
- **Postdoctoral grant**, Research Personnel Training within the General Overseas Sub-programme of the Spanish Ministry of Education and Science. Ref.: EX94 46121143. 4.1995 - 12.1996.
- Research project for the promotion of **scientific-technical bilateral collaborations**. Department of International Relations, Forschungsanstalt für Luft- und Raumfahrt (Germany) and C.S.I.C. Trips and short stays between laboratories. Role: PI with R. Huber (Max-Planck Institute of Biochemistry). 1.1997 - 12.1998.
- **Special funding for incorporation into CSIC**, Vice-presidency of Scientific and Technical Research, CSIC. Ref.: 999/00/070. Grant awarded: €1,803. Role: PI. 7.2000.
- **R&D project, National Biotechnology Plan**. Ministry of Science and Technology. "Structural biology of hydrolases of therapeutic interest (I)". Ref.: BIO2000-1659. Total awarded (incl. Indirect costs): €124,194. Role: PI. 1.2001 - 12.2003.
- **Grants for Consolidated Research Groups of Catalonia**, Generalitat of Catalunya. Ref.: 2001SGR 00346. Grant: €48,081. Awardee: Crystallography Group, IBMB. Principal Investigator: M. Coll (CSIC; Barcelona). Role: Co-PI. 2001 - 2004.

- “Marina Bueno” Programme between C.S.I.C and Max-Planck-Gesellschaft to finance **short stays** in overseas research centres. Three stays for lab members at the Max-Planck Institute of Biochemistry (Planegg-Martinsried, Munich, Germany). Role: PI with K. Zeth. 2003.
- Research project from the National Programme for the **mobility of overseas and Spanish professors and researchers**. Ministry of Education, Culture and Sport. A 5-month stay by Prof. Ulrich Baumann at IBMB. Title: “Towards the structure determination of archaeal metzincins”. Ref. SAB2002-0102. Role: PI with U. Baumann (University of Bern). 2003.
- **CSIC "Intramural Frontier" Project**. “Chemical chaperones: functional recovery of proteins with folding defects through interaction with small organic molecules. A therapeutic approach to Gaucher's disease”. Ref. 200420F0263. Total awarded: €51,215. Main awardee: A. Llebaria (CSIC; Barcelona). Role: Co-PI. Amount awarded to subgroup: €23,500. 1.10.2004 - 30.9.2005
- Project for the Hispanic-Polish Scientific-Technical Cooperation. Ministry of State for International Cooperation, Ministry for Overseas Affairs and Cooperation. “Cloning, overexpression, crystallisation, and structural analysis by X-ray crystallography of *P. gingivalis* metzincin”. **Trips and short stays**. Role: PI with J. Potempa (University of Krakow, Poland). 2004 - 2006.
- **R&D project, National Biotechnology Plan**, Ministry of Science and Technology. “Structural biology of hydrolases of therapeutic interest (II)”. Ref.: BIO2003-00132. Total awarded (incl. Indirect costs): €230,350. Role: PI. 1.12.2003 - 30.11.2006.
- Research project on cancer research from the **La Caixa Foundation**. “Structural basis for the design of secretase inhibitors (MDC9/ADAM-9) of heparin-binding growth factor resembling epidermal growth factor”. Ref.: ON03-7-0 (€123,000 awarded). Role: PI. 4.11.2003 - 3.11.2006.
- National Programme of Services Technologies of the Information Society (**PROFIT** programme), Strategic Action for e-Inclusion. Department of Telecommunications and Information Society, Ministry of Industry, Tourism and Commerce. Ref. FIT-350300-2006-40. “Evaluation of population risk by means of microarray analysis and artificial intelligence”. Main awardee: Infociencia, S.L. Total awarded: €166,100. Amount awarded to subgroup: €28,798. Role: Co-PI. 2006.
- National Programme of Services Technologies of the Information Society (**PROFIT** programme), Strategic Action for e-Inclusion. Department of Telecommunications and Information Society, Ministry of Industry, Tourism and Commerce. Ref. FIT-350300-2006-41. “Telemedicine prototype to follow cardiac alterations and suspicious skin blemishes via commercial 3G terminals and UMTS connection. A prediagnostic system using artificial intelligence and GRID technology”. Main awardee: Infociencia Clinical Research, S.L. Total awarded: €205,892. Amount awarded to subgroup: €5,000. Role: Co-PI. 2006.
- Integrated project for the **Strategic Action of Genomics and Proteomics**, Ministry of Science and Technology. “Structural genomics: application to proteins and proteinaceous complexes associated with cancer”. Ref. GEN2003-20642. Total awarded: €1,232,000. Subproject: €261,00. Main and subgroup awardee: M. Coll (CSIC; Barcelona). Role: Co-PI. 9.2004 - 8.2007.
- **Project FIS** (Health Institute Carlos III) “Gaucher's disease: new therapies and their impact on clinical physiopathology. An answer to treatment and patient perception of their disease.” (Project PERSEO; general coordinator: P. Giraldo). Subproject “Chemical chaperones and glucocerebrosidase. Design, synthesis and molecular and structural basis of its mode of action”. Ref. PI040767. Subproject awardee: A. Llebaria. Amount awarded to subgroup: €103,500. Role: Co-PI. 1.1.2005 - 31.12.2007
- **Complementary Grant (Acción complementaria)**, National Programme for International Cooperation for Science and Technology, BIO Programme. “Molecular analysis of metalloproteases of oncological interest”, Ministry of Education and Science. Ref. BIO2004-20369-E. Total awarded €21,000. Role: PI. 5.4.2005 - 31.12.2007.
- National Programme of Services Technologies of the Information Society (**PROFIT** programme), Strategic Action for e-Inclusion. Department of Telecommunications and Information Society, Ministry of Industry, Tourism and Commerce. Ref. FIT-350300-2007-67. “Evaluation of population risk by means of microarray analysis and artificial intelligence”. Main awardee: Infociencia, S.L. Total awarded: €168,355. Amount awarded to subgroup: €42,574. Role: Co-PI. 2007.
- National Programme of Services Technologies of the Information Society (**PROFIT** programme), Strategic Action for e-Inclusion. Department of Telecommunications and Information Society, Ministry of Industry, Tourism and Commerce. Ref. FIT-350300-2007-72. “Telemedicine prototype to follow cardiac alterations and suspicious skin blemishes via commercial 3G terminals and UMTS connection. A prediagnostic system using artificial intelligence and GRID technology”. Main awardee: Infociencia Clinical Research, S.L. Total awarded: €98,371. Amount awarded to subgroup: €9,849. Role: Co-PI. 2007.
- AVON Cancer Research Project from the Science Foundation of the **Spanish Association Against Cancer** (AECC) “Functional and structural characterization of a novel product of the protooncogene HER2. Therapeutic implications for breast cancer”. Main awardee: J. Arribas (IR-HUH; Barcelona). Total awarded: €300,000. Role: Co-PI. Amount awarded to subgroup: €82,000. 4.2005 - 3.2008.
- **European Integrated Project FP6** “Extracellular proteases and the cancer degradome: innovative diagnostic markers, therapeutic targets and tumour imaging agents (**CANCERDEGRADOME**)”. Ref. LSHC-CT-2003-503297. Consortium of 35 groups. General coordinator: D. Edwards, University of East Anglia (UK). Role: Subproject awardee nº 28 (€10.4m awarded in total; €214,857 allocated to subproject). 1.1.2004 - 30.6.2008.
- **Scientific/Technical and Special Projects** by the National Biotechnology Plan, Ministry of Education and Science. “Identification of secondary targets and design of drugs for diseases associated with aging through structural and functional analysis of biological routes”. Ref. PSE-010000-2007-1. Coordinator: INFOCIENCIA, S.L. Total fundable budget: €3,348,260. Amount awarded to subgroup: €459,463. Role: Co-PI. 1.1.2007 - 31.12.2008.
- **Grants for Consolidated Research Groups of Catalonia**, Generalitat of Catalunya. Ref.: 2005SGR-00280. Total awarded: €50,600. Awardee: Crystallography Group, IBMB. Coordinator: M. Coll (CSIC; Barcelona). Role: Co-PI. 2005 - 2008.
- **European STREP FP6 Project** “Chemical genomics by activity monitoring of proteases (**CAMP**)”. Ref. LSHG-CT-2006-018830. Coordinator: F.Xavier Avilés (UAB, Barcelona). Role: Subproject awardee (€70,385 allocated to subproject). 1.10.2007 - 30.06.2009.
- **R&D project, National Biotechnology Plan**, Ministry of Education and Science. “Structural biology of hydrolases of therapeutic interest (III)”. Ref.: BIO2006-02668. Total awarded (direct costs): €295,000. Role: PI. 1.10.2006 - 30.9.2009.

- **Scientific/Technical and Special Project** of the National Biotechnology Plan, Ministry of Science and Innovation. "Identification of secondary targets and drug design for diseases associated with aging through structural and functional analysis of biological routes". Ref. PSE-010000-2009-8. Coordinator: INFOCIENCIA, S.L. Total fundable budget: €1,170,321. Amount awarded to subgroup: €536,200. Role: Co-PI. 1.10.2009 - 30.6.2011.
- **Complementary Grant (Acción complementaria)** of the European Project "Extracellular proteases and the cancer degradome: innovative diagnostic markers, therapeutic targets and tumour imaging agents (CANCERDEGRADOME)". Ref. BIO2008-04080-E. Total awarded: €32,000. Role: PI. 1.4.2009 - 30.9.2011.
- **R&D project**, National Biotechnology Plan, Ministry of Science and Technology. "Structural biology of hydrolases of therapeutic interest (IV)". Ref.: BIO2009-10334. Total awarded (direct costs only): €295,000. Role: PI. 1.1.2010-31.12.2012.
- **European STREP FP7 Project** "Identification and validation of novel drug targets in Gram-negative bacteria by global search: a trans-system approach". Ref.FP7-HEALTH-F3-2009-223101 "AntiPathoGN". Coordinator: Xavier Daura (UAB, Barcelona). Role: Co-PI, Responsible for the Third Part of Subproject n° 2 (€300,000 in total allocated to group). 1.2.2009 – 30.6.2013 (after 6-month extension).
- **Programme for the Development of Science and Technology in Latin-American (CYTED)**. Ref.:210RT0390. "Multidisciplinary network for the study of disorders of movement: Parkinson's disease and spinocerebellar ataxias". Total awarded: €128,000 (for trips and network activities). Role: Co-PI. 2009 – 2013.
- **Consolidated Research Groups of Catalunya Grant**, Generalitat of Catalunya. Ref.: 2009SGR1036. "Structural biology: computational methods and structure-function analysis of proteins of biomedical and biotechnological interest (MEBIO)". Total awarded: €42,640. Role: Coordinator and co-PI. 2009 – 2013 (extended till 31.3.2014).
- **"Fundació La Marató de TV3" Research Project**, Edition 2009 – Biomedical Research Projects in Minority Diseases. "Clinical, genetic, epidemiological, pathophysiological and translational studies of spinocerebellar ataxias". Ref. 100732. Coordinator: Antoni Matilla Dueñas (IICSGTP, Badalona). Grant awarded to subproject: €176,500. Role: Co-PI. 1.1.2011 – 30.6.2014 (after 6-month extension).
- **European Union STREP FP7 Project** "Protein citrullination as a link between periodontal diseases and rheumatoid arthritis (RA) and target for development of novel drugs to treat RA". Ref. FP7-HEALTH-2010-261460 "Gums&Joints". Coordinator: Peter Mydel (Bergen, Norway). Total awarded to subgroup: €504,510. Role: Co-PI and Coordinator of Subproject (WP) n° 3. 1.11.2010 – 31.10.2014.
- **"Consolider-Ingenio" Project 2010**, first call (2006), "The Crystallization Factory", Ministry of Education and Science. Ref.: CSD2006-00015. Total awarded: €5,000,000. Grant awarded to subgroup: €171,308. Coordinator: J.M. García Ruiz. Role: Co-PI. 6.12.2006-6.12.2014.
- **R&D project**, State Plan, section Molecular and Cellular Biology, Ministry of Economy and Competititvity. "Biochemistry of proteolysis: function, regulation and structure of peptidases and their inhibitors". Ref.: BFU2012-32862. Total awarded (direct costs): €280,000. Role: PI. 1.1.2013-31.12.2015.
- **European Union Marie Curie Initial Training Network (ITN) Project** "RAPID-Rheumatoid arthritis and periodontal inflammatory disease". Ref. FP7-PEOPLE-2011-290246 "RAPID". Coordinator: Thomas Dietrich (Birmingham, UK). Total grant awarded to subgroup: €380,367 (incl. Indirect costs). Role: Co-PI and Coordinator of Subproject (WP) n° 3. 1.4.2012 – 31.3.2016.
- **Consolidated Research Groups of Catalunya Grant**, Generalitat of Catalunya. Ref.: 2014SGR9. "Proteolysis Lab". Total awarded: €15,000. Role: Coordinator. 2014 – 2016.
- **R&D project**, State Plan, program Explora technology, section Biotechnology, Ministry of Economy and Competititvity. "Redesign of therapeutic proteins with enhanced stability through incorporation of non-natural amino acids". Ref.: BIO2013-49320-EXP. Total awarded (direct costs): €60,000 (direct costs). Role: PI. 1.9.2014-31.8.2016 (extended to 31.1.2017).
- **European Union STREP FP7 Project** "King of hearts, joints and lungs: periodontal pathogens as etiologic factor in RA, CVD and COPD and their impact on treatment strategies". Ref. FP7-HEALTH-2012-306029-2 "TRIGGER". Coordinator: Peter Mydel (Bergen, Norway). Total awarded to subgroup: €519,041 (incl. indirect costs). Role: Co-PI and Coordinator of Subproject (WP) n° 6. 1.4.2013 – 31.3.2017.

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## CONGRESSES, INVITED CONFERENCES, TALKS AND COURSES

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### 1988 – 2006 (selection of 71 in total)

- Matrix Metalloproteinases **Gordon Research Conference**, I, Plymouth State College, New Hampshire (USA). Attendance and invited talk: "The first X-ray structure of a snake venom metalloproteinase, adamalysin II". 15.08.1993 - 20.08.1993.
- **Gordon Research Conference** on Proteolytic Enzymes and their Inhibitors, VIII, Colby-Sawyer College, New London, New Hampshire (USA). Attendance and (co)presentation of 4 posters:  
F.X. Gomis-Rüth, L.Kress, E.Meyer, W. Stöcker & W. Bode. "The three-dimensional structure of adamalysin II: a prototype for a subfamily of the *metzincin* - family of metalloendopeptidases" (poster 6/25.7).  
W. Stöcker, F. Grams, P. Reinemer, F.X. Gomis-Rüth & W. Bode. "Topological and sequential relation between the astacins, adamalysins, serralysins, and matrixins (collagenases) define the metzincin-family of zinc-peptidases" (poster 7a/27.7).  
W. Stöcker, I. Yalouros, F. Grams, V. Dive, F.X. Gomis-Rüth, R. Zwilling & W. Bode. "Structure-function relationship in the zinc-endopeptidase astacin" (poster 7b/27.7).  
F. Grams, P. Reinemer, F.X. Gomis-Rüth, W. Stöcker, J.C. Powers, V. Dive, T. Kleine, H. Tschesche, R. Huber & W. Bode. "Crystallographic studies of inhibitor binding to collagenase and related proteases" (poster 11/27.7). 24.07.1994 - 29.07.1994.

- **EMBO Annual Symposium** 1995. Structure and function of proteins. EMBL Heidelberg (Germany). Attendance and poster presentation (106): F.X. Gomis-Rüth, M. Gómez, W. Bode, R. Huber & F.X. Avilés. "The three-dimensional structure of the native ternary complex of bovine pancreatic procarboxypeptidase A with proproteinase E and chymotrypsinogen C". 25.09.1995 - 28.09.1995.
- **Gordon Research Conference** on Proteolytic Enzymes and Their Inhibitors, IX, Colby-Sawyer College, New Hampshire (USA). Attendance and invited talk: "The three-dimensional structure of the native ternary complex of bovine pancreatic procarboxypeptidase A with proproteinase E and chymotrypsinogen C". 21.07.1996 - 26.07.1996.
- **Gordon Research Conference** on Matrix Metalloproteinases, III, Proctor Academy, Andover, New Hampshire (USA). Poster: K. Maskos, F.X. Gomis-Rüth, C. Fernández-Catalán, M. Betz, A. Bergner, R. Huber, K. Suzuki, N. Yoshida, H. Nagase, K. Brew, A. Lichte, H. Tschescche, F.H. Büttner, J.J. Calvete, E. Bartnik, G.B. Bourenkov, H. Bartunik & W. Bode. "The interaction of matrix metalloproteinases and their tissue inhibitors (TIMPs) comes to light: crystal structure of the stromelysin-1/TIMP-1 complex and preliminary crystal structure of the MT1-MMP/TIMP-2 complex". 13.07.1997 - 18.07.1997.
- **Gordon Research Conference** on Nucleic Acids, Salve Regina University, Newport, Rhode Island (USA). Poster: F.X. Gomis-Rüth, M. Costa, M. Solà, A. González, R. Eritja, P. Acebo, G. del Solar, M. Espinosa & M. Coll. "Structure of transcriptional repressor CopG unliganded and in complexes with DNA". 04.07.1999 - 09.07.1999.
- **Gordon Research Conference** on Plasmid and Chromosome Dynamics, Colby-Sawyer College, New London, New Hampshire (USA). Poster: G. del Solar, F.X. Gomis-Rüth, A.M. Hernández-Arriaga, P. Acebo, M. Solà, R. Eritja, M. Coll & M. Espinosa. "Features of the CopG regulatory protein encoded by plasmid pMV158". 01.08.1999 - 06.08.1999.
- **Gordon Research Conference** on Proteolytic Enzymes and their Inhibitors, XI, Colby-Sawyer-College, New London, New Hampshire (USA). Attendance and poster presentation (PSII/15): F.X. Gomis-Rüth, V. Companys, Y. Qian, L.D. Fricker, J. Vendrell, F.X. Avilés & M. Coll. "The structure of gp180 regulatory carboxypeptidase D domain II". 09.07.2000 - 14.07.2000.
- **Conference** "Metzincins at the Cell Surface and the Extracellular Matrix", Monte Verità, Ascona (Switzerland). Attendance. 30.09.2001 - 05.10.2001.
- **XV<sup>th</sup> International Congress on Microscopy**, Durban (South Africa). Co-presentation of poster: J.L. Carrascosa, J.M. Valpuesta, J.J. Fernández, O. Llorca, J.R. Castón, A. Guasch, J. Pous, F.X. Gomis-Rüth & M. Coll: "A combined approach for the structural analysis of a DNA translocase". 01.09.2002 - 06.09.2002.
- **Gordon Research Conference** on Matrix Metalloproteinases, VI, Big Sky Resort, Montana (USA). Attendance and poster presentation: F.X. Gomis-Rüth: "The metzincin clan of metalloendopeptidases: Structural aspects and new family members". 17.08.2003 - 22.08.2003.
- **Invited Talk**: "Structural studies of proteins engaged in antibiotic resistance". Department of Chemistry and Biochemistry, University of Bern, Bern (Switzerland). 16.04.2004.
- **Invited Talk**: "Molecular analysis of proteases and the bacterial antibiotic resistance". Department of Molecular Biology, University of Geneva, Geneva (Switzerland). 28.02.2005.
- **30<sup>th</sup> FEBS Congress & 9<sup>th</sup> IUBMB Conference**, Budapest (Hungary). Co-presentation of poster: I. Pallarés, R. Bonet, R. García-Castellanos, S. Ventura, F.X. Avilés, J. Vendrell & F.X. Gomis-Rüth: "Biochemical and structural characterization of human ECI and its complex with human carboxypeptidase A4". 02.07.2005 - 07.07.2005.
- **Gordon Research Conference** on Matrix Metalloproteinases, VII, Big Sky Resort, Montana (USA). Attendance and poster presentation: R. García-Castellanos, R. Bonet-Figueredo, I. Pallarés, S. Ventura, F.X. Avilés, J. Vendrell & F.X. Gomis-Rüth: "Molecular comparison between the inhibition mode of A/B-type carboxypeptidases in the zymogen state and by the endogenous inhibitor latexin". 28.08.2005 - 02.09.2005.
- **Workshop**: Functional Genomics of Proteases, University of Bern (Switzerland). Invited talk: F.X. Gomis-Rüth: "Current state of the art on structural studies on metzincins". 20.11.2005 - 22.11.2005.
- **Conference** "Metzincins metalloproteases in health and disease", Centro Stefano Franscini, Monte Verità, Ascona (Switzerland). Attendance, session chairman, co-presentation of poster and invited talk: R. García-Castellanos, C. tallant, W. Stöcker, W. Bode, U. Baumann & F.X. Gomis-Rüth: "Structural overview on metzincins". Poster: A. Díaz-Perales, V. Quesada, J.R. Peinado, A. P. Ugalde, J. Álvarez, M.F. Suárez, S. Trillo, G. Mallorquí-Fernández, F.X. Gomis-Rüth & C. López-Otín: "Identification, overexpression and characterization of two novel human metalloproteases". 24.09.2006 - 29.09.2006.

## 2007 - present (complete list)

- **Gordon Research Conference** on Matrix Metalloproteinases, VIII, Il Ciocco, Lucca (Barga) (Italy). Attendance, session chairman and invited talk (in substitution of Wolfram Bode): "Metzincin structures: past, present and future". 03.06.2007 - 08.06.2007.
- **Conference** "Bacillus – ACT 2007: International Conference on *Bacillus anthracis*, *B. cereus*, and *B. thuringiensis*", Oslo (Norway). Co-presentation of poster: A.P. Pomerantsev, C. Tallant, A. Camp, F.X. Gomis-Rüth & S.H. Leppla: "Phenotypic effects of inactivation of proteases of *Bacillus anthracis*". 17.06.2007 - 21.06.2007.
- **Invited Talk**: "Structural and functional insights into metzincin metallproteases". Department of Molecular Biology, University of Aarhus, Aarhus (Denmark). 21.06.2007.
- **X<sup>th</sup> International Symposium on Proteinase Inhibitors and Biological Control**: From Single Molecules to Degradomics, Portoroz (Slovenia). Oral co-presentation: J. Potempa, S.P. Manandhar, K. Wawrzonek, N. Mallorquí-Fernández, G. Mallorquí-Fernández, I. Usón, M. Solà, F.X. Gomis-Rüth, K.-A. Nguyen & L.N. Shaw: "Structure and function of streptopain (SpeB)-like protease from *Prevotella intermedia*". 23.06.2007 - 27.06.2007.
- **First Meeting of the Italian and Spanish Crystallographic Associations** (MISCA), Villaggio Guglielmo, Copanello di Stalettì (Italy). Attendance and poster presentation: N. Mallorquí-Fernández, S.P. Manandhar, G. Mallorquí-Fernández, I. Usón, M. Solà, J.

- Potempa & **F.X. Gomis-Rüth**: "A novel activation mechanism for cysteine proteases revealed by structural analyses of *P. intermedia* interpain A". 24.09.2007 - 28.09.2007.
- **5<sup>th</sup> General Meeting of the International Proteolysis Society**, Patras (Greece). Attendance and session co-chairman: "Insights into Protease Specificity, Mechanisms and Regulation". 20.10.2007 - 24.10.2007.
  - **Final Meeting of the European Project "CANCERDEGRADOME"**, Kranjska Gora (Slovenia). Attendance and poster presentation: N. Mallorquí-Fernández, S.P. Manandhar, G. Mallorquí-Fernández, I. Usón, M. Solà, J. Potempa & **F.X. Gomis-Rüth**: "A novel activation mechanism for cysteine proteases revealed by structural analyses of *P. intermedia* interpain A". 30.03.2008 - 01.04.2008.
  - 12<sup>th</sup> International Conference on the Crystallization of Biological Macromolecules (ICCBM12), Cancun (Mexico). Poster co-presentation: A. Marrero, T.O. Botelho, T. Guevara, R. García-Castellanos & **F.X. Gomis-Rüth**: "MecR1: The sensor transducer in antibiotic resistance. Analysis of the metalloprotease domain"(Poster #8). 02.05.2008 - 09.05.2008.
  - **Gordon Research Conference** on Proteolytic Enzymes and their Inhibitors, XV, Colby-Sawyer-College, New London, New Hampshire (USA). Attendance and (co-)presentation of 2 posters:  
N. Mallorquí-Fernández, S.P. Manandhar, G. Mallorquí-Fernández, I. Usón, M. Solà, J. Potempa & **F.X. Gomis-Rüth**: "A novel activation mechanism for cysteine proteases revealed by structural analyses of *P. intermedia* interpain A" (poster #24).  
M. Solà, G. Niemirowicz, D. Fernández, J.J. Cazzulo, F.X. Avilés & **F.X. Gomis-Rüth**. "The molecular analysis of *Trypanosoma cruzi* metallocarboxypeptidase 1 (TcMCP-1) provides insight into fold and substrate specificity" (poster #74). 06.07.2008 - 11.07.2008.
  - **XXXI<sup>th</sup> SEBBM Congress**, Bilbao, Spain. Attendance and poster presentation (#P12-9): N. Mallorquí-Fernández, S.P. Manandhar, G. Mallorquí-Fernández, I. Usón, M. Solà, J. Potempa & **F.X. Gomis-Rüth**: "A novel activation mechanism for cysteine proteases revealed by structural analyses of *P. intermedia* interpain A" (poster #24). 10.09.2008 - 13.09.2008.
  - **Gordon Research Conference** on Matrix Metalloproteinases, IX, Les Diablerets (Switzerland). Attendance, poster co-presentation: M. Gómez-Chiarri, D. Preston, S. Salger, C.F. Vaughn & **F.X. Gomis-Rüth**: "Genomic and functional characterization of an oyster MMP"; and invited talk: "Recent advances into metallocarboxypeptidase structures". 30.08.2009-04.09.2009.
  - **XXXII<sup>th</sup> SEBBM Congress**, Oviedo, Spain. Attendance, session co-chairman and invited talk at Symposium 3.1: "Biomedically relevant metallocarboxypeptidases: a structural view point". 23.09.2009-26.09.2009.
  - **Gordon Research Conference** on Proteolytic Enzymes and their Inhibitors, XVI, Il Ciocco, Lucca (Barga) (Italy). Attendance, session co-chairman and invited talk: "Structural Insights into biomedically relevant metallocarboxypeptidases". 02.05.2010 - 07.05.2010.
  - **Invited Talk**: "Structural Insights into biomedically relevant metallocarboxypeptidases". Prince Felipe Research Centre, Valencia (Spain). 21.05.2010.
  - **Workshop** "Structure and function from macromolecular crystallography: organization in space and time", Erice, Sicily (Italy). Poster co-presentation: J.L. Arolas, L. Sanglas, Z. Valnickova, F.X. Avilés, J.J. Enghild & **F.X. Gomis-Rüth**: "Insights into the structure of thrombin-activatable fibrinolysis inhibitor: implications for its biological function in hemostasis". 03.06.2010 - 13.06.2010.
  - **EMBO Meeting** 2010, Barcelona. Attendance. 04.09.2010 - 07.09.2010.
  - **Workshop** "Crystallography and Business. Pharmaceutical, alimentary and other applications". Faculty of Geology, University of Barcelona, Barcelona (Spain). Attendance and invited talk: "Introduction to X-ray crystallography and its application to proteins". 27.09.2010.
  - **Invited Talk**: "Recent advances in the structural analysis of metallopeptidases". Joint symposium focused on molecular and cellular structural biology and bioinformatics, Johannes-Gutenberg-University of Mainz, (Germany). 08.11.2010.
  - **Invited Talk**: "Structural analysis of proteins by X-ray crystallography: overview and its application to metallopeptidases". Department of Biochemistry and Molecular Biology, University of Valencia, Burjassot (Spain). 07.02.2011.
  - **Gordon Research Conference** on Matrix Metalloproteinases, X, Bryant University, Smithfield, Rhode Island (USA). Attendance, session chairman, and invited talk: "Recent advances in the structural characterization of metallopeptidases". 07.08.2011 - 12.08.2011.
  - **XXII<sup>th</sup> Congress** and General Assembly of the International Union of Crystallography, Madrid (Spain). Attendance and co-chairman of the micro-symposium "Dissecting enzyme mechanisms". 22.08.2011 - 30.08.2011.
  - **XXXIV<sup>th</sup> SEBBM Congress**, Barcelona. Attendance. 05.09.2011 - 08.09.2011.
  - **7<sup>th</sup> General Meeting of the International Proteolysis Society**, San Diego (USA). Co-presentation of poster: A.Y. Karim, M. Ksiazek, **F.X. Gomis-Rüth**, N. Cerdà-Costa, J.J. Enghild, I.B. Thogersen & J. Potempa: "Mechanism of prokarylysin latency and autoproteolytic processing". 16.10.2011 - 20.10.2011.
  - **Invited Talk**: "Molecular evolution in metallopeptidases and their inhibitors". Department of Biotechnology, Chemical Institute of Sarrià, Ramon Llull University, Barcelona (Spain). 18.11.2011.
  - **Invited Talk**: "Molecular evolution in metallopeptidases and their inhibitors". Biochemical Institute (Sonderforschungsbereich 877), Christian-Albrechts University of Kiel, Kiel (Germany). 22.11.2011.
  - **Alumni Symposium** - Protein Crystallography in Martinsried, its Beginnings, Maturation, Dissemination, and no End; Max-Planck Institute of Biochemistry (Martinsried, Germany). Attendance and invited talk: "Recent advances in the structural biology of proteolysis and its regulation". 18.02.2102 – 19.02.2012.
  - **Seminar** within the joint IRB/IBMB Structural and Computational Biology Programme, Barcelona Science Park: "Structure of human  $\alpha_2$ -macroglobulin". 21.03.2012.
  - **ASMS Conference on Mass Spectrometry and Allied Topics**, Vancouver Convention Centre (Vancouver, Canada). Co-presentation of poster (#2937): P.F. Huesgen, **F.X. Gomis-Rüth**, & C.M. Overall: "Ulliyisin as novel digestive enzyme for proteomics". 20.05.2012 - 24.05.2012.

- **Gordon Research Conference** on Proteolytic Enzymes and their Inhibitors, XVII, II Ciocco, Lucca (Barga, Italy). Attendance, poster presentation and two invited (co-)talks: **F.X.Gomis-Rüth**: "Insight into a molecular Venus flytrap: the structure of human methylamine-treated  $\alpha_2$ -macroglobulin"; and T. Jefferson, J.L. Arolas, T. Goulas, J. Bien, M. Caušević, U. auf dem Keller, O. Schilling, J.S. Bond, W. Bode, W. Stöcker, C.M. Overall, C.U. Pietrzik, T. Guevara, **F.X. Gomis-Rüth & C. Becker-Pauly**: "Structure and function of dimeric transmembrane meprin  $\beta$ : a sheddase of APP with possible functions in neurodegenerative disorders". Poster presentation (#73): J.L. Arolas, S. Trillo-Muyo, T.O. Botelho, A. Vilcinskas & **F.X. Gomis-Rüth**: "The structure of insect metalloproteinase inhibitor in complex with thermolysin reveals standard-mechanism inhibition in metallopeptidase 17.06.2012 – 22.06.2012.
- **Centennial Meeting of the Catalan Biological Society** I CIBICAT "Global questions on advanced biology", Institute for Catalan Studies, Barcelona (Spain). Attendance. 09.07.2012 – 12.07.2012.
- **Invited Talk**: "Structural biochemistry of proteolysis". Institute of Biotechnology, University of Helsinki, Helsinki (Finnland). 03.09.2012.
- **Invited Talk**: "Structural biochemistry of proteolysis in microbial virulence". Institute of Biochemistry, University of Gießen, Gießen (Germany). 11.10.2012.
- **Invited Talk**: "Structural insight into the inhibitory mechanism of  $\alpha_2$ -macroglobulin". University of Halle/Wittenberg, Halle (Germany), 18.3.2013.
- **Invited Talk**: "Proteolysis in cancer associated processes: a structural approach". Department of Molecular Biology, University of Salzburg, Salzburg (Austria), 8.4.2013.
- **Invited Talk**: "Structural insight into the Venus fly-trap inhibitory mechanism of the 720-KDa pan-proteinase  $\alpha_2$ -macroglobulin tetramer". National Center of Biotechnology, Madrid (Spain). 12.4.2013.
- **Gordon Research Conference** on Matrix Metalloproteinases, XI, II Ciocco, Lucca (Barga) (Italy). Attendance, session chair, and invited talk: **F.X.Gomis-Rüth**: "Structure of  $\alpha_2$ -macroglobulin, a Venus flytrap pan-protease inhibitor". 19.05.2013 - 24.05.2013.
- **FASEB Science Research Conference** on Proteases in Hemostasis and Vascular Biology, Sheraton Resort, Nassau (Bahamas). Attendance and invited talk: **F.X.Gomis-Rüth**: "Structural studies of human  $\alpha_2$ -macroglobulin, a pan-protease inhibitor from blood". 02.06.2013 – 07.06.2013.
- **XIII<sup>th</sup> Congress of the Spanish Biophysical Society**, València, Spain. Plenary Lecture of the Congress: **F.X.Gomis-Rüth**: "Structural insights into the Venus flytrap inhibitory mechanism of a 0,7MDa multimeric proteinase inhibitor". 19.06.2013-21.06.2013.
- **Symposium de Biologie Structurale - Institut de Biologie Structurale (IBS)**, Grenoble, France. Attendance and invited talk: **F.X.Gomis-Rüth**: "Structural biochemistry of metalloprotease regulation". 10.07.2013-12.07.2013.
- **XXXVI<sup>th</sup> SEBBM Congress**, Madrid, Spain. Poster copresentation: M. López-Pelegrín, N. Cerdà-Costa, Tibisay Guevera, **F.X. Gomis-Rüth & J.L. Arolas**: "A novel family of minimal gluzincins as soluble scaffolds for integral-membrane metallopeptidases". 03.09.2013-06.09.2013.
- **International Symposium on the Frontier between Cryo-EM and Protein Crystallography**, Getxo (Bilbao), Spain. Attendance and invited talk: **F.X.Gomis-Rüth**: "At the interface of EM and MX: Structural insight into the Venus flytrap inhibitory mechanism of a 0,7MDa multimeric proteinase inhibitor". 03.10.2013 – 04.10.2013.
- **Invited Talk**: "Implications of protein crystallography in biology/biomedicine". Research Institute of the Hospital of the Holy Cross and Saint Paul, Barcelona. 13.2.2014.
- **Conference Arthritis, Infections and Autoimmunity: Infections as an Etiological Factor in Chronic Inflammatory Disease**, Ustron (Poland). Attendance and invited talk: **F.X.Gomis-Rüth**: "A 0,7MDa multimeric proteinase inhibitor exhibits a unique Venus flytrap endopeptidase inhibitory mechanism." 04.03.2014 – 09.03.2014.
- **Invited Talk**: "Infection and proteolysis: a molecular approach." University of Hamburg (Germany). 13.03.2014.
- **Invited Talk**: "Function regulation in a minimal metamorphic metallopeptidase." Barcelona Supercomputing Center, Barcelona. 09.05.2014.
- **Conference The Protein Multiverse**, Madrid (Spain). Attendance and invited talk: **F.X.Gomis-Rüth**: "Reversible concentration-dependent oligomerization produces autoinhibition of a metamorphic metallopeptidase". 16.06.2014 – 17.06.2014.
- **Gordon Research Conference** on Proteolytic Enzymes and their Inhibitors, XVIII, II Ciocco, Lucca (Barga; Italy). Attendance and invited talk: **F.X.Gomis-Rüth**: "Reversible concentration-dependent oligomerisation regulates activity in a minimal metallopeptidase ". 22.06.2014 - 27.06.2014.
- **XIV<sup>th</sup> International Symposium on Proteinases, Inhibitors and Biological Control**, Portorož (Slovenia). Attendance and invited talk: **F.X.Gomis-Rüth**: "Insight into structure and function of a metamorphic transformer metallopeptidase". 06.09.2014 - 10.09.2014.
- B-Debate Conference "The Human Microbiome - Present Status and Future Prospects," Barcelona (Spain). Attendance. 02.07.2015 – 03.07.2015.
- **29<sup>th</sup> Annual Symposium of the Protein Society**, Barcelona (Spain). Attendance and chair of the session Current Morning Symposium 1 "Enzyme and Pathway Engineering." 22.07.2015 – 25.07.2015.
- **XXXVIII<sup>th</sup> SEBBM Congress**, València (Spain). Attendance and invited talk at Symposium 1.3: I. Garcia-Ferrer, P. Arêde, J. Gómez-Blanco, D. Luque, S. Duquerroy, J.R. Castón, T. Goulas & **F.X. Gomis-Rüth**: "Structural and functional insights into *Escherichia coli*  $\alpha_2$ -macroglobulin endopeptidase snap-trap inhibition". 07.09.2015 – 10.09.2015.
- **Invited Talk**: "Structural insights into the inhibitory trap mechanisms of  $\alpha_2$ -macroglobulins." Centro de Investigaciones Biológicas, Madrid. 15.12.2015.
- **33<sup>rd</sup> Winter School on Proteinases and Inhibitors**, Tiers (Südtirol). Attendance and chair of the session "Extracellular Matrix and Metalloproteinases." 24.02.2016 – 28.02.2016.

- **XXIII Workshop on Molecular Biology of the Catalan Biological Society**, Institute for Catalan Studies, Barcelona (Spain). Attendance and coorganization. 14.06.2016.
- **5<sup>th</sup> International Biophysics Congress**, Oporto (Portugal). Attendance and Manuel Rico/Bruker Award Lecture: F.X.Gomis-Rüth: "Molecular mechanisms of broad-spectrum endopeptidase inhibition by  $\alpha_2$ -macroglobulins". 15.06.2016-17.06.2016.
- B-Debate Conference "**The Barcelona Debates on the Human Microbiome — From Microbes to Therapeutics**," Barcelona (Spain). Attendance. 30.06.2015 – 01.07.2016.
- **XV<sup>th</sup> International Symposium on Proteinases, Inhibitors and Biological Control**, Portorož (Slovenia). Attendance and invited lecture: F.X.Gomis-Rüth: "Endopeptidase inhibition by  $\alpha_2$ -macroglobulins: Venus-flytrap or snap-trap mechanisms". 17.09.2016 - 21.09.2016.
- **BBVA Foundation - IRB Barcelona BioMed Conference "From genomes to structures: looking at big data with an atomic perspective"**, Institut d'Estudis Catalans, Barcelona. Attendance. 28.11.2016 - 30.11.2016.
- First Zing Conference on **Protein Secretion in Bacteria**, Sirata Beach Resort, Tampa (Florida, USA). Poster co-presentation (#48): Anna M. Lasica, Theodoros Goulas, Danuta Mizgalska, Mariusz Madej, Ky-Anh Nguyen, F. Xavier Gomis-Rüth & Jan Potempa: "PorZ – a novel component of type IX secretion system of oral pathogen *Porphyromonas gingivalis*". 09.11.2016-12.11.2016.
- **61<sup>st</sup> Annual Meeting of the Biophysical Society**, New Orleans (Louisiana, USA). Attendance. 11.02.2017 – 15.02.2017.
- **34<sup>th</sup> Winter School on Proteinases and Inhibitors**, Tiers (Südtirol). Attendance and Laudatio on occasion of the 75. Birthday of Wolfram Bode. 08.03.2017 – 12.03.2017.

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## STAYS IN RESEARCH CENTRES

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- **IQS** (Barcelona, Spain). Organic synthesis, separation of atropisomers, and conformational analysis of dibenzoazepinones. Master studies, 1988-1989 (9 months).
- **Max-Planck Institute of Biochemistry** (Martinsried/Munich, Germany). Biochemical and crystallographic studies of two enzymes: Dihydrodipicolinate synthase and astacin. Ph.D. studies. 1989-1992 (35 months).
- **Max-Planck Institute of Biochemistry** (Martinsried/Munich, Germany). Structural analysis by X-ray crystallography of the snake venom enzyme adamalysin II. Postdoctoral research. 1992 (3 months).
- **Max-Planck Institute of Biochemistry** (Martinsried/Munich, Germany). Crystallization of the ternary complex of bovine procarboxypeptidase A. Postdoctoral research. 1992 (2 months).
- **Institute of Fundamental Biology (UAB)** (Bellaterra, Spain). Structural analysis by X-ray crystallography of the ternary complex of bovine procarboxypeptidase A. Postdoctoral research. 1992-1995 (29 months).
- **Max-Planck Institute of Biochemistry** (Martinsried/Munich, Germany). Structural analysis by X-ray crystallography of the ternary complex of bovine procarboxypeptidase A. Guest. 1993 (9 months).
- **Max-Planck Institute of Biochemistry** (Martinsried/Munich, Germany). Structural analysis of proteolytic enzymes and their inhibitors by X-ray crystallography. Postdoctoral research. 1995-1996 (21 months).
- **Istituto di Strutturistica Chimica** (Monterotondo, Rome, Italy). Structural analysis of adamalysin II with peptidomimetic inhibitors by synchrotron radiation. Guest. 1997 (10 days).
- **DBE, IBMB** (Barcelona, Spain). Structural analyses of DNA-binding proteins and of proteolytic enzymes. Postdoctoral research. 1997-1999 (36 months).
- **DBE, IBMB** (Barcelona, Spain). Structure-function analyses of proteolytic enzymes and their inhibitors, and of microbial virulence and antibiotic resistance factors. PI at (Interim) Assistant, Associate, and Full Professor level. Since 2000.
- Visiting Scientist (several short stays) at the **European Molecular Biology Laboratory (EMBL)**, Grenoble (France). 2000-2003.