

VERONICA SAEZ-JIMENEZ

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CAREER OBJECTIVE

Working in an environment of growth and excellence, where I can enrich my knowledge and accomplish my goal to work in biotechnological research and develop a scientific career.

EDUCATION

- **Ph. D. in Biology** (1/2009-12/2015). Complutense University of Madrid (Spain).
 - Thesis: "Rational design of ligninolytic peroxidases".
 - Supervisors: Prof. Angel T. Martinez and Dr. Francisco J. Ruiz Dueñas
- **Postgraduate courses in Microbiology and Parasitology** (2009-2010)
 - Complutense University of Madrid (Spain).
- **Bachelor's degree in Biology** (Biotechnology branch) (9/2002-6/2008)
 - Complutense University of Madrid (Spain).
 - Final mark 2.24 (equivalent to UK upper second-class honours)
- **Secondary education**
 - Instituto La Inmaculada-Marillac, Madrid (Spain)
 - Branch: Science and Engineering. Qualification: Honors

PROFESSIONAL EXPERIENCE

- Aug. 2016-present. **Chalmers University of Technology**, Göteborg, Sweden
Post-Doc in the Division of Industrial Biotechnology
- Mar.-Jul 2016 **Biological Research Center (CIB, CSIC)**, Madrid, Spain
Post- Doc in the Biotechnology for Lignocellulosic Biomass Group
- 2009-2015. **Biological Research Center (CIB, CSIC)**, Madrid, Spain
Postgraduate fellow, Biotechnology for Lignocellulosic Biomass Group
Supervisors: Prof. Angel T. Martínez
- Mar.-May.'12 **Siena University**, Italy. Department of Biotechnology, Chemistry and Pharmacy
Characterization of peroxidases by electron paramagnetic resonance (EPR).
Supervisors: Prof. Rebecca Pogni.
- Jul.-Oct.'08 **Biological Research Center (CIB, CSIC)**, Madrid, Spain
Undergraduate fellow, research in plant viruses (PCR, ELISA, Western Blot). Supervisors:
Dr. Isabel García Luque

EXPERIENCE AND SKILLS

Scientific skills

- Strong molecular biology and protein biochemistry knowledge.
- Genetic engineering methods: PCR and site-directed mutagenesis.
- Protein expression in microbial hosts (e.g. *E. coli*).
- Protein purification by different chromatographic techniques (e.g. IEX, SEC).
- Reactivation of recombinant proteins by refolding *in vitro*.
- Enzyme kinetic assays employing UV-VIS spectroscopy and stopped-flow techniques.
- Stability studies of enzymes (pH, temperature, organic solvents)
- Protein structure analysis and homology modelling.

Additional skills

- Teamwork abilities: excellent interaction within large and multi-disciplinary teams.
- Problem solving and decision taking.
- Organizational skills.
- Effective communication skills (oral presentations and written reports).

LANGUAGES

- **Spanish:** Native language
- **English:** Level C1 (Cambridge English: Advanced)

PARTICIPATION IN RESEARCH PROJECTS

"Engineering ammonia lyases for novel bio-based microbial cell factory: first steps to green production of adipic acid"

Financing entity: The Swedish Research Council Formas

Principal Investigator: Prof. Lisbeth Olsson

"Novel and more robust fungal peroxidases as industrial biocatalysts" (PEROXICATS, www.peroxocats.org) (2010-2013)

Financing entity: European Commission via 7th Framework programme

Principal Investigator: Prof. Angel T. Martínez Ferrer

"Screening and engineering of new high redox-potential peroxidases" (2011-2014)

Financing entity: Spanish R&D National Plan

Principal Investigator: Dr. Francisco Javier Ruiz Dueñas

"Optimized oxidoreductases for medium and large scale industrial biotransformations" (INDOX, www.indox.org) (2013-2016)

Financing entity: European Commission via 7th Framework Programme

Principal Investigator: Prof. Angel T. Martínez Ferrer

"New oxidative Enzymes for Sustainable Industries" (2015-2018).

Financing entity: Spanish R&D National Plan

Principal Investigators: Dr. Francisco Javier Ruiz Dueñas and Dr. Susana Camarero

PUBLICATIONS

Sáez-Jiménez V., Rencoret J., Rodríguez-Carvajal M.A., Gutiérrez A., Ruiz-Dueñas F.-J., Martínez A.T. (2016)

Role of surface tryptophan for peroxidase oxidation of nonphenolic lignin.

Biotechnology for Biofuels 9, 198.

Sáez-Jiménez V., Acebes S., García-Ruiz E., Romero A., Guallar V., Alcalde M., Medrano F.J., Martínez A.T., Ruiz-Dueñas F.-J. (2016)

Unveiling the basis of alkaline stability of an evolved versatile peroxidase

Biochemical Journal, 473, 1917-1928

Sáez-Jiménez V., Baratto M.C., Pogni R., Rencoret J., Gutiérrez A., Santos J.I., Martínez A.T., Ruiz-Dueñas F.-J. (2015)

Demonstration of Lignin-to-Peroxidase Direct Electron Transfer: A Transient-state Kinetics, Directed Mutagenesis, EPR and NMR Study.

Journal of Biological Chemistry 290, 23201-23213.

Sáez-Jiménez V., Acebes S., Guallar V., Martínez A.T., Ruiz-Dueñas F.-J. (2015)

Improving the Oxidative Stability of a High Redox Potential Fungal Peroxidase by Rational Design.

PLoS ONE (2015)10 (4):e0124750.

Sáez-Jiménez V., Fernández-Fueyo E., Medrano F.J., Romero A., Martínez A.T., Ruiz-Dueñas F.-J. (2015)

Improving the pH-stability of versatile peroxidase by comparative structural analysis with a naturally-stable manganese peroxidase.

PLoS ONE, doi: 10.1371/journal.pone.0140984

Baratto M.C., Sinicropi A., Linde D., **Sáez-Jiménez V.**, Sorace L., Ruiz-Dueñas F.J., Martínez A.T., Basosi R., Pogni R. (2015)

Redox-Active Sites in *Auricularia auricula-judae* Dye-Decolorizing Peroxidase and Several Directed Variants: A Multifrequency EPR Study.

The Journal of Physical Chemistry, doi : 10.1021/acs.jpcc.5b02961.

Linde D., Pogni R., Cañellas M., Lucas F., Guallar V., Baratto M.C., Sinicropi A., **Sáez-Jiménez V.**, Coscolín C., Romero A., Medrano F.J., Ruiz-Dueñas F.J., Martínez A.T. (2015)

Catalytic surface radical in dye-decolorizing peroxidase : a computational, spectroscopic and site-directed mutagenesis study.

Biochemical Journal, 466, 253-262.

PRESENTATIONS IN CONFERENCES

Sáez-Jiménez V., Baratto M.C., Pogni R., Rencoret J., Gutiérrez A., Santos J.I., Ruiz-Dueñas F.J., Martínez A.T. Demonstration of the direct electron transfer between the polymer of lignin and the versatile peroxidase.

XVII Reunión de la Red LignoCel, Madrid, 2015. Oral Presentation

Sáez-Jiménez V., Martínez A.T., Ruiz-Dueñas F.J. Improving the oxidative stability of a fungal peroxidase by rational design.

Oxizymes, Vienna, 2014. Poster

Sáez-Jiménez V., Fernández-Fueyo E., Medrano F.J., Romero A., Martínez, A.T., F.J. Ruiz-Dueñas. pH stability improvement of a high redox-potential fungal peroxidase based on the analysis of stable peroxidases identified in genomes.

Ninth Annual DOE Joint Genome Institute User Meeting, Walnut Creek, California, 2014. Poster

Sáez-Jiménez V., Baratto M.C., Pogni R., Martínez Á.T., Ruiz-Dueñas F.J. Demonstration of lignosulfonates oxidation by versatile peroxidase from *Pleurotus eryngii*. In J.C. del Río, A. Gutiérrez, J. Rencoret and Á.T. Martínez, editors. (ISBN : 978-84-616-9842-4)

13th European Workshop on Lignocellulosics and Pulp (EWLP), Seville, Spain, 2014. Poster and book chapter.

Sáez-Jiménez V., Fernández-Fueyo E., Medrano F.J., Romero A., Martínez A.T., and Ruiz-Dueñas F.J. Improving pH-stability of model versatile peroxidase through the search for structural motifs in stable peroxidases from genomes.

12th European Conference on Fungal Genetics (ECFG12), Seville, Spain, 2014. Poster

Sáez-Jiménez V., Fernández-Fueyo E., Medrano F. J., Romero A., Martínez A.T., Ruiz-Dueñas F.J. Improving pH-stability of versatile peroxidase through search for stabilizing motifs in stable peroxidases from genomes.

XXXVI Congreso Sociedad Española de Bioquímica y Biología Molecular (SEBBM), Madrid, Spain, 2013. Oral Presentation

Sáez-Jiménez V., Fernández-Fueyo E., Medrano F. J., Romero A., Martínez A.T., Ruiz-Dueñas F.J. Improvement of the stability of the *Pleurotus eryngii* versatile peroxidase by rational design.

XVI Reunión de la Red Lignocel, Pontevedra, Spain, 2013. Oral Presentation

Morales M., Rencoret J., **Sáez-Jiménez V.**, Gutiérrez A., Martínez M.J., Martínez A.T., Ruiz-Dueñas F.J. Development of biocatalysts for treatment of complex phenolic mixtures based on fungal versatile peroxidase.

5th Congress of European Microbiologists (FEMS2013) Leipzig, Germany, 2013. Poster

Ruiz-Dueñas, F. J., Fernandez, E., **Sáez-Jiménez, V.**, Martínez, M. J., and Martínez, A. T. (2010) Hemeperoxidases in the *Pleurotus ostreatus* genome

Proc.LignoBiotech-1 Symp., Reims, France, 2010. Poster

Ruiz-Dueñas, F. J., Fernández, E., **Sáez-Jiménez, V.**, Martínez, M. J., and Martínez, A. T. Pleurotus hemeperoxidases of biotechnological interest: A complete inventory from the recently available *P. ostreatus* genome. In Feijoo, G. and Moreira, M. T., editors.

Oxidative enzymes as sustainable industrial biocatalysts, USC (ISBN-13: 978-84-614-2824-3), Santiago de Compostela, Spain, 2010. Poster and book chapter.