

CURRICULUM VITAE (October 2015)

Name: **Jorge** Surname: **Alonso-Gutiérrez**

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Current Position: **Project Scientist** at Joint Bioenergy Institute (JBEI/LBNL), Berkeley California

EDUCATION

University of Santiago de Compostela (Spain)/ CSIC (Spanish National Research Council) : PhD Microbiology (April 2009)

- Qualification: Sobresaliente *Cum laude*

University of Santiago de Compostela (Spain): Master of Science (July 2005);

- Qualification: Sobresaliente *Cum laude*

University of Leon (Spain) / University of Uppsala (Sweden); BSA Biology (June 2003);

- Qualification: **3.4 /4**

RELEVANT EXPERIENCE (reverse chronological order)

Keasling lab/LBNL(JBEI) (Berkeley, CA, USA) (2011-present)

Department: Physical Biosciences Division / Joint BioEnergy Institute (JBEI)

Experience in **metabolic engineering** of *E. coli* for advanced **biofuel** production, under the supervision of **Taek Soon Lee** and **Jay D. Keasling**

Biogrup. University of Santiago de Compostela (Spain) (2008-2010)

Department: Department of Chemical Engineering (School of Engineering)

“Instituto de Investigaciones Marinas” (IIM-CSIC (Spain)) (2003-2008)

Supervisor: Prof. Antonio Figueras

Department: Pathology of Marine Organisms; Spanish National Reference Laboratory for Mollusc Diseases.

University of Barcelona (Spain) (2005 (4 months))

Supervisor: Anna Maria Solanas

Department: Department of Microbiology (Faculty of Biology)

“National Institute of Technology and Evaluation” (NITE-Japan) 2006-2007 (6 months)

Supervisor: Prof. Shigeaki Harayama

Department: Biotechnology Department sited at the “Biotechnology Development Center” (NITE; Kisarazu-shi, Chiba, Japan)

LABORATORY EXPERIENCE

- **Culturing techniques** to isolate bacteria from different sources.
- **Molecular biology** techniques mainly related with metagenomics (nucleic acid extraction from different environmental matrices, PCR, RT-qPCR, cloning, sequencing, DGGE (Denaturing gradient gel electrophoresis)...).
- Phylogenetic analysis and **bioinformatics**.
- **Synthetic biology** and **Molecular Biology** techniques

- Cloning (Gibson, BioBrick, SOE-PCR, PCR, CPEC, Golden Gate)
- PCR, RT-PCR
- DGGE
- Chemical-/Electro-competent cell preparation and Transformation
- Primer design and combinatorial assembly using j5 software
- Codon optimization
- Chromosomal integration using recombination and CRISPR-Cas9 tools
- **Chromatography – Mass Spectrometry** techniques applied to **Proteomics** and **Metabolomics**
- Use of **mathematical models** to design new balanced-optimized pathways
- **FISH and CLSM** microscopy to study microbial biofilms
- **Fermentation**

PUBLICATIONS

<http://scholar.google.com/citations?user=1SLCnSgAAAAJ&hl=en>

Chubukov, V., Mingardon, F., Schackwitz, W., Baidoo, E. E. K., **Alonso-Gutierrez, J.**, Hu, Q, Lee, T.S., Keasling, J.D., Mukhopadhyay, A. (2015). Acute limonene toxicity in Escherichia coli is caused by limonene-hydroperoxide and alleviated by a point mutation in alkyl hydroperoxidase (AhpC). *Applied and Environmental Microbiology*, (in press), AEM.01102–15. doi:10.1128/AEM.01102-15

*George K. W., ***Alonso-Gutierrez, J.**, Keasling, J.D., Lee, T. S. (2015) Isoprenoid Drugs, Biofuels, and Chemicals - Artemisinin, Farnesene, and Beyond. Springer International Publishing Switzerland. *Advances in Biochemical Engineering / Biotechnology* 148: 469–469 doi: 10.1007/10_2014_288 (*authors contributed equally)

Alonso-Gutierrez, J., Kim, E.M., Batth, T.S., Cho, N., Hu, Q., Chan, L.J.G., Petzold, C.J., Hillson, N.J., Adams, P.D., Keasling, J.D., Garcia-Martin, H., Lee, T.S. (2014) Principal component analysis of proteomics (PCAP) as a tool to direct metabolic engineering. *Metabolic Engineering* 28: 123-133 doi: 10.1016/j.ymben.2014.11.011

Dahl, R.H., Zhang, F., **Alonso-Gutierrez, J.**, Baidoo, E., Batth, T.S., Redding-Johanson, A.M., Petzold, C.J., Mukhopadhyay, A., Lee, T.S., Adams, P.D., Keasling, J.D. (2013) Engineering dynamic pathway regulation using stress-response promoters. *Nature Biotechnology* 31(11): 1039-1046

Alonso-Gutierrez, J., Chan, R., Batth, T.S., Adams, P.D., Keasling, J.D., Petzold, C.J., Lee, T.S. (2013) Metabolic engineering of Escherichia coli for limonene and perillyl alcohol production. *Metabolic Engineering* 19: 33-41

Bokinsky, G., Baidoo, E.E., Akella, S., Burd, H., Weaver, D., **Alonso-Gutierrez, J.**, García-Martín, H., Lee, T.S., Keasling, J.D. (2013) HipA-triggered growth arrest and β -lactam tolerance in Escherichia coli are mediated by RelA-dependent ppGpp synthesis. *Journal of Bacteriology* 195 (14): 3173-3182

Regueiro, L., Veiga, P., Figueroa, M., **Alonso-Gutiérrez, J.**, Stams, A.J., Lema, J.M., Carballa, M (2012). Relationship between microbial activity and microbial community structure in six full-scale anaerobic digesters. *Microbiological Research* 167: 581– 589

Barcón, T., **Alonso-Gutiérrez, J.**, Omil, F. (2012) Molecular and physiological approaches to understand the ecology of methanol degradation during the biofiltration of air streams. *Chemosphere* 87 (10): 1179-1185

Alonso-Gutiérrez, J., Teramoto, M., Yamazoe, A., Figueras, A., Harayama, S. and Novoa, B. (2011) Alkane-degrading properties of Dietzia sp. H0B, a key player in the *Prestige* oil-spill biodegradation (NW-Spain). *Journal of Applied Microbiology* 111 (4): 800–810

Mery, C., Guerrero, L., **Alonso-Gutiérrez, J.**, Figueroa, M., Lema, J.M., Montalvo, S., Borja, R. (2012) Evaluation of natural zeolite as microorganism support medium in nitrifying batch reactors: influence of zeolite particle size. *Journal of environmental science and health, part A. Toxic/Hazardous Substance & Environmental Engineering* 47 (3): 420-427

Mery, C., Guerrero, L., **Alonso-Gutiérrez, J.**, Figueroa, M., Lema, J.M., Montalvo, S., Vidal, G. (2011) Application of

molecular biology techniques for the identification of microorganisms nitrifying and denitrifying attached on natural zeolite. *ADIS Journal of Engineering and Environmental Sciences: Research, Development and Practice*. Vol. **4**, N°1, 36-45.

Identificación de poblaciones microbianas mediante metodologías de biología molecular (2009) **Alonso-Gutiérrez, J.** In: *Tecnologías avanzadas para el tratamiento de aguas residuales*. Editor: Anuska Mosquera-Corral. ISBN-13:978-84-692-5028-0. Printed in Spain

Figueroa, M., **Alonso-Gutiérrez, J.**, Mosquera-Corral, A., Campos, J.L., Méndez, R. (2010) "Identificación de microorganismos implicados en la eliminación de nitrógeno en sistemas de tratamiento de aguas residuales mediante técnicas de biología molecular". *Tecnología del agua*, ISSN: 211-8173

Alonso-Gutiérrez, J. (2009) Metagenomic study of autochthonous bacterial communities at different marine ecosystems affected by the Prestige's oil spill in Galicia (NW-Spain). Biodegradation potential. En *Departamento de Microbiología e Parasitología* (<http://hdl.handle.net/10261/13573>). Santiago de Compostela: Universidade de Santiago de Compostela. p.208.

Alonso-Gutiérrez, J., Lekunberri, I., Teira, E., Gasol, J.M., Figueras, A. and Novoa, B. (2009) Bacterioplankton Composition of the Coastal Upwelling System of "Ría de Vigo", NW-Spain. *FEMS Microbiology Ecology* **70** (3): 161-173.

Poisa-Beiro, L., Dios, S., Ahmed, H., Vasta, G.R., Martínez-López, A., Estepa, A., **Alonso-Gutiérrez, J.**, Figueras, A. and Novoa, B. (2009) Nodavirus Infection of Sea Bass (*Dicentrarchus labrax*) Induces Up-Regulation of Galectin-1 Expression with Potential Anti-Inflammatory Activity. *Journal of Immunology*. **183**(10): 6600-6611.

Alonso-Gutiérrez, J. Figueras, A., Albaigés, J., Jiménez, N., Viñas, M., Solanas, A.M. and Novoa, B. Bacterial Communities from Shoreline Environments ("Costa da Morte" (NW-Spain)) Affected by the *Prestige* Oil-Spill. (2009) *Applied and Environmental Microbiology* **75** (11): 3407-3418.

Costa, M.M., Dios, S., **Alonso-Gutiérrez, J.**, Romero, A., Novoa, B. and Figueras, A. (2009) Evidence of high individual diversity on Myticin C in mussel (*Mytillus galloprovincialis*) *Developmental and Comparative Immunology* **33**: 162-170.

Alonso-Gutiérrez, J., Costa, M.M., Figueras, A., Albaigés, J., Viñas, M., Solanas, A.M. and Novoa, B. (2008) *Alcanivorax* strain detected among the cultured bacterial community from sediments affected by the Prestige oil-spill. *Marine Ecology-Progress Series* **362**: 25-36.