



DATOS PERSONALES

Apellidos y Nombre

MATEOS DELGADO, LUIS MARIANO

Departamento

BIOLOGÍA MOLECULAR

Área de Conocimiento

Microbiología

Dirección Postal

UNIVERSIDAD DE LEÓN
FACULTAD DE CC BIOLÓGICAS Y AMBIENTALES
Departamento de BIOLOGÍA MOLECULAR

Email

lmmatd@unileon.es

Teléfonos de contacto

987 291126

EXPERIENCIA DOCENTE

"EDUCATION, ACADEMIC AND RESEARCH CAREER"

"? 1979 ? 1984: Studies in Biological Sciences" (obtención Licenciatura).

"· 1985 - Defence of the Grade" (Tesina de Licenciatura)

"? 1985 ? 1990: PhD studies in Molecular Biology of corynebacteria" (realización de Tesis Doctoral)

"? 1989 ? 1990: Scientific Researcher, BIOPROCES S.A." (Responsable de Investigación de la empresa Bioproces SA)

"? 1991 ? 1992: Assistant Professor in the Area of Microbiology; Univ. León, Spain" (Profesor Ayudante, Univ. León)

"? 1993 ? onwards: Lecturer Professor in the Area of Microbiology, Univ. León, Spain" (Profesor Titular Universidad, León)

"? 2012 ?Acreditación? from ANECA for full Professor Position" (Obtención de acreditación por la ANECA para Catedrático de Universidad).

"RESPONSIBILITIES AT THE UNIVERSITY"

"Practical and Conventional Classes" (profesor de prácticas y de clases teóricas en los años y cursos que se indican)

"? 1986?1992:"

"Practical Lab. courses on General Microbiology, Biotechnology of microorganisms, Virology,"

"Immunology and Genetic Engineering of Microorganisms."

"? 1993?onwards:"

Professor in charge of the following courses (licenciaturas and grades):

"General Microbiology"

"Microbial Biotechnology"

"Virology"

"Genetic Engineering of microorganisms"

"Fundamentals of applied Microbiology"

"Microbial diversity"

? 1993?1997

? Professor of Master studies: ?Máster Universitario en Investigación en Biología Fundamental y Biomedicina? subject: Genetic engineering?
(<http://www.unileon.es/estudiantes/estudiantes?master/oferta?titulaciones/mu?metodologiainvestigacion?biologia?biomedicina/plan?estudios?id=0212013&curso=2013>)

? Professor of subjects from the Doctorate Program.

Secretary of the Department: ?Ecology?Genetic?Microbiology?; Univ. of León (1993-1997)

? 2007?2009

Academic Responsible of the Students Mobility Program (ERASMUS?AMICUS), Fac. Biology and Environmental Sciences, Univ. León (Spain)

? 2011?2013

Academic Responsible of the Students Mobility Program AMICUS, Fac. Biology and Environmental Sciences, Univ. León (Spain).

? 10 Master thesis?s were defended under my promotorship

? Currently, the student Brandan pedre is performing the PhD under my supervision in collaboration with Doctors Messens and Van Molle (Brussels?Belgium)Mentorship Erasmus students

? Mentor of 4 bachelor student (two AMICUS and two Erasmus)

LÍNEAS DE INVESTIGACIÓN

RESEARCH PROJECTS WITH OFFICIAL FUNDING durind the last 10 years)

* Ministerio de Ciencia y Tecnología?FEDER. 1FD97?1861?C02?02. 2000?2001. Caracterización de cepas de bacterias lácticas como starters y probióticos de interés en la industria agroalimentaria. Investigador principal: Luis M. Mateos

* Proyecto de la Universidad de León ULE2001?03. Años 2001?2002 Caracterización molecular y aislamiento de la vía de biosíntesis de carotenos en la corinebacteria *Brevibacterium linens*. Investigador principa: Luis M. Mateos

* Junta de Castilla y León. LE28/01. Años 2001?2003. Caracterización de genes del cluster dcw de corinebacterias: una aproximación experimental al diseño de nuevos agentes antimicrobianos. Investigador principal: Jose A. Gil Santos

* Junta de Castilla y León. LE23/02. Años 2002?2003. ?Estudios moleculares de bacterias lácticas de carácter probiótico?. Investigador principal: Jose M. Castro Gonzalez

* Ministerio de Ciencia y Tecnología. BIO2002?03223. 2003?2005. Caracterización de genes del cluster dcw de corinebacterias: una aproximación

experimental al diseño de nuevos agentes antimicrobianos. Investigador principal: Jose A. Gil Santos

* Diputación Provincial de León: 2004/120. 2004-2006. Caracterización fenotípica y genotípica de microorganismos difteromorfos emergentes aislados de muestras clínicas del hospital de León. Investigador principal: Luis M. Mateos

Instituto Tecnológico Agrario de Castilla y León (Junta de Castilla y León). LE02/2005. 2005-2006. Riesgos sanitarios en la reutilización de aguas residuales en agricultura. Investigador principal: Eloy Bécares Mantecón

* Junta de Castilla y León. LE14/04 2004-2005. Desarrollo y evaluación de un sistema de separación basado en una bacteria recombinante para concentrar diversas especies de arsénico. Investigador principal: Abundio Javier Aller/Luis M. Mateos

* Ministerio de Educación y Ciencia: BIO2005-02723. 2006-2008. Sistemas moleculares de detoxificación de arsénico por *Corynebacterium glutamicum* y desarrollo de cepas para la acumulación del metaloide. Investigador principal: Luis M. Mateos

* Junta de Castilla y León. LE 2007-2009. Genes implicados en el crecimiento polar de *Corynebacterium glutamicum*: posibles dianas antimicrobianas. Investigador principal: Jose A. Gil Santos

* Ministerio de Ciencia e Innovación. 2009-2011. Mecanismos regulatorios y genes implicados en el proceso de elongación/división celular de *Corynebacterium glutamicum*. Investigador principal: Jose A. Gil Santos

* Proyecto de cooperación internacional HOA (Horizontal Onderzoeksactie action). Bruselas (Bélgica). 2010-2011. Mycothiol redox pathways in Actinobacteria, and beyond. Investigador principal: Joris Messens (Univ. Libre Bruselas).

* Junta de Castilla y León. LE028A10-2. 2010-2011. De la genética de la resistencia a arsénico en corinebacterias a la búsqueda de dianas implicadas en estrés oxidativo en corinebacterias y en micobacterias. Investigador principal: Luis M. Mateos.

PEER REVIEWED PUBLICATIONS (last 10 years)

* Ramos A, Honrubia MP, Valbuena N, Vaquera J, Mateos LM and Gil J.A. 2003. Involvement of DivIVA in the morphology of the rod-shaped actinomycete *Brevibacterium lactofermentum*. *Microbiology*, 149. 3531-3542.

* Ramos A, Letek M, Campelo AB, Vaquera J, Mateos LM and Gil JA. 2005. Altered morphology produced by ftsZ expression in *Corynebacterium glutamicum* ATCC 13869. *Microbiology*. 151, 2563-2572.

* Ordonez E, Letek M, Valbuena N, Gil JA, Mateos LM. 2005. Analysis of genes involved in arsenic resistance in *Corynebacterium glutamicum* ATCC 13032. *Applied and Environmental Microbiology*. 71, 6206-6215.

* Letek M, Valbuena N, Ramos A, Ordóñez E, Gil JA and Mateos L.M. 2006. Characterization and use of catabolite-repressed promoters from gluconate genes in *Corynebacterium glutamicum*. *Journal of Bacteriology*. 188: 409-423.

* Valbuena N, Letek M, Ramos A, Ayala J, Nakunst D, Kalinowski J, Mateos LM and Gil J.A. 2006.

Morphological changes and proteome response of *Corynebacterium glutamicum* to a partial depletion of FtsI. *Microbiology*. 152, 2491-2503.

* Mateos LM, Ordóñez E, Letek M and Gil JA. 2006. *Corynebacterium glutamicum* as a model bacterium for the bioremediation of arsenic. *International Microbiology*. 9, 207-215.

* Letek M, Ordóñez E, Fernández-Natal I, Gil JA and Mateos LM. 2006. Identification of the emerging skin pathogen *Corynebacterium amycolatum* using PCR amplification of the essential *divIVA* gene as a target. *FEMS Microbiology Letters*. 265, 256-263.

* Feo JC, Ordóñez E, Letek M, Castro MA, Muñoz MI, Gil JA, Mateos LM and Aller AJ. 2007. Retention of inorganic arsenic by coryneform mutant strains. *Water Research*. 41, 531-542.

* Valbuena N, Letek M, Ordóñez E, Ayala J, Daniel R, Gil JA and Mateos LM. 2007. Characterization of HMW-PBPs from the rod-shaped actinomycete *Corynebacterium glutamicum*. *Molecular Microbiology* 66: 643-657.

Letek M, Ordóñez E, Fiuza M, Honrubia-Marcos P, Vaquera J, Gil JA, and Mateos LM. 2007. Characterization of the promoter region of *ftsZ* from *Corynebacterium glutamicum* and controlled overexpression of FtsZ. *International Microbiology*. 10:271-282.

* Letek M, Fiuza M, Ordóñez E, Villadangos AF, Ramos A, Mateos LM and Gil JA. 2008. Cell growth and cell division in the rod-shaped actinomycete *Corynebacterium glutamicum*. *Antonie Van Leeuwenhoek*. 94:99-109.

* Letek M, Ordóñez E, Vaquera J, Margolin W, Flärdh K, Mateos LM, Gil JA. 2008. *DivIVA* is required for polar growth in the *MreB*-lacking rod-shaped actinomycete *Corynebacterium glutamicum*. *J Bacteriol*. 190:3283-3292.

* Fiuza M, Canova MJ, Zanella-Cléon I, Becchi M, Cozzone AJ, Mateos LM, Kremer L, Gil JA, Molle V. 2008. From the characterization of the four serine/threonine protein kinases (PknA/B/G/L) of *Corynebacterium glutamicum* toward the role of PknA and PknB in cell division. *Journal of Biological Chemistry*. 283:18099-112.

* Ordóñez E, Thiyagarajan S, Cook JD, Stemmler TL, Gil JA, Mateos LM, Rosen BP. 2008. Evolution of metal(loid) binding sites in transcriptional regulators. *Journal of Biological Chemistry*. 283:25706-14.

* Fiuza M, Canova MJ, Patin D, Letek M, Zanella-Cléon I, Becchi M, Mateos LM, Mengin-Lecreux D, Molle V, Gil JA. 2008. The MurC ligase essential for peptidoglycan biosynthesis is regulated by the serine/threonine protein kinase PknA in *Corynebacterium glutamicum*. *Journal of*

Biological Chemistry. 283:36553?63.

* Ordóñez E, Van Belle K, Roos G, De Galan S, Letek M, Gil JA, Wyns L, Mateos LM, Messens J. 2009. Arsenate reductase, mycothiol, and mycoredoxin concert thiol/disulfide exchange.

Journal of Biological Chemistry. 284:15107?16.

* Letek M, Fiuza M, Ordóñez E, Villadangos AF, Flärdh K, Mateos LM, Gil JA. 2009. DivIVA uses an N-terminal conserved region and two coiled-coil domains to localize and sustain the polar growth in *Corynebacterium glutamicum*. FEMS Microbiology Letters. 297:110?6.

* Fu HL, Meng Y, Ordóñez E, Villadangos AF, Bhattacharjee H, Gil JA, Mateos LM, Rosen BP. 2009. Properties of arsenite efflux permeases (Acr3) from *Alkaliphilus metalliredigens* and *Corynebacterium glutamicum*. Journal of Biological Chemistry. 284:19887?95.

* Villadangos AF, Ordóñez E, Muñoz MI, Pastrana IM, Fiuza M, Gil JA, Mateos LM, Aller AJ. 2010. Retention of arsenate using genetically modified coryneform bacteria and determination of arsenic in solid samples by ICP-MS. Talanta. 80:1421?7.

* Fiuza M, Letek M, Leiba J, Villadangos AF, Vaquera J, Zanella-Cléon I, Mateos LM, Molle V, Gil JA. 2010. Phosphorylation of a novel cytoskeletal protein (RsmP) regulates rod-shaped morphology in *Corynebacterium glutamicum*. Journal of Biological Chemistry. 285:29387?97.

* Villadangos AF, Van Belle K, Wahni K, Tamu Dufe V, Freitas S, Nur H, De Galan S, Gil JA, Collet JF, Mateos LM and Messens J. 2011. *Corynebacterium glutamicum* survives arsenic stress with arsenate reductases coupled to two distinct redox mechanisms. Molecular Microbiology. 82:998?1014.

* Mateos LM. 2011. (Spanish) El arsénico, ese conocido tan desconocido. Ambiciencias. N°7, 40?55. Area de publicaciones Universidad de León. ISSN: 1988?3021.

* Villadangos AF, Fu HL, Gil JA, Messens J, Rosen BP and Mateos LM. 2012. The efflux permease CgAcr3?1 of *Corynebacterium glutamicum* is an arsenite-specific antiporter. Journal of Biological Chemistry. 287:723?735.

* Letek M, Fiuza M, Villadangos AF, Mateos LM and Gil JA. 2012. Cytoskeletal proteins of Actinobacteria. International Journal of Cell Biology. 2012:905832.

* Ordóñez E, Villadangos AF; Fiuza, M, Pereira FJ, Gil JA, Mateos LM and Aller J. 2012. Modelling of arsenate retention from aqueous solutions by living coryneform double-mutant bacteria. Environmental Chemistry. 9, 121?129.

* Van Laer K, Buts L, Foloppe N, Vertommen D, Van Belle K, Wahni K, Roos G, Nilsson L, Mateos LM, Rawat M, Van Nuland NAJ and Messens J. 2012. Mycoredoxin?1 is one of the missing links in the oxidative stress defense mechanism of *Mycobacterium tuberculosis*. Molecular Microbiology. 86: 787?804.

* Van Laer K, Dziewulska AM, Fislage M, Wahni K, Hbeddou A, Collet JF, Versées W, Mateos

LM, Tamu?Dufe V Messens J. 2013. Mycobacterium tuberculosis and Corynebacterium glutamicum NrdH?redoxins form dimers at high protein concentration and exclusively receive electrons from thioredoxin reductase. Journal of Biological Chemistry. 288: 7942?55.

Villadangos AF, Ordoñez E, Pedre B, Messens J, Gil JA and Mateos LM. Genetic Engineering of Corynebacterium glutamicum for improving arsenic uptake and accumulation. Appl Microbiology and Biotechnology (Under revision).

Mateos LM, Villadangos AF, Ordoñez E, Letek M, Rosen BP, Messens J and Gil JA. Arsenicresistance and accumulation in corynebacteria; a detailed revision. Metallomics. Under revision.

PHD THESIS'S PROMOTORSHIP

Author: Jose Antonio Oguiza Tomé

Title: "Mecanismos moleculares de control transcripcional en Brevibacterium lactofermentum".

Defence Date: February 1996; Grade: Apto "Cum laude".

Honors and awards: Especial prize of Doctorate

Author: Agustín Pisabarro Perez

Title: "Biología molecular de Rhodococcus fascians: análisis del genoma y determinantes genéticos de la fasciación"

Defence Date: July 1997; Grade: Apto ?Cum Laude?

Author: Noelia Valbuena Crespo

Title: ?Proteínas de unión a penicilinas de alto peso molecular (HMW?PBPs) en Corynebacterium glutamicum ATCC 13032: caracterización génica y funcional?

Defence Date: June 2005; Grade: Apto "Cum laude".

Honor and awards: European Doctorate with Quality

Author: Michal Letek Polberg

Title: ?Implicación de la proteína divIVA en el crecimiento polar de Corynebacterium glutamicum?

Defence Date : May 2007; Grade: Apto "Cum laude".

Honors and awards: (i) Special prize of Doctorate; (ii) Accesit for the prize ?Fundación Carolina Rodriguez?; (iii) European Doctorate with Quality

Autor: Efrén Ordoñez del Amo

Título: ?Mecanismos moleculares implicados en la resistencia a arsénico en Corynebacterium glutamicum?

Defence Date: June 2009; Calificación: Apto "Cum laude".

Honors and awards: European Doctorate with Quality

Author: Maria Fiuza

Title: ?Caracterización de las serín/treonín proteín kinasas de Corynebacterium glutamicum y papel en los procesos de división y biosíntesis de peptidoglicano?

Defense Date: May 2010; Calificación: Apto "Cum laude".

Honors and awards: (i) Special prize of Doctorate; (ii) Accesit for the prize ?Fundación Carolina Rodriguez?; (iii) European Doctorate with Quality

Autor: Almudena Fernandez Villadangos

Título: ?Implicación de las arsenito permeasas y arseniato reductasas de Corynebacterium glutamicum en los procesos biológicos de desintoxicación de arsénico?

Defence Date: June 2011; Grade: Apto "Cum laude".

Honors and awards: (i) Special prize of Doctorate; (ii) Accesit for the prize ?Fundación Carolina Rodriguez?; (iii) European Doctorate with Quality; (iv) Special prize ?Juan Abello Pascual? from the Royal Spanish Academy of Doctors

Author: Brandán Pedre Perez. Under elaboration process

HONORS AND AWARDS

? Poster award during the 4th International Congress on Arsenic in the Environment Understanding the Geological?Medical Interface of Arsenic.

Cairns, Australia, 22?27 July

2012

? Jury member and examiner of 2 international PhD theses (outside from Spain)