CURRÍCULUM VÍTAE NORMALIZADO

Ana Isabel Rodríguez Rosado

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Summary of CV

This section describes briefly a summary of your career in science, academic and research; the main scientific and technological achievements and goals in your line of research in the medium -and long- term. It also includes other important aspects or peculiarities.

Highly skilled biotech professional with extensive project managing experience in the academic and private sector. Interested in Microbiology and bacterial antibiotic acquisition. I began my carreer as a scientist while finishing my bachelor's degree of Biology in the University of Seville. I was a helper student in the department of microbiology doing work about symbiosis between plants and microorganisms.

After taking some courses of project management and entrepeneurship in biotechnology, I moved to the company Microal and worked in their QC department. Then I decided to continue my formation and moved to Barcelona to complete a master program in pharmaceutical biotechnology with practical training at the IUCT and the biotech company ADL Bionatur, working in a GMP compliance environment.

Afterwards, I completed 2 training periods in neuroscience at the Charité Hospital in Berlin, and in bacterial enzymes at the University of Postdam, Germany. At this point in my career I decided to do the PhD and joined a Master Program of molecular biology, biomedicine, and clinical research of the University of Seville. First, I focussed my research on protein quality control in eukaryotes at Vait Goder's lab in the department of Genetics, during the Master training period for 2 years. Then, I moved to Jesus Blázquez's lab at the Institute of Biomedicine of Seville, where I have completed my PhD research on pathogenesis and acquisition of antibiotic resistance of bacteria. I have focused the experimental work of my PhD thesis in understanding the mechanisms underliying bacterial evolution to antibiotic resistance from two different approaches:

- From a basic-research approach recombination and horizontal gene transfer (HGT) are mechanisms which drive bacterial evolution. The first part of my thesis is focused in understanding the molecular bases of hyperrecombination in commensal E. coli bacteria and its impact on antibiotic resistance emergence, and the role of HGT in transmission of those antimicrobial resistances.
- From a clinical approach, the second part of my work was dedicated to the characterization of three compounds, already used in clinics, as adjuvants in antibiotic treatment to avoid antibiotic resistance bacteria resulting.

Ana Isabel Rodríguez Rosado

Surname(s): **Rodríguez Rosado**
Name: **Ana Isabel**
ORCID: **0000-0003-3970-9925**

Current professional situation

Employing entity: Vaxdyn SL **Type of entity:** Business
Professional category: Post-Doctoral researcher
Start date: 21/02/2019
Type of contract: Temporary employment contract **Dedication regime:** Full time
Primary (UNESCO code): 241501 - Molecular biology of micro-organisms
Secondary (UNESCO code): 241201 - Antigens; 241202 - Antibodies; 241206 - Immunisation; 241210 - Vaccines
Performed tasks: Design and follow-up of research strategies for immunotherapies development. Design of experimental procedures and execution schedule. Monitoring of the development of planned activities.
Identify key words: Biomedicine; Molecular biology; Bacteriology

Previous positions and activities

	Employing entity	Professional category	Start date
1	FUNDACION PUBLICA ANDALUZA PARA LA GESTION DE LA INVESTIGACION EN SALUD DE SEVILLA	PhD student	05/03/2014
2	Eniversity of Seville	Research assistant	01/07/2011
3	Biorganic Reseacrh Solutions. ADL Bionatur	Trainee student	01/11/2010

1 **Employing entity:** FUNDACION PUBLICA ANDALUZA PARA LA GESTION DE LA INVESTIGACION EN SALUD DE SEVILLA
Department: Enfermedades Infecciosas y del sistema inmunitario, INSTITUTO DE BIOMEDICINA DE SEVILLA
City employing entity: Sevilla, Andalusia, Spain
Professional category: PhD student **Educational Management (Yes/No):** No
Start-End date: 05/03/2014 - 13/03/2017 **Duration:** 3 years - 8 days
Type of contract: Temporary employment contract
Primary (UNESCO code): 240900 - Genetics; 241401 - Antibiotics; 241402 - Bacterial physiology; 241404 - Bacteriology; 241501 - Molecular biology of micro-organisms
Performed tasks: Understanding the molecular bases promoting bacterial evolution is crucial to fight the emergence of antibiotic resistances. Mechanisms such mutation, recombination and horizontal gene transfer (HGT) are key drivers of that process. The experimental part of my thesis is

focused on: 1) Understanding the impact of high recombinant rates on the emergence of antibiotic resistances in Escherichia coli as a model of Gram-negative bacteria 2) Analyze the effect of antibiotic treatment on bacterial conjugation and its consequences on the spreading of antimicrobial resistances 3)Characterization of three compounds, already used in the clinic, as adjuvants of antibiotic treatments to inhibit the appearance of antibiotic resistant bacteria.
Field of management activity: Public Research Body

2 **Employing entity:** Eniversity of Seville **Type of entity:** University Department
Department: Departamento de Genética, Universidad de Sevilla
City employing entity: Sevilla, Andalusia, Spain
Professional category: Research assistant **Educational Management (Yes/No):** No
Start-End date: 01/07/2011 - 31/12/2012 **Duration:** 1 year - 6 months
Type of contract: Temporary employment contract
Dedication regime: Full time
Primary (UNESCO code): 230227 - Proteins; 240300 - Biochemistry; 240702 - Cell genetics; 241410 - Mycology (yeasts); 241501 - Molecular biology of micro-organisms
Performed tasks: Development of genetic screen to identify novel cellular components involved in Endoplasmic Reticulum Associated Degradation (ERAD) of GPI- anchored proteins using the yeast S. cerevisiae as a model organism
Field of management activity: University

3 **Employing entity:** Biorganic Reseacrh Solutions. ADL Bionatur **Type of entity:** Business
Professional category: Trainee student
Start-End date: 01/11/2010 - 31/03/2011 **Duration:** 5 months
Performed tasks: Development of Quality Control protocols in manufacturing of biopharmaceuticals with the baculovirus expression vector technology under GMP environment. Specifically, development and validation of techniques for detection of the presence of inteferent viruses able to compete with the working viral banks. The methods were based on PCR, Nested PCR, and quantitative PCR. Standard Operating Procedures were implemented after development and alidation of the methods, and included as part of the manufacturing process of a production plant of the company.

Education

University education

1st and 2nd cycle studies and pre-Bologna degrees

1 **University degree:** 2nd cycle
Name of qualification: Máster Universitario en Genética Molecular y Biotecnología
City degree awarding entity: Sevilla, Andalusia, Spain
Degree awarding entity: Universidad de Sevilla **Type of entity:** University
Date of qualification: 15/01/2013

2 **University degree:** 1st Cycle
Name of qualification: Licenciado en Biología
City degree awarding entity: Sevilla, Andalusia, Spain
Degree awarding entity: Universidad de Sevilla **Type of entity:** University
Date of qualification: 17/01/2007

Doctorates

Doctorate programme: Doctor en Programa Oficial de Biología Molecular, Biomedicina e Ivestigación Clínica
Degree awarding entity: Universad de Sevilla **Type of entity:** University
City degree awarding entity: Sevilla, Andalusia, Spain
Date of degree: 29/01/2019
Thesis title: "Bases moleculares de la virulencia y la resistencia a antibióticos en Escherichia coli: mutación, recombinación y transferencia horizontal"
Thesis director: Jesús Blázquez Gómez
Thesis co-director: Jerónimo Rodríguez Beltrán
Obtained qualification: Sobresaliente Cum Laude

Other postgraduate university studies

Type of education: Masters
Postgraduate qualification: Master of Sciene in Advanced Biotechnology applied to Pharmaceutical Industry
City degree awarding entity: Barcelona, Catalonia, Spain
Degree awarding entity: Inkemia IUCT **Type of entity:** Business
Date of qualification: 08/2010
Standardised degree: No

Specialised, lifelong, technical, professional and refresher training (other than formal academic and healthcare studies)

Training title: Certificación de Capaciotación A, B y C de experimentación animal. Roedores y Lagomorfos.
Awarding entity: Consejería de Agricultura y Pesca **Type of entity:** Junta de andalucía
End date: 21/12/2016

Language skills

Language	Listening skills	Reading skills	Spoken interaction	Speaking skills	Writing skills
English	C1	C1	C1	C1	C1

Scientific and technological experience

Scientific or technological activities

R&D projects funded through competitive calls of public or private entities

1 **Name of the project:** Bases Moleculares de la adquisición de resistencias a antibióticos por hipermutación e hiperrecombinación en cepas patógenas y comensales de Escherichia coli. Búsqueda y caracterización de inhibidores de la mutación y recombinación.
Identify key words: Antibiotics; Drug resistance; Laboratoy animals; Molecular evolution; Molecular genetics; Bacteriology
Identify key words: Antibiotics; Drug resistance; Laboratoy animals; Molecular evolution; Molecular genetics; Bacteriology
Type of project: Basic research (including archaeological digs, etc) **Geographical area:** National
Degree of contribution: Researcher
Entity where project took place: INSTITUTO DE BIOMEDICINA DE SEVILLA **Type of entity:** State agency
City of entity: Sevilla, Andalusia, Spain
Name principal investigator (PI, Co-PI....): Jesús Blázquez Gómez; Ana Isabel Rodríguez Rosado
Nº of researchers: 2 **Nª people/year:** 1
Type of participation: Team member
Name of the programme: Una Manera de hacer Europa
Code according to the funding entity: FIS PI13/02043
Start-End date: 01/01/2014 - 30/09/2018 **Duration:** 4 years - 8 months
Total amount: 285.863 €
Relevant results: Description of a resistance mechanisims to Fluoroquinolones trought spontaneous point mutations that increases bacterial recombination rates. Characterization of two bacterial mutation inhibitors and proposal of use as adjuvants in antibiotic treatment.
Dedication regime: Full time

2 **Name of the project:** Conexión entre ERAD y Fusión de Membranas
Identify key words: Stability and folding/ unfolding of proteins; Molecular genetics
Identify key words: Stability and folding/ unfolding of proteins; Molecular genetics
Type of project: Basic research (including archaeological digs, etc)
Geographical area: National
Degree of contribution: Researcher
Entity where project took place: Departamento de Genéica. Universidad de Sevilla
Type of entity: University Department
City of entity: Sevilla, Andalusia, Spain
Name principal investigator (PI, Co-PI....): Veit Goder; Ana Isabel Rodríguez Rosado; Natalia Sikorska
Nº of researchers: 3
Nª people/year: 3
Type of participation: Team member
Name of the programme: Plan Nacional 2009
Code according to the funding entity: BFU2009-07290
Start-End date: 01/01/2010 - 31/12/2012
Duration: 3 years
Total amount: 157.300 €
Relevant results: Development of a ueast-based genetic screen to find novel cellular components involved in Endoplasmic Reticulum (ER) associated degradation of GPI-anchored proteins
Dedication regime: Full time

Scientific and technological activities

Scientific production

Publications, scientific and technical documents

1; Ana I. Rodríguez Rosado; Estela Y. Valencia; Alejandro Rodríguez Rojas; Coloma Costas; Rodrigo S. Clhardo; Jerónimo Rodríguez Beltrán. N-acetylcysteine blocks SOS induction and mutagenesis produced by fluoroquinolones in Escherichia coli.researh article. 74 - 8, pp. 2188 - 2196. Journal of Antimicrobial Chemotherapy, 01/08/2019.
Type of production: Scientific paper
Format: Journal
Position of signature: 1
Degree of contribution: Author or co-author of scientific or technical document for the general public
Total no. authors: 7
Corresponding author: No

Works submitted to national or international conferences

1 **Title of the work:** Effect of N-Acetyl-Cysteine (NAC) on antibiotic mediated bacterial mutagenesis
Name of the conference: XI meeting of Molecular Microbiology.
City of event: Sevilla, Andalusia, Spain
Date of event: 2016
Organising entity: SOCIEDAD ESPAÑOLA DE MICROBIOLOGIA
Jesús Blázquez; Ana I. Rodríguez Rosado; Estela Y. Valencia; Coloma Costas; Rodrigo S Glhardo; Jerónimo Rodríguez Beltrán. "Poster".

2 **Title of the work:** A yeast-based screen to identify cellular components involved in ERassociated degradation of GPI-anchored proteins
Name of the conference: The EMBO Conference: The physiology of the endoplasmic reticulum (ER): Function and dysfunction. Girona, Spain. 2012
City of event: Girona, Catalonia, Spain
Date of event: 2012
Organising entity: EMBO
Ana I. Rodríguez Rosado; Veit Goder. "Poster".

3 **Title of the work:** A yeast-based screen to identify cellular components involved in ERassociated degradation of GPI-anchored proteins
Name of the conference: XIV Congreso de la Sociedad Española de Biologia Celular.
City of event: Málaga, Andalusia, Spain
Date of event: 2011
Organising entity: SOCIEDAD ESPAÑOLA DE BIOLOGIA CELULAR
Ana I. Rodríguez Rosado; Veit Goder. "Poster".

Other achievements

Stays in public or private R&D centres

1 **Entity:** INSTITUTO DE BIOMEDICINA Y BIOTECNOLOGIA DE CANTABRIA **Type of entity:** State agency
Faculty, institute or centre: Reseach centre
City of entity: Santander, Cantabria, Spain
Start-End date: 01/09/2015 - 15/10/2015 **Duration:** 1 month - 15 days
Goals of the stay: Doctorate
Provable tasks: study of the effect of antibiotics on bacterial conjugation using spectrophotometric techniques

2 **Entity:** Department of Molecular enzymology **Type of entity:** University Department
Faculty, institute or centre: University of Pstdam
City of entity: Potsdam, Brandenburg - Südwest, Germany
Primary (UNESCO code): 230200 - Biochemistry; 230208 - Co-enzymes; 230209 - Enzymology
Start-End date: 01/01/2011 - 30/06/2011 **Duration:** 3 months
Goals of the stay: scholarship own university plan
Provable tasks: Expression of different polymorphisms of human Aldehyde Oxidase. Purification of active enzymes by using FPLC and several chromatographic methods in order to characterize parameters like activity levels, metal content and assembly

3 **Entity:** Department for Psycosomatic Medicine.
Faculty, institute or centre: Charité Centre for Internal Medicine and Dermatology
City of entity: Berlin, Berlin, Germany
Start-End date: 01/08/2010 - 15/11/2010 **Duration:** 3 months - 15 days
Goals of the stay: European Practical period
Provable tasks: Assistance in research about regulation of food intake in mammals. Training in preparation of immunohistological specimens: preparation and embedding of rat brains, cutting of tissue by cryostat, immunohistochemistry, as well as the preparation and assistance of animal experimentation (transcardial perfusions, behavior experiments on food intake and stereotactic procedures in rats)

Obtained grants and scholarships

1 **Name of the grant:** Leonardo da Vinci Internship. Programa TARTESSOS II
Aims: Improvement of professional and linguistic skills during stays in EU countries
Awarding entity: Instituto Andaluz de la Mujer **Type of entity:** State agency
Conferral date: 01/08/2011 **Duration:** 3 months - 15 days
End date: 15/11/2011

2 **Name of the grant:** Beca ESINNOVA 2007. Programa Practiquemos III
Aims: Innovation and modernization plan of Andalusia which aims to encourage the spirit and entrepreneurial training of candidates
Awarding entity: Consejería de Innovación Ciencia y Empresa **Type of entity:** State agency
End date: 17/08/2008
Entity where activity was carried out: The program was developed through the following training activities: 1) Training in business creation: business ideas, market analysis, offer design, marketing plan, economic-financial viability, lega