RESUME

Joana Marques

PhD

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EXPERIENCE

2009-2011 **UNIVERSITAT DE BARCELONA**

RESEARCH ASSOCIATE

Genetic characterization of the genes encoding enzymes involved in core lipopolysaccharide (LPS) biosynthesis in four *Proteus spp.* strains selected on the basis of their peculiarities in core LPS chemical structure.

Publications:

Functional identification of the *Proteus mirabilis* core lipopolysaccharide biosynthesis genes. *Journal of Bacteriology 192: 4413-4424 (2010)*. E. Aquilini, J. Azevedo, N. Jiménez, L. Bouamama, J. M. Tomás, and M. Regué. (IF=3.1)

Three enzymatic steps required for the galactosamine incorporation into core lipopolysaccharide. *Journal of Biological Chemistry 285: 39739-39749 (2010).* E. Aquilini, J. Azevedo, S. Merino, N. Jiménez, J.M. Tomás, and M. Regué. (IF=4.2)

2011-2015 **IBEC & ISGLOBAL, BARCELONA**

PHD STUDENT

Exploration of sulfated polysaccharides as antimalarials and as targeting molecules for nanovector-mediated antimalarial drug delivery to *Plasmodium*-infected cells.

Publications:

Adaptation of targeted nanocarriers to changing requirements in antimalarial drug delivery. *Nanomedicine 13(2) :515-525 (2016).* J. Marques, JJ. Vale-Delgado, P. Urbán, E. Baró, R. Prohens, A. Mayor, P. Cisteró, M. Delves, RE. Sinden, C. Grandfils, JL. de Paz, JA. García-Salcedo, and X. Fernàndez-Busquets. (IF=6.9)

Marine organism sulfated polysaccharides exhibiting significant antimalarial activity and inhibition of red blood cell invasion by *Plasmodium*. *Scientific Reports 6:24368 (2016).* J. Marques, E. Vilanova, PA. Mourão, and X. Fernàndez-Busquets. (IF=5.5)

Application of heparin as a dual agent with antimalarial and liposome targeting activities toward *Plasmodium*-infected red blood cells. *Nanomedicine 10: 1719-1728 (2014).* J. Marques, E. Moles, P. Urban, R. Prohens, M.A. Busquets, C. Sevrin, C. Grandfils, and X. Fernandez-Busquets. (IF=6.9)

Heparin micropatterning onto fouling-release perfluoropolyether-based polymers via photobiotin activation. *Colloids and Surfaces B: Biointerfaces 146:250-9 (2016).* C. Credi, C. de Marco, E. Molena, M. Pla Roca, J. Samitier, J. Marques, X.

ABOUT ME

Cooperative nature, dedicated, sociable, motivated, responsible and independent. Capacity to learn and improve other languages, to work with other people, to be in multicultural environments.

PROFESSIONAL SKILLS

Cell Culturing	■ ■ ■ ■ ■ ■
Microscopy	■ ■ ■ ■ ■ □
Cytometry	■ ■ ■ □ □ □
Anopheles Rearing	■ ■ ■ ■ ■ □
Lab Animal Work	■ ■ ■ ■ □ □
Molecular Biology	■ ■ ■ ■ □ □

LANGUAGES

Portuguese	■ ■ ■ ■ ■ ■
English	■ ■ ■ ■ ■ □
Spanish	■ ■ ■ ■ ■ ■

PATENT

Heparin-lipidic nanoparticle conjugates. Inventors: Fernàndez-Busquets, X., Marques, J., Moles, E. Institutions: IBEC, CRESIB. *Application number: EP13152187.4*; priority countries: Europe; priority date: January 22, 2013.

INTERNSHIP

March to June 2014 – Imperial College, UK

"Targeting of *Plasmodium* transmission stages with polymers-FITC for future antimalarial delivery strategies". The main objective of this project was to explore if glycosaminoglycans can also be active targeting agents against gametocytes, ookinetes, sporozoites, and oocysts.

Fernàndez-Busquets, M. Levi, and S. Turri. (IF=4.3)

Use of poly(amidoamine) drug conjugates for the delivery of antimalarials to *Plasmodium*. *Journal of Controlled Release 177:84-95 (2014).* P. Urban, JJ. Valle-Delgado, N. Mauro, J. Marques, A. Manfredi, M. Rottmann, E Ranucci, P. Ferruti, and X. Fernandez-Busquets. (IF=7.6)

Nanotools for the delivery of antimicrobial peptides. *Current Drug Targets 13, 1158-1172 (2012)*. P. Urbán, J. Valle-Delgado, E. Moles, J. Marques, C. Díez and X. Fernàndez-Busquets. (IF=3.3)

2016-2018 **IHMT, LISBOA**

POST-DOCTORAL FELLOW

Identification of a peptide in human blood that promotes female mosquito reproduction. Test whether it can be added to artificial diets to improve mosquito breeding in the laboratory for studying vector-borne diseases like malaria. The human peptide activates a so-called G protein-coupled receptor in the mosquito, which somehow triggers reproduction.

Main techniques used:

Anopheles gambiae microinjection
Anopheles gambiae dissection
RNA extraction
cDNA synthesis
RT-PCR for gene expression evaluation

ORAL PRESENTATIONS

Workshop NOVA/INSA de doenças transmitidas por vectores. 26 September 2016, Lisboa, Portugal. Dieta artificial complementada com um factor de sangue humano.

ISGlobal Seminars 2015. 22 July 2015, Barcelona, Spain. Exploration of sulfated polysaccharides as antimalarials and as targeting molecules for nanovectors-mediated drug delivery to Plasmodium-infected cells.

ISGlobal - CREAL 1st PhD Symposium 2014. 13 November 2014, Barcelona, Spain. Application of heparin as a dual agent with antimalarial and liposome targeting activity towards *Plasmodium*-infected red blood cells.
(Best oral presentation award)

9th Annual BioMalPar I EVIMalaR Conference. 14 May 2013, Heidelberg, Germany. Nanovectors for antimalarial targeted drug delivery.
(Turbo-talk)

DIPLOMA

2004-2008 **DIPLOMA**
UNIVERSIDADE CATÓLICA PORTUGUESA, ESB
Degree in Microbiology
(average classification: 14 on a 1 to 20 scale)

2008-2009 **DIPLOMA**
UNIVERSITAT DE BARCELONA, PHARMACY FACULTY
Master in Drug Research, Development and Control
(average classification: 8.6 on a 1 to 10 scale)

2011-2015 **DIPLOMA**
UNIVERSITAT DE BARCELONA
International PhD in Biotechnology
(*Cum laude*)

REFERENCES

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Research Associate, IBEC
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