CV of the experienced researcher

Personal Information

Name:	Mara BALDRY
Date and place of Birth:	25/08/1982, Volos, Greece
Nationality:	British and Dutch
Current place of work:	L'Institut Pasteur Lille, France
Current position:	Scientific Manager
Current Address:	15 Rue de Jeanne Maillotte – Batiment Aurelia 1- C15, Apt 102
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Professional Experience

01/03/2020 – Present

Scientific Manager at L'Institut Pasteur de Lille (FR)

European Grant H2020 – FAIR – Flagellin Aeorosol Therapy as an Immunomodulatory Adjunct to the Antibiotic Treatment of Drug-Resistant Bacterial Pneumonia.

01/09/2016 – 31/12/2019

Postdoctoral Researcher at the University of Copenhagen (DK)

"Targeting Amyloids to Combat Bacterial Biofilms (TAMBAC)". An interdisciplinary project looking at *Staphylococcus aureus* amyloid forming proteins and their role in biofilm integrity. Aiming to develop methods to re-sensitise antibiotic-recalcitrant biofilms by targeting biofilm-stabilising amyloids.

01/10/2012 - 21/05/2016

Early Stage Researcher at the University of Copenhagen (DK)

Marie Curie fellow within the initial training network TRAIN-ASAP (Training and Research Aimed at Novel Antibacterial Solutions in Animals and People; www.train-asap.eu)

"Anti-virulence therapy targeting *Staphylococcus aureus*".

Development of a proof-of-concept for anti-virulence therapy against the opportunistic pathogen *Staphylococcus aureus* as an alternative treatment option for Methicillin-Resistant *S. aureus* infections.

- Involved two secondments (NAICONS SrI in Milan, IT and Wageningen University, NL)
- Involved one research stay abroad at Chiba University Hospital, Chiba, JP.

15/07/2008 - 20/09/2012

Clinical Trial Monitor and Local Drug Safety Officer (GR)

Merck A.E. Hellas; Novartis Hellas SACI; Pfizer Hellas A.E.

- Responsible for Phase III and Phase IV studies on the indications of assisted reproductive therapy, multiple sclerosis, specialty care (transplantation, respiratory and infectious diseases), acromegaly, growth hormone deficiency, age-related macular degeneration, breast cancer and melanoma.
- Pharmacovigilance local qualified person acting as Local Drug Safety Officer, and management of Deputy LDSO.
- Responsibilities included training health care professionals in clinical trial execution under ICH-GCP guidelines, clinical study design, SOP creation, reporting to health and ethics authorities, study group updates, clinical trial budgeting amongst others.

01/02/2005 – 24/05/2007

Master student in Biomedical Sciences at the Leiden university Medical Centre (NL)

Major project (12 months): "Protection of transplanted β-cells using viral immune evasion strategies". Setting-up the proof-of-principle pilot studies for this highly multidisciplinary project involving the

application of viral immune evasion strategies to protect transplanted insulin-producing β-cells from recipient graft-rejection for the treatment of Type 1 diabetes.

Minor Project (6 months): "The effects of maggot excretory/secretory products and antimicrobial peptides on cells of the immune system". Characterisation of immunomodulatory and wound-healing properties of maggot secretory/excretory products within the therapeutic area of Type 2 diabetic foot ulcer treatment.

Education and specialised courses/certifications

01/10/2012 - 21/05/2016
PhD in Molecular Bacteriology and Infection, University of Copenhagen, DK.

01/02/2005 – 24/05/2007
MSc in Biomedical Sciences, Leiden university Medical Centre, Leiden, NL.

01/09/2000 – 12/07/2004
BSc with Honours in Microbiology and Medical Biosciences, University of Kent, UK.

Specialised courses and certifications:

- An introduction to Global Health, by University of Copenhagen on Coursera (7 week course completed in May 2016).

With this course an overview of the most important health challenges facing the world today was provided, along with how these challenges have shaped global health and its future. Importantly international strategies and programs promoting human health were introduced together with the key actors in global health governance. As antimicrobial resistance is one such challenge, this course helped provide transferable knowledge on the necessary initiatives to be taken on all levels to ensure human health, that can be implemented in the attached proposal (e.g. education, policies and guidelines for appropriate use, target audiences etc.)

- ICH-GCP, by Pfizer, Novartis and Merck.

Extensive training on ICH-GCP (the harmonised guideline for Good Clinical Practice) was provided as adjusted to each sponsor's standards. ICH-GCP is an international ethical and scientific quality standard for the design, conduct, performance, monitoring, auditing, recording, analyses and reporting of clinical trials, that also serves to protect the rights, integrity and confidentiality of trial subjects. This knowledge is vital for the translation of the proposed project's findings to clinical application.

- Laboratory animal science certification - Article 9 (Felasa C).

In an intensive course (8-19 May, 2006), knowledge was obtained on the design of ethically, legally and scientifically appropriate animal experiments. Handling animals was a major aspect of this course. This certification qualifies me to perform all aspects (from planning and implementation to data analysis and reporting) related to the animal experiments that are a major constituent of the proposed project.

List of Publications

1. Gless BH, Bojer MS, Peng P, **Baldry M**, Ingmer H, Olsen CA. Identification of autoinducing thiodepsipeptides from staphylococci enabled by native chemical ligation. **Nature Chemistry**. 2019; 11:463-9. doi: 10.1038/s41557-019-0256-3. **IF: 26.2**
   Contribution: Performed experiments.
2. da Silva PM, **Baldry M**, Peng P, de Oliveira Silva JN, Soares T, Brayner FA, Alves LC, Feitosa APS, Paiva PMG, Ingmer H, Napoleão TH. *Punica Granatum* sarcotesta lectin (PgTeL) impairs growth, structure, viability, aggregation, and biofilm formation ability of *Staphylococcus aureus* clinical isolates. **Int J Biol Macromol**. 2019; 123:600-8. doi: 10.1016/j.ijbiomac.2018.11.030. **IF: 3.9**
   Contribution: Conceptualised study and performed experiments.
3. **Baldry M,** Nakamura Y, Nakagawa S, Frees D, Matsue H, Núñez G, Ingmer H. Application of an agr-specific anti-virulence Compound as Therapy for Staphylococcus Aureus-induced Inflammatory Skin Disease. **J Infect Dis**. 2018. doi: 10.1093/infdis/jiy259. **IF: 5.2**
   Contribution: Conceptualised study, performed the experiments, and wrote the manuscript.
4. Hansen AM, Peng P, **Baldry M**, Perez-Gassol I, Christensen SB, Vinther JMO, Ingmer H, Franzyk H. Lactam hybrid analogues of solonamide B and autoinducing peptides as potent *S. aureus* AgrC antagonists. **Eur J Med Chem**. 2018; 152:370-6. doi: 10.1016/j.ejmech.2018.04.053. **IF: 4.8**

Contribution: Conceptualised study, performed experiments, reviewed and edited the manuscript.

5. Karathanasi G, Bojer MS, **Baldry M**, Johannessen BA, Wolff S, Greco I, Kilstrup M, Hansen PR, Ingmer H. Linear peptidomimetics as potent antagonists of *Staphylococcus aureus* agr quorum sensing. **Sci Rep.** 2018; 8:3562. doi: 10.1038/s41598-018-21951-4. **IF: 4.1**
   Contribution: Conceptualised study, performed experiments, reviewed and edited the manuscript.
6. **Baldry M,** Nielsen A, Bojer MS, Zhao Y, Friberg C, Ifrah D, Glasser Heede N, Larsen TO, Frøkiær H, Frees D, Zhang L, Dai H, Ingmer H. Norlichexanthone Reduces Virulence Gene Expression and Biofilm Formation in Staphylococcus aureus. **PLoS One**. 2016; 11:e0168305. doi: 10.1371/journal.pone.0168305. **IF: 2.9**
   Contribution: Conceptualised study, performed the experiments, and wrote the manuscript.
7. Canovas J, **Baldry M**, Bojer MS, Andersen PS, Grzeskowiak PK, Stegger M, Damborg P, Olsen CA, Ingmer H. Cross-Talk between Staphylococcus aureus and Other Staphylococcal Species via the agr Quorum Sensing System. **Front Microbiol.** 2016;7:1733. eCollection 2016. **IF: 4.0**
   Contribution: Co-first authorship, conceptualised study, performed experiments, and wrote the manuscript.
8. **Baldry M**, Kitir B, Frøkiær H, Christensen SB, Taverne N, Meijerink M, Franzyk H, Olsen CA, Wells JM, Ingmer H. The agr Inhibitors Solonamide B and Analogues Alter Immune Responses to Staphylococccus aureus but Do Not Exhibit Adverse Effects on Immune Cell Functions. **PLoS One**. 2016; 11:e0145618. doi: 10.1371/journal.pone.0145618. **IF: 2.9**
   Contribution: Conceptualised study, performed experiments, and wrote the manuscript.
9. BR Kitir, **Baldry M**, Ingmer H, Olsen CA. Total synthesis and structural validation of cyclodepsipeptides Solonamide A and B. **Tetrahedron** 2014; 70:7721-32. **IF: 2.4**
   Contribution: Conceptualised study, performed experiments, reviewed and edited the manuscript.
10. van der Plas MJ, **Baldry M**, van Dissel JT, Jukema GN, Nibbering PH. Maggot secretions suppress pro-inflammatory responses of human monocytes through elevation of cyclic AMP. **Diabetologia**. 2009; 52:1962-70. doi: 10.1007/s00125-009-1432-6. **IF: 6.02**
    Contribution: Conceptualised study, performed the experiments, reviewed and edited the manuscript.
11. van der Plas MJ, van der Does AM, **Baldry M**, Dogterom-Ballering HC, van Gulpen C, van Dissel JT, Nibbering PH, Jukema GN. Maggot excretions/secretions inhibit multiple neutrophil pro-inflammatory responses. **Microbes Infect.** 2007; 9:507-14. **IF: 2.9**
    Contribution: Conceptualised study, performed the experiments, reviewed and edited the manuscript.

Research monographs and chapters

1. Bojer MS, **Baldry M**, Ingmer H. Protocols for Screening Antimicrobial Peptides That Influence Virulence Gene Expression in Staphylococcus aureus. **Methods Mol Biol**. 2017;1548:387-94.
2. **Baldry M.** PhD Thesis 2016©. Anti-virulence Therapy Targeting Staphylococcus aureus. ISBN:978-87-93476-01-1

Publications in international congresses

- 8th Congress of European Microbiologists (**FEMS2019**). 07-11/07/19, Glasgow. "*Staphylococcus* aureus Phenol Soluble Modulins: Role in amyloid formation and biofilm." (Poster Presentation)
- International Symposium on Staphylococci & Staphylococcal Infections 2018 (**ISSSI18**). 23-26/08/18, Copenhagen. "Challenges in bacterial amyloid detection: Do *Staphylococcus aureus* phenol soluble modulins truly form amyloid fibrils in biofilms?". (Poster Presentation)
- **Eurobiofilms 2017**. 19-22/09/17, Amsterdam. "Seeing (Congo) Red: Methods for amyloid detection in *Staphylococcus aureus* biofilms". (Poster Presentation)
- **"Staphylococcal Diseases" Gordon Research Conference (2017)**. 06-11/08/17, Waterville Valley. "Exploiting S. aureus AgrC-binding promiscuity to control agr-induced virulence". (Poster Presentation)
- **ICOHAR**-International Conference on One Health Antibiotic Resistance (2015). 30/09 – 02/10/15, Copenhagen. "Solonamide B and analogues are promising candidates for anti-virulence therapy against *Staphylococcus aureus*". (Poster Presentation)
- 6th Congress of European Microbiologists (**FEMS2015**). 07-11/06/15, Maastricht. "Characterising the *Staphylococcus aureus* anti-virulence candidate Solonamide B and its lactam analogues". (Poster Presentation)

- International Symposium on Staphylococci & Staphylococcal Infections 2014 (**ISSSI14**). 26-29/08/2014, Chicago. "An in vitro assessment of host immune and component interaction profile of the *Staphylococcus aureus* anti-virulence candidates Solonamide B and derivatives". (Poster Presentation)

Invited presentations

- "Targeting the Staphylococcus aureus Agr Quorum Sensing System: Understanding and scrambling communication to reduce virulence". **Institut Pasteur de Lille**, France (16th July 2019).
- "Decoding the Language of Bacteria". ESOF – 2014 **Copenhagen Euroscience Open Forum**.

Reviewer experience

- Active reviewer for Scientific Reports – Nature
- Active reviewer for the Journal of Dermatological Science

Major Collaborations

- Hanne Ingmer, Section for Food Safety and Zoonosis, SUND, University of Copenhagen,
- Daniel Otzen, Brian S. Vad and Rikke Louise Meyer, iNANO, Aarhus University.
- Christian A. Olsen, Section for Medicinal Chemistry, SUND, University of Copenhagen,
- Jerry Wells, Host-Microbes Interactomics Group, Wageningen University, the Netherlands
- Yumi Nakamura, Department of Dermatology, Chiba University Hospital, Chiba, Japan
- Peter H. Nibbering, Department of Infectious Diseases, LUMC, The Netherlands

Prizes and Awards

- **Seal of Excellence of Marie Sklodowska Curie Actions for** the project 843930, IDEA: The Role of Immune Defences in the Efficacy of Antibiotics in Bacterial Pneumonia.
- ***Zoetis* Excellence Award** for recognition of the most innovative and impactful research within the Marie Curie TRAIN-ASAP consortium.

Funding

- *C5A1801-CS STaRS AJCA; DRESS-2019-016602 (IDEA project from 01/03/2020 to 28/02/2022)*
- *DFF-The Independent Research Fund Denmark (TAMBAC project from 01/09/2016 to 31/12/2019).*
- *European Union's Seventh Framework Program grant number 289285 (Early Stage Researcher Fellowship in the TRAIN-ASAP ITN from 01/10/2012 to 21/05/2016).*
- *The Dutch Diabetes Research Foundation (MSc Major and Minor projects from 01/07/2005 to 01/03/2007).*

Supervising and Mentoring Activities

- Project responsible and supervisor for **five MSc** students (2013-2019), **one PhD** student (2016-2019) and **one research assistant** (2019) (6 years in total).
- Teacher in the course "Microbial Food Safety" for Veterinary BSc students (4 years in total).

Core Skills and Techniques

Languages: British (Fluent); Greek (Fluent); Dutch (Proficient); Danish (Proficient); French (Basic)

Administrative/Organisational:

- Independent initiation of new collaborations with groups previously not associated with current work place (e.g. Chiba University, JP).
- Planning, chairing and organising research group meetings.
- PhD spokesperson responsible for organising meetings, events and representing fellow PhD students to management boards.
- Clinical Trial project administration, management, and training.

Technical:

- Primary cell isolation and culture (PBMCs, DCs, Neutrophils, Mast cells, HUVECs, mouse islets)
- Microbial cell culture (Staphylococcal spp. including *Staphylococcus aureus*, Bacillus spp., Actinomycetes, Enterococcal spp., *Escherichia coli*).
- Flow cytometry.
- Microscopy (LSCM, TEM, Polarised light).
- Assays: stimulation, differentiation, modulation, angiogenesis, toxicity, biofilm, reporters.
- Molecular techniques (Q-PCR, cloning, lentiviral transfection, general transduction).
- Phenotypic and genotypic characterisation of microorganisms.
- Antibiotic resistance profiling.
- *In vivo* models of infection and inflammation (murine models and *Galleria Mellonella* wax moth larvae model).