
NAME: ISABEL MARIA DOS SANTOS LEITÃO COUTO

CURRENT POSITION: Associate Professor, Unit of Medical Microbiology, Instituto Higiene e Medicina Tropical, Universidade NOVA de Lisboa (IHMT NOVA)

CONTACTS: Unidade Microbiologia Médica, Instituto de Higiene e Medicina Tropical (IHMT NOVA)

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HIGHEST DEGREE:

Ph.D., Biology - Molecular Biology, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa (1997).

AREA OF SCIENTIFIC ACTIVITY

- . Characterization of antibiotic and biocide resistance mechanisms in staphylococci.
- . Efflux driven antimicrobial resistance in bacteria
- . Molecular detection of pathogenic bacteria, including drug resistant staphylococci and mycobacteria.

R&D Unit

- . Member of the Global Health and Tropical Medicine (GHTM) R&D Unit at IHMT NOVA
- . Coordinator of the TB, HIV and Opportunistic Diseases and Pathogens (THOP) Research Group at GHTM

PARTICIPATION IN R&D PROJECTS

- **As coordinator:** 6 funded projects, 1 as co-PI
- **As team member:** Participated to date in over 25 R&D projects with both national and international research teams.

• **ResearcherID:** I-2640-2012

• **Scopus Author ID:** 55916738200

• **ORCID iD:** 0000-0003-3536-2733

PEER-REVIEWED PUBLICATIONS

- Author of **113** papers in international journals with peer-review (*total Scopus citations: >5,600; h-index: 42*)
- Author of **11** book chapters (8 international, 3 national editions)

PUBLICATIONS FROM THE LAST YEARS

Arez AP, A Souto, M da Silva, CRS do Nascimento, **I Couto**, S Belo, N Lima (2024) Biobanking for tropical health: leveraging collaborative initiatives in the Lusophone world. *Front. Trop. Dis* 5:1438842. doi: 10.3389/fitd.2024.1438842

Garrine M, M Andrade, J Neves, I Mandomando, **I Couto**, SS Costa (2024) Exploring the virulence potential of *Staphylococcus aureus* CC121 and CC152 lineages related to paediatric community-acquired bacteraemia in Manhiça, Mozambique. *Sci Rep.* 2024 May 10;14(1):10758. doi: 10.1038/s41598-024-61345-3.

Garrine, M, SS Costa, A Messa, S Massora, D Vubil, S Ácacio, T Nhampossa, Q Bassat, I Mandomando, **I Couto** (2023). Antimicrobial resistance and clonality of *Staphylococcus aureus* causing bacteraemia in children admitted to the Manhiça District Hospital, Mozambique, over two decades. *Front Microbiol.* 2023 Jul 24;14:1208131. doi: 10.3389/fmicb.2023.1208131.

Leal M, C Morais, B Ramos, C Pomba, P Abrantes, SS Costa, **I Couto** (2023) Exploring efflux as a mechanism of reduced susceptibility towards biocides and fluoroquinolones in *Staphylococcus pseudintermedius*. *Animals (Basel).* 2023 Apr 6;13(7):1270. doi: 10.3390/ani13071270.

Morais C, SS Costa, M Leal, B Ramos, M Andrade, C Ferreira, P Abrantes, C Pomba, I Couto (2023) Genetic diversity and antimicrobial resistance profiles of *Staphylococcus pseudintermedius* associated with skin and soft-tissue

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- infections in companion animals in Lisbon, Portugal. *Front Microbiol.* 2023 14:1167834. doi: 10.3389/fmicb.2023.1167834
- Garrine M, L Quintó, SS Costa, A Messa, AJ Massinga, D Vubil, T Nhampossa, S Massora, S Ácacio, A Cossa, B Sigaúque, Q Bassat, **I Couto**, I Mandomando (2023) Epidemiology and clinical presentation of community-acquired *Staphylococcus aureus* bacteraemia in children under 5 years of age admitted to the Manhica District Hospital, Mozambique, 2001–2019. *Eur J Clin Microbiol Infect Dis.* 42, 653–659. doi: 10.1007/s10096-023-04580-2
- Ferreira C, P Abrantes, SS Costa, M Viveiros and **I Couto** (2022) Occurrence and Variability of the Efflux Pump Gene *norA* across the *Staphylococcus* Genus. *Int J Mol Sci*, 23(23), 15306. doi: 10.3390/ijms232315306.
- Andrade M, K Oliveira, C Morais, P Abrantes, C Pomba, AE Rosato, **I Couto**, SS Costa (2022) Virulence Potential of Biofilm-Producing *Staphylococcus pseudintermedius*, *Staphylococcus aureus* and *Staphylococcus coagulans* causing Skin Infections in Companion Animals. *Antibiotics* 11 (10):1339. doi: 10.3390/antibiotics11101339.
- Costa SS, R Ribeiro, M Serrano, K Oliveira, C Ferreira, M Leal, C Pomba, **I Couto**. (2022) *Staphylococcus aureus* Causing Skin and Soft Tissue Infections in Companion Animals: Antimicrobial Resistance Profiles and Clonal Lineages. *Antibiotics (Basel)*. 2022 Apr 29;11(5):599. doi: 10.3390/antibiotics11050599.
- Farias R, M Pingarilho, **I Couto**, I Fronteira. (2022) Tuberculosis and/or HIV infection and associated socio-behavioral factors in immigrants, in Portugal: a cross-sectional, community-based descriptive study. *Port J Public Health*;39:163-169. doi: 10.1159/000521726
- Costa SS, Ferreira C, Ribeiro R, Feßler AT, Schink A-K, Kadlec K, Kaspar H, Amaro A, Albuquerque T, Abrantes P, Morais C, Pomba C, Schwarz S, **Couto I**. (2021) Proposal of epidemiological cut-off values for apramycin 15 µg and florfenicol 30 µg disks applicable to *Staphylococcus aureus*. *Microbial Drug Resistance* 2021; [E-pub ahead of print]. doi: 10.1089/mdr.2020.0402
- Costa SS, Oliveira V, Serrano M, Pomba C, **Couto I**. (2021) Phenotypic and molecular traits of *Staphylococcus coagulans* associated with canine skin infections in Portugal. *Antibiotics*, 10(5), 518. doi:10.3390/antibiotics10050518
- Ferreira C, Costa SS, Serrano M, Oliveira K, Trigueiro G, Pomba C, **Couto I**. (2021) Clonal lineages, antimicrobial resistance and PVL carriage of *Staphylococcus aureus* associated to skin and soft tissue infections from ambulatory patients in Portugal. *Antibiotics* 2021, 10(4), 345. doi: 10.3390/antibiotics10040345
- Tozar T, Santos Costa S, Udrea AM, Nastasa V, **Couto I**, Viveiros M, Pascu ML, Romanitan MO. (2020) Anti-staphylococcal activity and mode of action of thioridazine photoproducts. *Sci Rep.* 10(1):18043. doi: 10.1038/s41598-020-74752-z.
- Perdigão J, P Gomes, A Miranda, F Maltez, D Machado, C Silva, JE Phelan, L Brum, S Campino, I Couto, M Viveiros, TG Clark, I Portugal. (2020) Using genomics to understand the origin and dispersion of multidrug and extensively drug resistant tuberculosis in Portugal. *Sci Rep.*;10(1):2600. doi: 10.1038/s41598-020-59558-3.
- Cremers N, A Belas, S Santos Costa, **I Couto**, H de Rooster, C Pomba C. (2020) In vitro antimicrobial efficacy of two medical grade honey formulations against common high-risk methicillin-resistant staphylococci and *Pseudomonas* spp. pathogens. *Vet Dermatol.* 31(2):90-96. doi: 10.1111/vde.12811.
- Costa SS, B Sobkowiak, R Parreira, J Edgeworth, M Viveiros, TG Clark, **I Couto** (2019) Genetic diversity of *norA*, coding for a main efflux pump of *Staphylococcus aureus*. *Front. Genet.* 9:710. doi:10.3389/fgene.2018.00710
- Machado D, **I Couto**, M Viveiros (2018). Advances in the molecular diagnosis of tuberculosis: from probes to genomes. *Infect Genet Evol.* pii: S1567-1348(18)30933-X. doi: 10.1016/j.meegid.2018.11.021
- Simões AS, MR Maia, J Gregório, **I Couto**, AM Asfeldt, GS Simonsen, P Póvoa, M Viveiros, LV Lapão (2018). Participatory-Implementation of an antibiotic stewardship programme supported by an innovative surveillance and clinical decision-support system. *J Hosp Infect.* 100:257-264. doi: 10.1016/j.jhin.2018.07.034.
- Perdigão J, C Silva, J Diniz, C Pereira, D Machado, J Ramos *et al* (2018). Clonal expansion across the seas as seen through CPLP-TB database: A joint effort in cataloguing *M. tuberculosis* genetic diversity in Portuguese-speaking countries. *Infect Genet Evol.* pii: S1567-1348(18)30102-3. doi: 10.1016/j.meegid.2018.03.011.
- Costa SS, M Viveiros, C Pomba, **I Couto** (2018) Active antimicrobial efflux in *Staphylococcus epidermidis*: building up of resistance to fluoroquinolones and biocides in a major opportunistic pathogen. *J Antimicrob Chemother.* 1;73(2):320-324. doi: 10.1093/jac/dkx400.

EXPERIENCE AS SCIENTIFIC ADVISER

To date has supervised the graduation works of several students, in the areas of molecular identification and antimicrobial resistance mechanisms of pathogenic bacteria.

- **4 Postdocs** (3 completed, 1 ongoing) [*1 as co-supervisor*]
- **8 PhD Thesis** (4 completed, 4 ongoing) [*2 as co-supervisor*]
- **31 Master Thesis** (26 completed) [*11 as co-supervisor*]
- **7 Project grantees** (completed)
- **6 Visiting scientists** (5 completed, 1 ongoing)
- **1 Erasmus student** (completed)

TEACHING EXPERIENCE

Over 20-year teaching experience at university courses (1st, 2nd and 3rd cycle classes).

Currently, participates in the following teaching programs (involving tutorials and practical lectures and the coordination of 7 Curricular Units):

- PhD Program in Biomedical Sciences (IHMT/UNL);
- Master Program in Medical Microbiology (UNL)
- Master Program Biomedical Sciences (IHMT/UNL)
- Master Program in Tropical Health (IHMT/UNL)

SELECTED PARTICIPATION IN INSTITUTIONAL MANAGEMENT BODIES

- Elected member of the General Council of IHMT/UNL [2009-14, 2018-present]
- Elected member of the Scientific Council of IHMT/UNL Scientific Council [2020 - present]
- Vice-President of the Scientific Council of IHMT/UNL Scientific Council [2023 - present]
- Member of the Scientific Councils of the MSc course in Biomedical Sciences (IHMT-NOVA) [since 2011] and MSc course in Medical Microbiology (NOVA) [since 2020].

SELECTED PARTICIPATION IN SCIENTIFIC AND ACADEMIC EVALUATION PANELS

- **Research Council of Biosciences, Microbiology (Health), Academy of Finland (2017-18)**
Member of the international evaluation panel for research projects, research grants and pos-doc grants
- **Research Council of Biosciences, Health and Environment, Academy of Finland (2018-19)**
Member of the international evaluation panel for research projects, research grants and pos-doc grants
- **Academic juris**
Participation in the public defenses of:
 - 35 PhD Thesis (13 as main opponent)
 - 38 Master Thesis (20 as main opponent)

Lisbon, September 16th, 2024