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**NAME: ISABEL MARIA DOS SANTOS LEITÃO COUTO**

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

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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.

**PARTICIPATION IN R&D PROJECTS**

- **As coordinator:** 5 funded projects, 1 as co-PI
- **As team member:** Participated to date in over 20 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 **96** papers in international journals with peer-review (*total WoK citations: >2,700; h-index: 30*)
- Author of **11** book chapters (8 international, 3 national editions)

**SELECTED PUBLICATIONS FROM THE LAST 5 YEARS**

- 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
- 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.* In press. 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.
- Machado D, Coelho TS, Perdigão J, Pereira C, **Couto I**, Portugal I, Maschmann RDA, Ramos DF, von Groll A, Rossetti MLR, Silva PA and Viveiros M (2017). Interplay between Mutations and Efflux in Drug Resistant Clinical Isolates of *Mycobacterium tuberculosis*. *Front. Microbiol.* 8:711. doi: 10.3389/fmicb.2017.00711
- Perdigão J, Clemente S, Ramos J, Masakidi P, Machado D, Silva C, **Couto I**, Viveiros M, Taveira N, Portugal I. Genetic diversity, transmission dynamics and drug resistance of *Mycobacterium tuberculosis* in Angola. *Sci Rep.* 2017;7:42814. doi: 10.1038/srep42814

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- Costa SS, C Palma, K Kadlec, AT Fessler, M Viveiros, J Melo-Cristino, S Schwarz, **I Couto** (2016). Plasmid-borne antimicrobial resistance of *Staphylococcus aureus* isolated in a hospital in Lisbon, Portugal. *Microb Drug Resist.* 22(8):617-626. doi: 10.1089/mdr.2015.0352
- Costa SS, Lopes E, Azzali E, Machado D, Coelho T, da Silva PEA, Viveiros M, Pieroni M, and **I Couto**. (2016) An Experimental Model for the Rapid Screening of Compounds with Potential Use Against Mycobacteria. *ASSAY and Drug Development Technologies.* 2016, 14(9): 524-534. doi:10.1089/adt.2016.752
- Machado D, D Pires, J Perdigão, **I Couto**, I Portugal, M Martins, L Amaral, E Anes, M Viveiros. (2016). Ion Channel Blockers as Antimicrobial Agents, Efflux Inhibitors, and Enhancers of Macrophage Killing Activity against Drug Resistant *Mycobacterium tuberculosis*. *PLoS One.* 26;11(2):e0149326. doi: 10.1371/journal.pone.0149326
- PEA da Silva, D Machado, D Ramos, **I Couto**, A Von Groll, and M Viveiros. "Efflux Pumps in Mycobacteria: Antimicrobial Resistance, Physiological Functions, and Role in Pathogenicity". In: X.-Z. Li (ed.), *Efflux-Mediated Antimicrobial Resistance in Bacteria.* Springer International Publishing Switzerland. 2016. Pages: 527-559. doi: 10.1007/978-3-319-39658-3\_21. ISBN 978-3-319-39658-3.
- Simões AS, **I Couto**, C Toscano, E Gonçalves, P Póvoa, M Viveiros, LV Lapão (2016). Prevention and control of antimicrobial resistant healthcare-associated infections: the microbiology laboratory rocks! *Front Microbiol.* 7:855. doi: 10.3389/fmicb.2016.00855.
- Costa SS, M Viveiros, AR Rosato, J Melo-Cristino, **I Couto** (2015). Impact of efflux in the development of multidrug resistance phenotypes in *Staphylococcus aureus*. *BMC Microbiol.* 15:232. doi: 10.1186/s12866-015-0572-8
- Machado D, R Cannalire, SS Costa, G Manfroni, O Tabarrini, V Cecchetti, **I Couto**, M Viveiros, S Sabatini. (2015) The boosting effect of 2-phenylquinoline efflux inhibitors in combination with macrolides against *Mycobacterium smegmatis* and *Mycobacterium avium*. *ACS Infect. Dis.* Article doi: 10.1021/acsinfectdis.5b00052
- Pieroni M, D Machado, E Azzali, SS Costa, **I Couto**, G Costantino, M Viveiros. (2015). Rational design and synthesis of thioridazine analogues as enhancers of the antituberculosis therapy. *J Med Chem.* 58(15):5842-53. doi: 10.1021/acs.jmedchem.5b00428.
- Rabna P, J Ramos, G Ponce, L Sanca, M Mane, A Armada, D Machado, F Vieira, VF Gomes, E Martins, R Colombatti, F Riccardi, J Perdigão, J Sotero, I Portugal, **I Couto**, JAtouguia, A Rodrigues, M Viveiros. (2015). Direct detection by the Xpert MTB/RIF assay and characterization of multi and poly drug-resistant tuberculosis in Guinea-Bissau, West Africa. *PLoS ONE*, 27;10(5):e0127536. doi: 10.1371/journal.pone.0127536.
- Coelho T, D Machado, **I Couto**, R Maschmann, D Ramos, A von Groll, ML Rossetti, PA Silva, M Viveiros. (2015). Enhancement of antibiotic activity by efflux inhibitors against multidrug resistant *Mycobacterium tuberculosis* clinical isolates from Brazil. *Front.Microbiol.* 6:330. doi: 10.3389/fmicb.2015.00330
- Perdigão J, H Silva, D Machado, R Macedo, F Maltez, C Silva, L Jordao, **I Couto**, K Mallard, F Coll, G A Hill-Cawthorne, R McNerney, A Pain, T G Clark, M Viveiros, I Portugal. Unraveling *Mycobacterium tuberculosis* genomic diversity and evolution in Lisbon, Portugal, a highly drug resistant setting. *BMC Genomics.* 2014 Nov 18;15:991. doi: 10.1186/1471-2164-15-991.
- Leão C, Canto A, Machado D, Sanches IS, **Couto I**, Viveiros M, Inácio J, Botelho A. 2014. Relatedness of *Mycobacterium avium* subspecies *hominissuis* clinical isolates of human and porcine origins assessed by MLVA. *Vet Microbiol.* 2014 Sep 17;173(1-2):92-100.
- Couto N, A Belas, **I Couto**, V Perreten, C Pomba (2014). Genetic relatedness, antimicrobial and biocide susceptibility comparative analysis of methicillin-resistant and -susceptible *Staphylococcus pseudintermedius* from Portugal. *Microb Drug Resist.* 20(4):364-371. doi: 10.1089/mdr.2013.0043.
- Perdigão J, Macedo R, Machado D, Silva C, Jordão L, **Couto I**, Viveiros M, Portugal I. GidB mutation as a phylogenetic marker for Q1 cluster *Mycobacterium tuberculosis* isolates and intermediate-level streptomycin resistance determinant in Lisbon, Portugal. *Clin Microbiol Infect.* 2014;20(5):O278-84. doi: 10.1111/1469-0691.12392
- Pedrosa P, Veigas B, Machado D, **Couto I**, Viveiros M, Baptista PV. Gold nanoprobe for multi loci assessment of multi-drug resistant tuberculosis. *Tuberculosis.* 2014; 94(3):332-7. doi: 10.1016/j.tube.2013.12.009
- Perdigão J, Macedo R, Silva C, Machado D, **Couto I**, Viveiros M, Jordao L, Portugal I. 2013. From multidrug-resistant to extensively drug-resistant tuberculosis in Lisbon, Portugal: the stepwise mode of resistance acquisition. *J Antimicrob Chemother.* 68(1):27-33. doi: 10.1093/jac/dks371
- Costa, SS, M Viveiros, L Amaral, **I Couto** (2013). Multidrug Efflux Pumps in *Staphylococcus aureus*: an update. *Open Microbiol J.* 7:59-71. Review. doi: 10.2174/1874285801307010059.