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OVERVIEW

I am a mother of 4 sons; in parallel, I have pursued full-time University scientific and teaching careers.

I have been teaching at the University of Lisboa (at the Chemistry and Biochemistry Department) mostly Molecular Biology for 54 semesters with an average teaching of ~9h per week.

The goal of my research is to understand the molecular and cellular mechanisms of the genetic disease Cystic Fibrosis and to translate this knowledge into the benefit of patients. I have authored 112 international papers (average citations per article: 17.93) 57 of which as senior/corresponding author; 4 book chapters; edited 2 books and 2 special journal issues. My publications have been cited 2,698 (Scopus) and 3,619 (Google Scholar) times. H-index: 29 (Scopus) 34 (Google Scholar); i10 – index: 77. Researcher ID: E-5748-2012 | Scopus Author (Orchid): ID 7006683774.

I have directly supervised/Co-supervised 15 successfully completed PhD students (+6 ongoing); 16 post-doctoral fellows (+6 ongoing); and more than 23 junior students (BSc + MSc). I also mentor(ed) 4 FCT researchers and 1 Assistant Professor.

I have participated 31 grants, 18 of which as Principal Investigator, amounting to~3.6M€. Seven of these were from EU, of which I coordinated one (TargetScreen2) and Vice-coordinated another (EuroCareCF).

I am an EMBO member since 2014. Currently, I am Director of BioISI- Biosystems & Integrative Sciences Institute (Lisboa, Portugal), coordinator of PhD programme BioSys (funded by FCT) and member of the Scientific Advisory Board (SAB) of the European Cystic Fibrosis Society (ECFS) being coordinator of ECFS Basic Science Working Group and Associate Editor of Journal of Cystic Fibrosis (Elsevier). I am a former SAB member of and CF Trust (UK) and Mukoviszidose e.V (German CF Foundation).

I have registered 3 patents and I regularly develop business consulting activities with industry (BioMarin; Vertex; Facilitate; Gilead; LEK; Reuters; Novartis etc).

I gave 135 invited international talks (+36 national), including one opening plenary of North-American Cystic Fibrosis Conference (2007) and 4 opening plenaries at ECFS Conferences (2004, 2008, 2013, 2016). I organized and for 10 years the ECFS-Basic Science conferences and 6 international training workshops for young researchers in the CF field. In total, I organized 26 international conferences, being President of 2013 ECFS-European CF Society Conference and currently member of the Scientific Advisory Board FEBS Special Meetings on ABC Proteins.

ACADEMIC/SCIENTIFIC BACKGROUND

Jul 2006 "Habilitation" ("Agregação") to the title of "**Professor Agregado"**, Area of **Biochemistry**, Univ Lisboa, Portugal. Unanimously Approved. Course proposal: "*Human Molecular Biology from a Systems Biology Perspective*".

1993 PhD in **Biochemistry/Molecular Genetics**, Univ Lisboa, Portugal & Gulbenkian Institute of Science (Oeiras, Portugal). Supervisor: Prof Claudina Rodrigues-Pousada. Final mark: *summa cum laude*. Thesis: "*Stress Proteins: Induction and Regulation in Tetrahymena pyriformis*".

1986 MSc (equiv) in **Biochemistry**, Univ Lisboa, Portugal & Gulbenkian Institute of Science (Oeiras, Portugal). Supervisor: Prof Claudina Rodrigues-Pousada. Final mark: *summa cum laude*. Thesis: "*The Response of the Protozoan Tetrahymena pyriformis to a Stress Agent: Sodium Meta-Arsenite*".

1982 BSc in **Chemistry/Biochemistry**, Univ Lisboa Portugal. Work carried out as undergraduate research student at the Faculty of Medical Sciences, New University of Lisboa, Portugal. Final mark: 17/20. Thesis: "*Lipid Content of Liver and Blood Plasma of Hepatomized Rats*".

POSITIONS/TRAINING

Jul 2013 **Full Professor of Biochemistry/ Molecular Biology**. Dept of Chemistry & Biochemistry, Faculty of Sciences, University of Lisboa.

2015- **Director of BioISI- Biosystems & Integrative Sciences Institute** (evaluated in 2015: 24/25)

2014- **Member of the Portuguese Academy of Sciences** (Section of Sciences).

2012- **Member of the Board ECFS** - European Society of Cystic Fibrosis

Jan 016- **Visiting fellow at EMBL-**European Molecular Biology Laboratory (Heidelberg, Germany) at the Pepperkok group.

2006/2013 **Assistant Professor with "Habilitation"** (Biochemistry/ Molecular Biology), Dept of Chemistry & Biochemistry, Faculty of Sciences, University of Lisboa.

1993/2006 **Assistant Professor**, Faculty Sciences, Univ Lisboa, Portugal (tenure: 1998).
Invited Researcher at the Centre Human Genetics, National Institute of Health

1986/1993 **Teaching Assistant**, Dept. Chemistry & Biochemistry, Faculty of Sciences, University of Lisboa.
PhD student at IGC - Gulbenkian Institute of Science, Oeiras, Portugal.

1983/1986 **Trainee Teaching Assistant**, Dept. Chem & Biochemistry, Faculty of Sciences, University of Lisboa.
Graduate student at IGC - Gulbenkian Institute of Science, Oeiras, Portugal.

OTHER POSITIONS

Nov 2012/15 **Visiting Researcher at Faculty of Medical Sciences of UniCamp**-University of Campinas (SP, Brazil) - the, CAPES programme "Science without Borders".

2012/2015 **Director of the Research Centre BioFiG**-Centre for Biodiversity, Functional and Integrative Genomics.

2010/2011 **Vice-President** of Department of Chemistry and Biochemistry, Faculty of Sciences, University of Lisboa.

Aug 08/Jul 10 **Visiting fellow at EMBL-**European Molecular Biology Laboratory (Heidelberg, Germany) at the Pepperkok group to coordinate EU project TargetScreen2.

2007 **Founding member of Research Centre BioFiG**- Centre for Biodiversity, Functional and Integrative Genomics, University of Lisboa (Portugal) and head of Membrane Protein Disorders Unit.

2006/2011 **Coordinator of the Cystic Fibrosis Research Unit**, Centre of Human Genetics of the National Institute of Health Ricardo Jorge, Lisboa (Portugal)

PRIZES AND HONOURS

Prizes

2013 Pfizer Award for Basic Biomedical Research

2010 Annual Award of European Cystic Fibrosis Society (jointly with DN Sheppard, Bristol, UK)

Honours

2014 Elected EMBO member

2011 Editor (with K Kunzelmann) of "*Cystic Fibrosis Protocols and Diagnosis*", Humana Press. Series: Methods in Molecular Biology Series; 2 Vols: 741 & 742

2011 Member of the Science Award Committee of Fundação Pulido Valente

2010-2011 Member of the Research Advisory Board of Mukoviszidose Institut-the Cystic Fibrosis Patients Association (Germany)

2008 - Associate Editor Journal of Cystic Fibrosis (Elsevier)

2007-2010 Member of the Award Committee of EMBO/FEBS Women in Science

2006-2009 Member of Research Advisory Board of the Cystic Fibrosis Trust (UK)

2004 Chief-editor of a special supplement of *Journal of Cystic Fibrosis*.

RESEARCH INTERESTS

My lab studies human disease mechanisms associated with membrane proteins, namely those related to the genetic disease Cystic Fibrosis (CF). Thus the major focus is on the molecular and cellular mechanisms of biogenesis, traffic and degradation of normal and mutant protein CFTR (CF transmembrane Conductance Regulator), which when mutated causes CF. Other studies include the epithelial Na^+ channel ENaC and anoctamins to identify novel genes and small-molecules that regulate these membrane proteins. Most of our research aims to understand the molecular mechanisms that prevent mutant CFTR with F508del (the most frequent mutation found in CF patients) from reaching the cell surface. By understanding these mechanisms that retain F508del-CFTR at the endoplasmic reticulum (ER), we aim to design therapeutic strategies to restore its normal activity as a Cl^- channel at the cell surface, with substantial benefit for CF patients. We thus carry out drug development programmes to identify novel CFTR modulators.

To understand CF pathophysiology mechanisms in a global way, we use systems approaches based on transcriptomics, proteomics and functional genomics (functional siRNA screens). In collaboration with nanoelectronics centres, we developed novel chips for CF diagnosis.

Our research is also focussed on the characterization of other CFTR gene mutations, namely those: 1) affecting processing of mRNA (splicing and nonsense-mediated decay); 2) with intracellular trafficking defects.

We confirm all basic cellular mechanisms in **native tissues** (collected from CF patients) with the final goal of translating knowledge and results from the basic science into the clinical practice, for better CF diagnosis, prognosis and personalized therapies.

PUBLICATIONS

Articles in International Peer-Reviewed Journals *[impact factor from publication year]*

1. Benedetto R, Sirianant L, Pankonien I, Wanitchakool P, Ousingsawat J, Cabrita I, Schreiber R, Amaral M, Kunzelmann K (2016) Relationship between TMEM16A/anoctamin 1 and LRRC8A. *Pflügers Arch*. **68**: 1751-63. [PMID: 27514381] IF: 3.654
2. Lobo MJ, Amaral MD, Zaccolo M, Farinha CM (2016) EPAC1 activation by cAMP stabilizes CFTR at the membrane by promoting its interaction with NHERF1. *J Cell Sci* **129**: 2599-612. [PMID: 27206858] IF: 4.706
3. Nagy B Jr, Nagy B, Fila L, Clarke LA, Gönczy F, Bede O, Nagy D, Újhelyi R, Szabó Á, Anghelyi A, Major M, Bene Z, Fejes Z, Antal-Szalmás P, Bhattoa HP, Balla G, Kappelmayer J, Amaral MD, Macek M Jr, Balogh I (2016) Human epididymis protein 4 (HE4): a novel serum inflammatory biomarker in cystic fibrosis. *Chest* **150**: 661-72. [PMID: 27105680] IF: 7.483
4. Felício V, Ramalho AS, Igreja S, Amaral MD (2016) mRNA-based Detection of Rare CFTR Mutations Improves Genetic Diagnosis of Cystic Fibrosis in Populations with High Genetic Heterogeneity. *Clin Genet*. Epub May 13. [PMID: 27174726] IF: 3.892
5. Pereira JFS, Awatade NT, Loureiro CA, Matos P, Amaral MD, Jordan P (2016) The third dimension: new developments in cell culture models for colorectal research. *Cell Mol Life Sci* **73**: 3971–3989 [PMID: 27147463] IF: 5.808
6. De Boeck K, Amaral MD (2016) Classification of CFTR mutation classes - Authors' reply. *Lancet Respir Med* **4**: e39. [PMID: 27377413] IF: 9.629
7. De Boeck K, Amaral MD (2016) Highlights of progress in therapies for cystic fibrosis. *Lancet Respir Med* **4**: 662-74. [PMID: 27053340] IF: 9.629
8. Amaral MD, Farinha, CM, Matos P, Botelho HM (2016) Investigating alternative transport of integral plasma membrane proteins from the ER to the Golgi: lessons from the cystic fibrosis transmembrane conductance regulator (CFTR). *Methods Mol Biol.* **1459**:105-26. [PMID: 27665554]
9. Igreja S, Clarke LA, Botelho HM, Marques L, Amaral MD (2016) Correction of a Cystic Fibrosis Splicing Mutation by Antisense Oligonucleotides. *Hum Mutat* **37**: 209-15. [PMID: 26553470] IF: 5.213
10. Amaral MD, Balch WE (2015) Hallmarks of therapeutic management of the cystic fibrosis functional landscape. *J Cyst Fibros* **14**: 687-99. [PMID: 26526359]. IF: 3.475
11. Ramalho AS, Clarke LA, Sousa M, Felicio V, Barreto C, Lopes C, Amaral MD (2016) Comparative *ex vivo*, *in vitro* and *in silico* Analyses of a CFTR Splicing Mutation: Importance of Functional Studies to Establish Disease Liability of Mutations. *J Cyst Fibros* **15**: 21-33. [PMID: 25735457] IF: 3.475
12. Srivastava JK, Awatade NT, Bhat HR, Kmit A, Mendes K, Ramos M, Amaral MD, Singh UP (2015) Pharmacological evaluation of Hybrid thiazolidin-4-one-1,3,5-triazines for NF-κB, biofilm and CFTR activity. *RSC Adv* **5**: 88710. [DOI: 10.1039/c5ra09250g]. IF: 3.840
13. Clarke LA, Botelho HM, Sousa L, Falcao AO, Amaral MD (2015) Transcriptome meta-analysis reveals common differential and global gene expression profiles in cystic fibrosis and other respiratory disorders and identifies CFTR regulators. *Genomics* **106**:268-77. [PMID: 26225835]. IF: 2.284
14. Farinha CM, Sousa M, Canato S, Schmidt A, Uliyakina I, Amaral MD (2015) Increased efficacy of VX-809 in different cellular systems results from an early stabilization effect of F508del-CFTR. *Pharmacol Res Perspect* **3**: e00152. [PMID: 26171232].
15. Hartl D, Amaral M (2015) Cystic fibrosis -- From basic science to clinical benefit: A review series. *J Cyst Fibros* 14: 415-6. [PMID: 26088670]. IF: 3.475
16. Botelho HM, Uliyakina I, Awatade NT, Proença MC, Tischer C, Sirianant L, Kunzelmann K, Pepperkok P, Amaral MD (2015) Protein Traffic Disorders: an Effective High-Throughput Fluorescence Microscopy Pipeline for Drug Discovery. *Sci Rep* **5**: 9038. [PMID: 25762484]. IF: 5.578
17. Loureiro CA, Matos AM, Dias-Alves A, Pereira JF, Uliyakina I, Barros P, Amaral MD, Matos P (2015) A molecular switch in the scaffold NHERF1 enables misfolded CFTR to evade the peripheral quality control checkpoint. *Sci Signal* **8**: ra48. [PMID: 25990958]. IF: 6.279

18. Bell SC, De Boeck K, Amaral MD (2015) New Pharmacological Approaches for Cystic Fibrosis: Promises, Progress, Pitfalls. *Pharmacol Ther* **145**: 19-34. [PMID: 24932877]. IF: 7.793.
19. Amaral MD (2015) Novel Personalized Therapies for Cystic Fibrosis: Treating the Basic Defect in All Patients. *J Intern Med* **277**: 155-66. [PMID: 25266997]. IF: 6.455.
20. Verkman AS, Edelman A, Amaral MD, Mall MA, Beekman JM, Meiners T, Galietta LJV, Bear CE (2015) Finding new drugs to enhance anion secretion in cystic fibrosis: Toward suitable systems for better drug screening. *J Cyst Fibros* **15**: 700-5. [PMID: 26474804]. IF: 3.475
21. Awatade NT, Uliyakina I, Farinha CM, Clarke LA, Mendes K, Solé A, Pastor J, Ramos MM, Amaral MD (2015) Measurements of Functional Responses in Human Primary Lung Cells as a Basis for Personalised Therapy for Cystic Fibrosis. *E-Biomedicine* **2**: 147-153. [PMID: 26137539]
22. Sharma N, Sosnay PR, Ramalho AS, Douville C, Franca A, Gottschalk LB, Park J, Lee M, Vecchio-Pagan B, Siklosi K, Amaral MD, Karchin R, Cutting GR (2014) Experimental Assessment of Splicing Variants Using Expression Minigenes and Comparison with *In Silico* Predictions. *Human Mutat* **35**: 1249-59. [PMID: 25066652] IF: 5.213.
23. Beekman JM, Sermet-Gaudelus I, de Boeck K, Gonska T, Derichs N, Mall MA, Mehta A, Martin U, Drumm M, Amaral MD (2014) CFTR Functional Measurements in Human Models For Diagnosis, Prognosis and Personalised Therapy. *J Cyst Fibros* **13**: 363-72. [PMID: 24882694]. IF: 2.873.
24. Luz S, Cihil KM, Brautigan DL, Amaral MD, Farinha CM, Swiatecka-Urban A (2014) LMTK2 Mediated Phosphorylation Regulates CFTR Endocytosis in Human Airway Epithelial Cells. *J Biol Chem* **289**: 15080-93. [PMID: 24727471]. IF: 4.651.
25. Xu Z, Pissarra LS, Farinha CM, Liu J, Cai Z, Thibodeau PH, Amaral MD, Sheppard DN (2014) Revertant mutants modify, but do not rescue, the gating defect of the cystic fibrosis mutant G551D-CFTR. *J Physiol* **592(Pt 9)**: 1931-47 [PMID: 24591578]. IF: 4.384.
26. Masvidal L, Igreja S, Ramos MD, Alvarez A, de Gracia J, Ramalho AS, Amaral MD, Larriba S, Casals T (2014) Assessing the residual CFTR gene expression in human nasal epithelium cells bearing CFTR splicing mutations causing Cystic Fibrosis. *Eur J Hum Genet* **22**: 784-91 [PMID: 24129438]. IF: 4.319.
27. Almaça J, Faria D, Sousa M, Uliyakina I, Conrad C, Sirianant L, Clarke LA, Martins JP, Santos M, Hériché JK, Huber W, Schreiber R, Pepperkok R, Kunzelmann K, Amaral MD (2013) High-content siRNA screen reveals global ENaC regulators and potential cystic fibrosis therapy targets. *Cell* **154**: 1390-1400. [PMID: 24034256]. IF: 31.957.
28. Sosnay PR, Siklosi KR, Van Goor F, Kaniecki K, Corey M, Ramalho AS, Amaral MD, Dorfman R, Masica DL, Karchin R, Sharma N, Lewis MH, Yu H, Thomas PJ, Millen L, Zielenski, J Patrinos GP, Castellani C, Rommens JM, Penland CM, Cutting GR (2013) Defining the disease-liability of mutations in the cystic fibrosis transmembrane conductance regulator gene. *Nat Genet* **45**: 1160-7 [PMID: 23974870]. IF: 35.209.
29. Silva MC, Amaral MD, Morimoto RI (2013) Neuronal Reprograming of Protein Homeostasis by Calcium-Dependent Regulation of the Heat Shock. *PLoS Genet* **9**: e1003711. [PMID: 24009518]. IF: 8.517.
30. Farinha CM, King-Underwood J, Sousa M, Correia AR, Henriques MJ, Roxo-Rosa M, Da Paula AC, Williams J, Hirst S, Gomes CM, Amaral MD (2013) Revertants, Low Temperature, and Correctors Reveal the Mechanism of F508del-CFTR Rescue by VX-809 and Suggest Multiple Agents for Full Correction. *Chem Biol* **20**: 943-55. [PMID: 23890012]. IF: 6.157.
31. Farinha CM, Matos P, Amaral MD (2013) Control of CFTR membrane trafficking: not just from the ER to the Golgi. *FEBS J* **280**: 4396-406. [PMID: 23773658]. IF: 4.250.
32. Amaral MD, Farinha CM (2013) Post-translational modifications of CFTR: insight into protein trafficking and cystic fibrosis disease. *FEBS J* **280**: 4396-406. [PMID: 23680006]. IF: 4.250.
33. Servidoni MF, Sousa M, Vinagre AM, Cardoso SR, Ribeiro MA, Meirelles L, Carvalho RB, Kunzelmann K, Ribeiro AF, Ribeiro JD, Amaral MD (2013) Rectal Forceps Biopsy Procedure in Cystic Fibrosis: Technical Aspects and Patients Perspective for Clinical Trials Feasibility. *BMC Gastroenterology* **13**: 91. [PMID: 23688510]. IF: 2.110.

34. Clarke LA, Sousa L, Amaral MD (2013) Changes in transcriptome of native nasal epithelium expressing F508del-CFTR and intersecting data from comparable studies. *Resp Res* **14**: 38. [PMID: 23537407]. IF: 3.642. [*"Highly accessed" article, as defined by the journal*].

35. Amaral MD, Farinha CM (2013) Rescuing mutant CFTR: a multi-task approach to a better outcome in treating Cystic Fibrosis. *Curr Pharm Des* **19**: 3497-508. [PMID: 23331027]. IF: 3.311.

36. Tian Y, Schreiber R, Wanitchakool P, Kongsuphol P, Sousa M, Uliyakina I, Palma M, Faria D, Traynor-Kaplen AE, Fragata JI, Amaral MD, Kunzelmann K (2013) Control of TMEM16A by INO-4995 and other inositolphosphates. *Br J Pharmacol* **168**: 253-65. [PMID: 22946960]. IF: 5.067.

37. De Boeck K, Kent L, Davies J, Derichs N, Amaral M, Rowe S, Middleton P, de Jonge H, Bronsveld I, Wilschanski M, Melotti P, Danner-Boucher I, Boerner S, Fajac I, Southern K, de Nooijer R, Bot A, de Rijke Y, de Wachter E, Leal T, Vermeulen F, J Hug M, Rault G, Nguyen-Khoa T, Barreto C, Proesmans M, Sermet-Gaudelus I. [On behalf of the European Cystic Fibrosis Society Clinical Trial Network Standardisation Committee] (2013) CFTR biomarkers: time for promotion to surrogate endpoint? *Eur Respir J* **41**: 203-216 [PMID: 22878883]. IF: 6.355.

38. Tosoni K, Stobbart M, Luz S, Cassidy DM, Pagano M, Venerando A, Amaral MD, Kunzelmann K, Pinna L, Farinha CM, Mehta A (2013) CFTR mutations altering CFTR fragmentation. *Biochem J* **449**: 295-305. [PMID: 23067305]. IF: 4.654.

39. Moniz S, Sousa M, Moraes B, Mendes AI, Palma M, Barreto C, Fragata JI, Jordan P, Amaral MD*, Matos P* (2013) HGF stimulation of Rac1 signaling enhances pharmacological correction of the most prevalent Cystic Fibrosis mutant F508del-CFTR. *ACS Chem Biol* **8**: 432-42. **Shared senior authorship*. [PMID: 23148778]. IF: 5.442.

40. Amaral MS (2012) Finding new medicines to fight CF: multiple steps of a success story. *Orphanet J Rare Dis* **7S2**: A19. [doi:10.1186/1750-1172-7-S2-A19] IF: 5.442

41. Sousa M, Servidoni MF, Vinagre AM, Ramalho AS, Bonadia LC, Felício V, Ribeiro MA, Uliyakina I, Marson FA, Kmit A, Cardoso SR, Ribeiro JD, Bertuzzo CS, Sousa L, Kunzelmann K, Ribeiro AF, Amaral MD (2012) Measurements of CFTR-mediated Cl^- Secretion in Human Rectal Biopsies Constitute a Robust Biomarker for Cystic Fibrosis Diagnosis and Prognosis. *PLoS One* **7**: e47708. [PMID: 23082198]. IF: 3.730.

42. Mendes F, Farinha CM, Felício V, Alves PC, Vieira I, Amaral MD (2012) BAG-1 Stabilizes Mutant F508del-CFTR in a Ubiquitin-Like-Domain-Dependent Manner. *Cell Physiol Biochem* **30**: 1120-1133. [PMID: 23178238]. IF: 3.415.

43. Li H, Yang W, Mendes F, Amaral MD, Sheppard DN (2012) Impact of the cystic fibrosis mutation F508del-CFTR on renal cyst formation and growth. *Am J Physiol Renal Physiol* **303**: F1176-86. [PMID: 22874761]. IF: 3.612.

44. Faria D, Lentze N, Almaça J, Luz S, Alessio L, Tian Y, Martins JP, Cruz P, Schreiber R, Farinha CM, Auerbach D, Amaral MD, Kunzelmann K (2012) Regulation of ENaC biogenesis by the stress response protein SERP1. *Pflügers Arch Eur J Physiol* **463**: 819-27. [PMID: 22526458] IF: 4.866.

45. Silva MC, Fox S, Thakkar H, Beam M, Amaral MD, Morimoto RI (2011) A Genetic Screening Strategy Identifies Novel Regulators of the Proteostasis Network. *PLoS Genetics* **7**: e1002438. [PMID: 22242008]. IF: 8.517.

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47. Roth EK, Hirtz S, Duerr J, Wenning D, Eichler I, Seydewitz HH, Amaral MD, Mall MA (2011) The K^+ Channel Opener 1-EBIO Potentiates Residual Function of Mutant CFTR in Rectal Biopsies from Cystic Fibrosis Patients. *PLoS One* **6**: e24445. [PMID: 21909392] IF: 3.730.

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enhanced Ca^{2+}-dependent Cl^- conductance in cystic fibrosis. *Biochim Biophys Acta Mol Basis Dis* **1812**: 1385-92. [PMID: 21907281] IF: 4.910.

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112. Amaral MD, Galego L, Rodrigues-Pousada C (1988) Stress response of *Tetrahymena pyriformis* to arsenite and heat shock: differences and similarities. *Eur J Biochem** **171**: 463-470. [PMID: 3126063]. IF: 4.250. [**currently: - FEBS J*]

Book chapters

1. Amaral MD (2011) In: Tratado de Fibrosis Quística. Salcedo A, Gartner S, Novo MDG, Girón RM, editores. Editorial Just in Time SL.
2. Kunzelmann K & Amaral MD (2008) "Novas Abordagens Terapêuticas Destinadas a corrigir o Defeito Básico na Fibrose Cística". In: *Fibrose Cística: Enfoque Multidisciplinar*. Neto NL, Coordenador. Secretaria de Estado de Santa Catarina, Florianópolis, SC, Brasil.
3. Freitas PP, Ferreira HA, Graham DL, Clarke LA, Amaral MD, Martins V, Fonseca L, Cabral JS (2004) Magnetoresistive DNA chips. In: *Magnetoelectronics*. Johnson M (Editor). Elsevier-Academic Press, Amsterdam, Netherlands, pp. 331-373.
4. Farinha CM, Amaral MD (2002) Processing and intracellular trafficking of wild-type and mutant CFTR. In: *Proc 25th European Cystic Fibrosis Conference Genova*, Italy (June 20-23). Romano L, Manno G, Galietta LJV, Eds, Monduzzi Editores, Bologna, Italy, pp.1-6. ISBN: 88-323-2622-1.

Other Publications

1. Amaral MD (2010) Cystic Fibrosis – Translating Basic Science Knowledge into Therapies. *Eur Resp Disease* **6**, 66-9.
2. Amaral MD, Clarke LA, Roxo-Rosa M, Sousa L (2006) Genomics and proteomics approaches to study the genetic disease cystic fibrosis. *Revstat* **27**, 47-54.
3. Amaral MD (2004) Editorial. *J Cyst Fibros* **3(S2)**, 3.
4. Edelman A, Amaral MD (2004) General introduction to section C: biochemistry and biophysics of CFTR. *J Cyst Fibros* **3(S2)**, 67.
5. Freitas PP, Freitas H, Graham D, Clarke L, Amaral M, Martins V, Fonseca L, Cabral JS (2003) Magnetoresistive Biochips. *Europhysics News* **34**, 224-226.

In addition, of ~300 abstracts in peer-reviewed international conferences, about half were published in international ISI-indexed journals.

PATENTS

1. Amaral MD, Almaça J, Faria D, Kunzelmann K, Schreiber R, Conrad C, Pepperkok R (2013) Drug Targets for Cystic Fibrosis And Other Conditions. Filed by University of Lisboa (Portugal) to the International Bureau of the World Intellectual Property Organization. PCT/IB2013/058851
2. Matos P, Amaral MD, Moniz S, Moraes B, Mendes AI, Jordan P (2011) Rac1 signalling stimulation rescues F508del-CFTR plasma membrane expression and function in human airway cells: a novel therapeutic approach for cystic fibrosis. Patent US 14/070,533.
3. Amaral MD, Dahimène S, Mendes F, Luz S (2011) Two novel human epithelial cell lines to be used in assays for traffic studies/ screens of CFTR protein (wild-type and with the F508del mutation). Pat Pending PT105697.

GRANTS

Ongoing

2016 CFF Cystic Fibrosis Foundation, USA (Ref. AMARAL16I0) "*Characterization of Orphan CFTR mutations*". Budget: 108K$; 2 yrs. PI: MD Amaral.

2016 CFF Cystic Fibrosis Foundation, USA (Ref. AMARAL15XX1) "*RNA LIFE – Novel RNA Regulators as Potential Drug Targets for Cystic Fibrosis*". Budget: 324K$; 2 yrs. PI: MD Amaral.

2016 Gilead GÉNESE Programme (Ref PGG/008/2015) "*Predicting Clinical Drug Efficacy of CFTR Protein Modulators Using Intestinal Organoids and Nasal Cells from Patients with Cystic Fibrosis*". 30K€, 1 yr. Principal Investigator: MD Amaral.

2016 FCT/POCTI (PTDC/BIM-MEC/2131/2014) "*DIFFTARGET-Novel Factors of CFTR Traffic Related to Epithelial Cell Differentiation: Potential Therapeutic Targets for Cystic Fibrosis*". Budget: 200K€; 3 yrs. PI: MD Amaral.

2016 FCT/POCTI (PTDC/QEQ-SUP/4283/2014) "*FARMTRANSANION-Anion transmembrane transport promoted by drug-like molecules: building a library of anion carriers inspired in Ataluren (PTC124)*". Budget: 200K€; 3 yrs. PI: V Félix.

2016 FCT/POCTI (PTDC/EEI-ESS/4923/2014) "*MIMED - Mining the Molecular Metric Space for Drug Design*". Budget: 127K€; 3 yrs. PI: A Falcão

2015 CFF Cystic Fibrosis Foundation, USA (Ref. AMARAL15XX0) "*CFTR mRNA Stability Studies for PTC Mutations*". Budget: 222K$; 2 yrs. PI: MD Amaral.

2015 ERARE15-pp-010/JTC 2015 "*INSTINCT - Induced Pluripotent Stem Cells for Identification of Novel Drug Combinations Targeting Cystic Fibrosis Lung and Liver Disease*". Budget (FFCUL): 124K; 3 yrs. Principal Investigator (U Martin, Univ. Hannover, Germany). FCUL PI: MD Amaral.

2014 CF Trust Strategic Research Centre Award (Ref. SRC 003) "*INOVCF- Innovative non-CFTR Approaches for Cystic Fibrosis Therapies*". Total budget: 750K£. FCUL Budget: 178.4K€; 4 yrs. PI: M Gray, Newcastle (UK). PI for the FCUL group: MD Amaral.

Previous

2012 FCT/POCTI (PTDC/SAU-GMG/122299/2010) "*Characterization of ER-Quality Control for the F508del-CFTR Protein: Potential Therapeutic Targets for Cystic Fibrosis*". 170K€; 3 yrs. Principal Investigator: MD Amaral.

2010 COST (EU) BM1003. "*Microbial Cell Surface Determinants of Virulence as Targets for New Therapeutics in CF*". Coordinator: A Molinaro, Università di Napoli, Italy. 350K€; 4 yrs.

2014 Gilead GÉNESE Programme (Ref MED-2013-250) "*Diagnosis, Prognosis and Personalized Treatment of Cystic Fibrosis*". 20K€, 1 yr. Principal Investigator: MD Amaral.

2013 Gilead GÉNESE Programme (Ref MED-2012-022) "*Incidence of CFTR mutations in Individuals with Chronic Respiratory Diseases and their Effect in Disease Expression*". 20K€, 1 yr. Principal Investigators: AS Ramalho/ MD Amaral.

2011 CFF-Cystic Fibrosis Foundation, USA (Ref: 7207534) *Identification of Novel Targets Rescuing of F508del-CFTR Traffic: Mechanism of Action*. 228US K$, 2 yrs. Principal Investigator: MD Amaral.

2009 FCT (PIC/IC/83103/2007) *Diagnosis, Prognosis and Treatment of Cystic Fibrosis*. 170K€; 3 yrs. Principal Investigator: MD Amaral.

2007/11 European Union (FP6-2005-LH-7-037365). *TargetScreen2 - Novel post-genomics cell-based screens for drug targeting in membrane protein disorders*. Budget: 3.7 M€; 4 yrs. Scientific Coordinator: MD Amaral.

2005/10 European Union (FP6-2004-LSH-018932). *EuroCareCF – European Coordination Action for Research in Cystic Fibrosis*. 89.7K€; 3 yrs. Coordinator: David Sheppard, University of Bristol, Bristol (UK). Vice-Coordinator and PI for Coordination of Basic Research: MD Amaral.

2005/08 European Union (FP6-2004-IST-NMP-2-016833). *SNiP2CHIP – Development of a complete integrated SNP analysis system*. 195.4K€; 3 yrs. Coordinator: Paul Galvin, Tyndall National Institute, Cork (Ireland). PI for the FCUL group: MD Amaral.

2005/08 European Union (FP6-2003-LSH-512044). *NEUPROCF – Development of New Technologies for Low Abundance Proteomics: Application to Cystic Fibrosis*. 15K€; 3 yrs. Coordinator: Aleksander Edelman, Faculté de Médecine Necker – Enfants Malades, Paris (France). PI for the FCUL group: MD Amaral.

2005/08 BBSRC grant (*Biotechnology and Biological Sciences Research Council*, UK). *Use of Human-Murine CFTR Chimeras to Investigate the Coupling of Permeation and Gating in the CFTR Chloride Channel*. 10K€; 3 yrs. Principal Investigator: David Sheppard, University of Bristol, Bristol (UK). PI for the FCUL group: MD Amaral.

2005/08 FCT /POCTI (SAU/MMO/58425/2004). *CFTR Interactome*. 95K€; 3 yrs. Principal Investigator: MD Amaral.

2005/08 FCT /POCTI (BIA-BCM/56609/2004). *Caenorhabditis elegans as a model to study folding of CFTR protein*. 95K€; 3 yrs. Principal Investigator: MD Amaral.

2005/07 FCT. *Aquisition of a small physiology unit*. Project approved by the *National Programme for Scientific Re-equipament*. 132K€. Principal Investigator: MD Amaral.

2003/06 FCT /POCTI (MGI/47382/2002) *Folding, Processing and Function of Normal and Mutant Cystic Fibrosis Transmembranar Conductance Regulator: Structural Implications*. 87K€; 3 yrs. Principal Investigator: MD Amaral.

2002/05 European Union (FP5-QLRT-2000-0182). *CF-Chip – Novel Genechip Technology for Early Detection of Cystic Fibrosis*. Budget: 147.6K€; 3 yrs. Coordinator: Paul Galvin, National Microelectronics Research Centre (NMRC), "Lee Maltings", University College, Cork (Ireland). PI for the FCUL group: MD Amaral.

2000/04 European Union (FP5-QLK-1999-00241, Concerted Action). *CF Network – Thematic Network around Cystic Fibrosis and Related Diseases*. 236.4K€; 4 yrs. Coordinator: Jean-Jacques Cassiman, University of Leuven (Belgium). PI for FCUL: MD Amaral.

2001/04 FCT/ POCTI (MGI/35737/1999). *Biogenesis & Function of CFTR Protein with Different Mutations: Molecular Basis for Clinical and Therapeutic of Cystic Fibrosis?* 85K€; 3 yrs. Principal Investigator: MD Amaral; Co-PI: D Penque (INSA).

2002/04 POCTI (MGI/40878/2001). *In search of New Molecular Targets for the Development of Novel Therapeutic Strategies for Cystic Fibrosis*. 60K€; 2 yrs. Principal Investigator: D Penque (INSA); Co-PI: MD Amaral.

1997/00 FCT/ PraxisXXI (PSAU/P/SAU/55/96). *Cystic Fibrosis - Traffic and Cellular Function of CFTR*. 55K€; 3 yrs. Principal Investigator: MD Amaral.

1995/97 JNICT (PBIC/C/BIA/2060/95). *Expression Studies of CFTR Gene*. 37.4K€; 3 yrs. Principal Investigator: D Penque (INSA). Team member.

1995/97 JNICT/ French Embassy (049 C0). *Immortalization of Epithelial Cells in Portuguese Cystic Fibrosis Patients: Models to Study CFTR Gene Expression*. 1K€; 1yr. Principal Investigator: MD Amaral.

1993/95 JNICT (PBIC/C/SAU/1587/92). *Molecular Biology of Cystic Fibrosis in the Portuguese Population: Epidemiology, Anthropogenetics and Physiopathology*. 75K€; 3 yrs. Principal Investigator: J. Lavinha (INSA). Team member.

VARIOUS

Supervision: I have directly supervised **16 successfully completed PhD students** (+4 ongoing); **16 post-doctoral fellows** (+3 ongoing); and **23 junior students** (BSc + MSc). I also mentor(ed) 4 **FCT researchers** and **1 Assistant Professor**.

Grant Reviewer: NSF- National Science Foundation (USA); DFG-Deutsche Forschungsgemeinschaft (Germany); Wellcome Trust (UK); FWO (Belgium); VLM - Vaincre la Mucoviscidose (French CF Foundation); SFI - Science Foundation Ireland; Canadian CF Foundation; Cystic Fibrosis Trust (UK); US-Israel Binational Science Foundation (BSF); Italian Cystic Fibrosis Foundation.

Reviewer: Science Transl Med; Nature Struct & Mol Biol; J Molecular Biology; BBA; Journal of Medical Genetics; Gene Therapy; Molecular and Cell Biology; Journal of Molecular Biology; Proteomics; Human Molecular Genetics, Thorax; Alberts 3rded - Essentials of Molecular and Cellular Biology (textbook, Garland).

Conferences organized: I organized **26 international conferences** and a current member of the Scientific Advisory Committee of the *ABC – Special FEBS Meetings on ABC Proteins*. I was President of the *36th Annual Conference of the European Cystic Fibrosis Society*, 12-15 June 2013, Lisboa, Portugal; Chairman (2004-2009) of the *ECFS Basic Science Conferences-New Frontiers in Basic Science of Cystic Fibrosis*; Scientific Committee member of various *European Cystic Fibrosis Society Conferences* (Vice-Chairman in 2007); Co-Organizer of *2nd International Congress on Stress Responses in Biology and Medicine* (2004); Chairman (2000-2003) of the *European CF Network Consensus Meetings Towards Validation of CFTR Gene Expression & Functional Assays*.

Invited talks: I gave **125 invited international talks** (+35 national), including one opening plenary of North-American Cystic Fibrosis Conference (2007) and 3 opening plenaries at European CF Conferences (2004, 2008, 2013).