

Ana Rita Grosso  
Assistant Professor  
DCV - Departamento de Ciências da Vida  
UCIBIO - Applied Molecular Biosciences Unit  
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## Personal information

Ana Rita Grosso gathered a Biology degree (FCUL, 2002), followed by a MSc in Bioinformatics (FCUL-IGC, 2006). Her multi-omics expertise in biomedical research was accomplished by gathering a PhD in Biomedical Sciences (iMM/FMUL, 2010), where she unveiled the existence of splicing-factors expression signatures responsible by the tissue-specific regulation of alternative splicing. During her PostDoc (iMM) she disclosed new mechanisms underlying splicing and transcription dynamics.

In 2018, Ana Rita Grosso moved to NOVA School of Science and Technology (FCT-NOVA) and Applied Molecular Biosciences Unit (UCIBIO) to foster her scientific independence and consolidate her research group: Computational Multi-Omics. Her main mission is to decipher pathological conditions using multi-omics approaches, identifying molecular events to be further used as biomarkers and therapeutic targets. Highlighting, she has been unveiling (epi)genome/transcriptome alterations that affects tumor evolution and metastasis development. To date, Ana Rita Grosso published 45 papers and 2 chapter books (enclosing 1872 citations). Also, she won in highly competitive schemes: 4 Salary Grants (PhD and PostDoc Fellowships, 2 Research Contracts); 10 Projects Grants (4 as PI/Co-PI and 6 as Team Member), 1 EMBO Workshop, as well as 3 Pfizer Awards for Basic Research. Finally, she has been fostering advance training in the computational biology field by supervising 4 PostDoc researchers, 3 PhD students, 3 MSc fellows, 10 MSc students, 7 BSc students and several short-term trainees. Additionally, she has been teaching MSc and BSc courses focused on Genomics and Computational Biology fields in FCT-NOVA.

## Qualifications

Ciências Biológicas, Doctorate, New insights into alternative splicing using microarray technology, Universidade de Lisboa

Award Date: 28 Feb 2010

Bioinformática, Master, Statistical Methodologies for the Analysis of DNA Microarray Data, Universidade de Lisboa

Award Date: 5 Jun 2006

Biologia, Bachelor, Estudo Filogenético de Populações Europeias de Columba palumbus (Pombo-Torcaz), Recorrendo à Análise de DNA Mitocondrial, Universidade de Lisboa

Award Date: 22 Sept 2002

## Employment

### Assistant Professor

DCV - Departamento de Ciências da Vida

Universidade NOVA de Lisboa

Portugal

1 Apr 2022 → present

### Assistant Professor

UCIBIO - Applied Molecular Biosciences Unit

Universidade NOVA de Lisboa

1 Apr 2022 → present

### Researcher

Instituto de Medicina Molecular João Lobo Antunes - iMM

Portugal

1 Jan 2015 → 31 Dec 2017

### Post-Doctoral Investigator

Instituto de Medicina Molecular João Lobo Antunes - iMM

Portugal

1 Mar 2010 → 31 Dec 2014

## Research outputs

### **Bioprospecting and marine 'omics': surfing the deep blue sea for novel bioactive proteins and peptides**

Moutinho Cabral, I., Gonçalves, C., Grosso, A. R. & Costa, P. M., 4 Jun 2024, In: *Frontiers in Marine Science*. 11, 14 p., 1362697.

### **Transcriptome profiling of the posterior salivary glands of the cuttlefish *Sepia officinalis* from the Portuguese West coast**

Gonçalves, C., Cabral, I. M., Alves de Matos, A. P., Grosso, A. R. & Costa, P. M., 4 Jun 2024, In: *Frontiers in Marine Science*. 11, 15 p., 1362824.

### **CASZ1 upregulates PI3K-AKT-mTOR signaling and promotes T-cell acute lymphoblastic leukemia**

Cardoso, B. A., Duque, M., Gírio, A., Fragoso, R., Oliveira, M. L., Allen, J. R., Martins, L. R., Correia, N. C., Silveira, A. B., Veloso, A., Kimura, S., Demoen, L., Matthijssens, F., Jeha, S., Cheng, C., Pui, C-H., Grosso, A. R., Neto, J. L., de Almeida, S. F., Van Vlieberghe, P., & 5 othersMullighan, C. G., Yunes, J. A., Langenau, D. M., Pflumio, F. & Barata, J. T., Jun 2024, In: *Haematologica*. 109, 6, p. 1713-1725 13 p.

### **SRRM2 splicing factor modulates cell fate in early development**

Carvalho, S., Zea-Redondo, L., Tang, T. C. C., Stachel-Braum, P., Miller, D., Caldas, P., Kukalev, A., Diecke, S., Grosswendt, S., Grosso, A. R. & Pombo, A., Apr 2024, In: *Biology open*. 13, 4, 16 p., bio060415.

### **Transcription readthrough is prevalent in healthy human tissues and associated with inherent genomic features**

Caldas, P., Luz, M., Baseggio, S., Andrade, R., Sobral, D. & Grosso, A. R., Dec 2024, In: *Communications Biology*. 7, 1, 12 p., 100.

### **Identification of biomarkers predictive of metastasis development in early-stage colorectal cancer using network-based regularization**

Peixoto, C., Lopes, M. B., Martins, M., Casimiro, S., Sobral, D., Grosso, A. R., Abreu, C., Macedo, D., Costa, A. L., Pais, H., Alvim, C., Mansinho, A., Filipe, P., Costa, P. M. D., Fernandes, A., Borralho, P., Ferreira, C., Malaquias, J., Quintela, A., Kaplan, S., & 11 othersGolkaram, M., Salmans, M., Khan, N., Vijayaraghavan, R., Zhang, S., Pawlowski, T., Godsey, J., So, A., Liu, L., Costa, L. & Vinga, S., Dec 2023, In: *BMC Bioinformatics*. 24, 1, 23 p., 17.

### **Sialyl Lewis<sup>X/A</sup> and Cytokeratin Crosstalk in Triple Negative Breast Cancer**

Pascoal, C., Carrascal, M. A., Barreira, D. F., Lourenço, R. A., Granjo, P., Grosso, A. R., Borralho, P., Braga, S. & Videira, P. A., Feb 2023, In: *Cancers*. 15, 3, 15 p., 731.

### **Aerocyte specification and lung adaptation to breathing is dependent on alternative splicing changes**

Fidalgo, M. F., Fonseca, C. G., Caldas, P., Raposo, A. A. S. F., Balboni, T., Henao-Mišíková, L., Grosso, A. R., Vasconcelos, F. F. & Franco, C. A., Dec 2022, In: *Life Science Alliance*. 5, 12, 25 p., e202201554.

### **Genetic and microenvironmental intra-tumor heterogeneity impacts colorectal cancer evolution and metastatic development**

Sobral, D., Martins, M., Kaplan, S., Golkaram, M., Salmans, M., Khan, N., Vijayaraghavan, R., Casimiro, S., Fernandes, A., Borralho, P., Ferreira, C., Pinto, R., Abreu, C., Costa, A. L., Zhang, S., Pawlowski, T., Godsey, J., Mansinho, A., Macedo, D., Lobo-Martins, S., & 11 othersFilipe, P., Esteves, R., Coutinho, J., Costa, P. M., Ramires, A., Aldeia, F., Quintela, A., So, A., Liu, L., Grosso, A. R. & Costa, L., 9 Sept 2022, In: *Communications Biology*. 5, 1, 14 p., 937.

### **A drug discovery approach based on comparative transcriptomics between two toxin-secreting marine annelids: *Glycera alba* and *Hediste diversicolor***

Moutinho Cabral, I., Madeira, C., Grosso, A. R. & Costa, P. M., Sept 2022, In: *Molecular omics*. 18, 8, p. 731-744 14 p.

### **Concerted Regulation of Glycosylation Factors Sustains Tissue Identity and Function**

Sobral, D., Francisco, R., Duro, L., Videira, P. A. & Grosso, A. R., Aug 2022, In: *Biomedicines*. 10, 8, 21 p., 1805.

### **A YAP/TAZ-TEAD signalling module links endothelial nutrient acquisition to angiogenic growth**

Ong, Y. T., Andrade, J., Armbruster, M., Shi, C., Castro, M., Costa, A. S. H., Sugino, T., Eelen, G., Zimmermann, B., Wilhelm, K., Lim, J., Watanabe, S., Guenther, S., Schneider, A., Zanconato, F., Kaulich, M., Pan, D., Braun, T., Gerhardt, H., Efeyan, A., & 4 others Carmeliet, P., Piccolo, S., Grosso, A. R. & Potente, M., Jun 2022, In: *Nature metabolism*. 4, 6, p. 672-682 11 p.

### **Endogenous Fluorescent Proteins in the Mucus of an Intertidal Polychaeta: Clues for Biotechnology**

Rodrigo, A. P., Lopes, A. C., Pereira, R., Anjo, S. I., Manadas, B., Grosso, A. R., Baptista, P. V., Fernandes, A. R. & Costa, P. M., 25 Mar 2022, In: *Marine Drugs*. 20, 4, 19 p., 224.

### **Epigenetic reprogramming by TET enzymes impacts co-transcriptional R-loops**

Sabino, J. C., de Almeida, M. R., Abreu, P. L., Ferreira, A. M., Caldas, P., Domingues, M. M., Santos, N. C., Azzalin, C. M., Grosso, A. R. & de Almeida, S. F., Feb 2022, In: *eLife*. 11, e69476.

### **Innate immune evasion revealed in a colorectal zebrafish xenograft model**

Póvoa, V., Rebelo de Almeida, C., Maia-Gil, M., Sobral, D., Domingues, M., Martinez-Lopez, M., de Almeida Fuzeta, M., Silva, C., Grosso, A. R. & Fior, R., Dec 2021, In: *Nature Communications*. 12, 1, 1156.

### **Interleukin-7 receptor $\alpha$ mutational activation can initiate precursor B-cell acute lymphoblastic leukemia**

Almeida, A. R. M., Neto, J. L., Cachucho, A., Euzébio, M., Meng, X., Kim, R., Fernandes, M. B., Raposo, B., Oliveira, M. L., Ribeiro, D., Fragoso, R., Zenatti, P. P., Soares, T., de Matos, M. R., Corrêa, J. R., Duque, M., Roberts, K. G., Gu, Z., Qu, C., Pereira, C., & 9 others Pyne, S., Pyne, N. J., Barreto, V. M., Bernard-Pierrot, I., Clappier, E., Mullighan, C. G., Grosso, A. R., Yunes, J. A. & Barata, J. T., Dec 2021, In: *Nature Communications*. 12, 1, 7268.

### **Overexpression of wild-type IL-7R $\alpha$ promotes T-cell acute lymphoblastic leukemia/lymphoma**

Silva, A. T., Almeida, A. R. M., Cachucho, A., Neto, J. L., Demeyer, S., de Matos, M., Hogan, T., Li, Y., Meijerink, J., Cools, J., Grosso, A. R., Seddon, B. & Barata, J. T., 23 Sept 2021, In: *Blood*. 138, 12, p. 1040-1052 13 p.

### **Genetic predisposition for aggressive behaviour related with dopamine and serotonin pathways - an overview**

Paulino, C., Fernandes, A. R., Baptista, P. V., Soeiro, C., Grosso, A. R. & Quintas, A., 1 Apr 2021, In: *Annals of Medicine*. 53, SI, p. S77-S77

### **The genetic susceptibility linking preterm birth and periodontal disease a review**

Couceiroa, J., Grosso, A. R., Baptista, P. V., Mendes, J. J., Fernandes, A. R. & Quintas, A., 1 Apr 2021, In: *Annals of Medicine*. 53, SI, p. S16-S17

### **Control of endothelial quiescence by FOXO-regulated metabolites**

Andrade, J., Shi, C., Costa, A. S. H., Choi, J., Kim, J., Doddaballapur, A., Sugino, T., Ong, Y. T., Castro, M., Zimmermann, B., Kaulich, M., Guenther, S., Wilhelm, K., Kubota, Y., Braun, T., Koh, G. Y., Grosso, A. R., Frezza, C. & Potente, M., Apr 2021, In: *Nature Cell Biology*. 23, 4, p. 413-423 11 p.

### **A Transcriptomic Approach to the Recruitment of Venom Proteins in a Marine Annelid**

Rodrigo, A. P., Grosso, A. R., Baptista, P. V., Fernandes, A. R. & Costa, P. M., 28 Jan 2021, In: *Toxins*. 13, 2, 97.

### **Specific Antiproliferative Properties of Proteinaceous Toxin Secretions from the Marine Annelid *Eulalia* sp. onto Ovarian Cancer Cells**

Rodrigo, A. P., Mendes, V. M., Manadas, B., Grosso, A. R., Alves de Matos, A. P., Baptista, P. V., Costa, P. M. & Fernandes, A. R., 12 Jan 2021, In: *Marine Drugs*. 19, 1, 31.

### **Comprehensive Detection of Pseudogenes Transcribed by Readthrough**

Pinto, R., Sobral, D. & Grosso, A. R., 2021, *Pseudogenes*. Polisen, L. (ed.). New York: Humana Press, p. 85-102 18 p. (Methods in Molecular Biology; vol. 2324).

### **New Insights into Immunological Involvement in Congenital Disorders of Glycosylation (CDG) from a People-Centric Approach**

Francisco, R., Pascoal, C., Marques-da-Silva, D., Brasil, S., Pimentel-Santos, F. M., Altassan, R., Jaeken, J., Grosso, A. R., Dos Reis Ferreira, V. & Videira, P. A., 3 Jul 2020, In: *Journal of Clinical Medicine*. 9, 7, 2092.

**Analysis of Mammalian Native Elongating Transcript sequencing (mNET-seq) high-throughput data**  
Prudêncio, P., Rebelo, K., Grosso, A. R., Martinho, R. G. & Carmo-Fonseca, M., 1 Jun 2020, In: *Methods*. 178

**Mytilus galloprovincialis CYP1A-like mRNAs reveal closer proximity of mytilid CYP1A to the eumetazoan CYP2 family**  
Cunha, M., Martins, C., Grosso, A. R. & Costa, P. M., 1 Sept 2019, In: *Aquatic Toxicology*. 214, 105260.

**Single-molecule imaging of transcription at damaged chromatin**  
Vitor, A. C., Sridhara, S. C., Sabino, J. C., Afonso, A. C., Grosso, A. R., Martin, R. M. & Almeida, S. F. D., 1 Jan 2019, In: *Science Advances*. 31, 4, eaau1249.

**One nanoprobe, two pathogens: gold nanoprobe multiplexing for point-of-care**  
Veigas, B., Pedrosa, P., Carlos, F. F., Mancio-Silva, L., Grosso, A. R., Fortunato, E., Mota, M. M. & Baptista, P., 7 Aug 2015, In: *Journal of Nanobiotechnology*. 13, 1, 7 p., 48.

**Chloroquine mediated modulation of Anopheles gambiae gene expression**  
Abrantes, P., Dimopoulos, G., Grosso, A. R., Rosário, V. E. D. & Silveira, H., 2 Jul 2008, In: *PLoS ONE*. Vol. 3, n.º 7, p. e2587-e2595 9 p., e2587.

**Impacto da cloroquina nos mecanismos de defesa de Anopheles gambiae à infecção por Plasmodium berghei**  
Abrantes, P., Dimopoulos, G., Grosso, A. R., Do Rosário, V. E. & Silveira, H., Jan 2007, *Revista da Sociedade Brasileira de Medicina Tropical*. Supl.1 ed. Vol. Vol. 40. p. 159 1 p. (Revista Da Sociedade Brasileira De Medicina Tropical).

**Impacto da cloroquina nos mecanismos de defesa de A. gambiae à infecção por P. berghei**  
Abrantes, P., Dimopoulos, G., Grosso, A. R., Do Rosário, V. E. & Silveira, H., 2007.

## Activities

### RNA (Journal)

Ana Rita Fialho Grosso (Peer reviewer)  
2018 → ...

### Bioinformatics (Journal)

Ana Rita Fialho Grosso (Peer reviewer)  
2014 → ...

### BMC Bioinformatics (Journal)

Ana Rita Fialho Grosso (Peer reviewer)  
2014 → ...

### BMC Cancer (Journal)

Ana Rita Fialho Grosso (Peer reviewer)  
2014 → ...

### BMC Genomics (Journal)

Ana Rita Fialho Grosso (Peer reviewer)  
2014 → ...

### Oncotarget (Journal)

Ana Rita Fialho Grosso (Peer reviewer)  
2014 → ...

## **Prizes**

### **FCT CEEC individual**

Grosso, Ana Rita (Recipient), 2018

### **FCT Investigator**

Grosso, Ana Rita (Recipient), 2014

### **FCT Post-Doctoral Fellowship**

Grosso, Ana Rita (Recipient), 2010

### **Pfizer Award**

Grosso, Ana Rita (Recipient), 2011

### **Pfizer Award**

Grosso, Ana Rita (Recipient), 2017

### **PhD Fellowship**

Grosso, Ana Rita (Recipient), 2006