

Curriculum vitae

PERSONAL INFORMATION

*Name: Ana Rita Matos

*Date of birth: 17.01.1975

*Sex: Female

*Nationality: Portuguese

Researcher unique identifier: orcid.org/0000-0002-3495-2195

EDUCATION

2003 PhD: **Disputation date:** 16.01.2003.

University Paris VI, France

1998 Degree in Plant Biology (5 years)

University of Lisbon, Faculty of Sciences, Portugal

CURRENT AND PREVIOUS POSITIONS

2009-Present Assistant Professor

Plant Biology Department, Faculty of Science, University of Lisbon

2009-Present Researcher

Biosystems and Integrative Sciences Institute (BioISI)

2004-2009 Post-Doctoral Researcher

University of Lisbon, Portugal

2003-2004 Post-Doctoral Researcher

University Paris VI, France

FELLOWSHIPS AND AWARDS

2006-2009 Post-Doctoral Grant SFRH/BPD/26824/2006

2003-2005 Post-Doctoral Grant SFRH/BPD/11633/2002

1999-2003 PhD Grant PRAXIS XXI/BD/18245/98

1997-1998 Erasmus Grant (fellowship (29206-(13)/827)

University Paris VII, France

RESEARCH INTERESTS

Molecular and biochemical aspects of lipid metabolism in plants. Stress physiology.

TEACHING ACTIVITIES

2009-Present Assistant Professor

Plant Biology Department, Faculty of Sciences, University of Lisbon

Undergraduate and MSc levels:

Plant Physiology

Energy Metabolism

Enzyme Kinetics

Plant Development

Plant Nutrition

Stress Physiology

Molecular Biology

Genetics

SUPERVISION OF GRADUATE STUDENTS AND RESEARCH FELLOWS

<i>Ongoing</i>	3 PhD students (FCT grants) Faculty of Sciences, University of Lisbon, Portugal
<i>1999-2019</i>	38 Students (including 11 Master Students) Faculty of Sciences, University of Lisbon, Portugal and University Paris VI, France

PROJECTS

Principal Investigator (PI and Co-PI):

- Functional studies of plant membrane trafficking and secretion - the phosphoinositide pathway in the responses to abiotic stress (PTDC/BIA-FBT/28170/2017; 2018-2021)
- Role of a patatin-like lipid acyl hydrolase in membrane degradation under water deficit: Integrating molecular and physiological approaches in Arabidopsis" (-PTDC/AGR-AAM/103721/2008; 2009-2013)

Team member:

- Grapevine immunity: the innovative role of subtilisin-like protéases (PTDC/BIA-BQM/28539/2017;2018-2021)
- Markers of resistance in Grapevine: correlating metabolome changes with mildew resistance (PTDC/BAA-MOL/28675/2017; 2018-2021)
- High Throughput Plant Phenotyping by an Interdisciplinary Approach (PTDC/ASP-PLA/28726/2017; 2018-2021)
- Redesigning the rhizosphere microbiome of Salicornia for exploitation of bioproducts and improvement of bioprocesses (PTDC/BIA-MIC/29736/2017; 2018-2021)
- Development and validation of bio-optical ecotoxicological tests in marine phototrophs (PTDC/CTA-AMB/30056/2017; 2018-2021)
- VALPRAD (contract 16-01-04-FMP-0007) "Valorisation and Restoration of Zostera noltii prairies as seahorse nursery".
- GojiBerries" PDR2020-101-031542 PFR2020 "Produção de bagas Goji" PDR2020-101-031542 Grupos Operacionais 01/ Ação 1.1/2016 (ID da Parceria: 338 Iniciativa N.º 245; 2018-2021)
- RESTAURA": AVALIAÇÃO E RESTAURO DAS COMUNIDADES DE SAPAL AFECTADAS POR ESPÉCIES VEGETAIS INVASORAS. mar2020
- MACFERTIQUAL. PDR2020-101-031590, Grupos Operacionais 01/ Ação 1.1/2016, 1 de Julho de 2017 a 31 de Dezembro de 2021. FCUL parceiro PDR2020-101-031602.
- "GO OPTIMAL"-Optimização Maçã Alcobaça- PDR2020-101-031445 (Partner)
- ‘NEWCUMBER’ - Avanços para o cultivo sustentável de pepinos-do-mar. Projecto Mar2020 nº 16-02-01-FMP-0052
- EcoHalCon (Cooperation FCT-DAAD), "Ecotoxicological analysis of halophytes growing in different levels of contamination with emerging pollutants by bio-optical and molecular tools"
- OPTIGRAPE II:OPTICAL TECHNIQUES FOR THE AUTOMATIC IDENTIFICATION OF FUNGAL INFECTION-RESISTANT GRAPEVINE CULTIVARS II (OPTIGRAPE II). BioISI Projects (2017)
- Hg-PLANKTARTIC: "Unravelling interactions between phyto- and zooplankton and mercury cycling in Deception Island waters impacted by volcanic-mercury". PROPOLAR-FCT (2016-2017).
- OPTIGRAPE I: OPTICAL TECHNIQUES FOR THE AUTOMATIC IDENTIFICATION OF FUNGAL INFECTION-RESISTANT GRAPEVINE CULTIVARS II (OPTIGRAPE II). BioISI Projects (2016)
- PRODER, 4.1 Cooperação para a Inovação, nº 44894 "Precision Irrigation in pear orchards" (2012-2014)
- PTDC/AGR-AAM/69614/2006 "Study of the effects of water stress in the bioenergetics processes in plants and their survival using mutants of the alternative oxidase of Arabidopsis" (2007-2009).

INSTITUTIONAL RESPONSIBILITIES

Since 2015 At the Faculty of Sciences, University of Lisbon Portugal:

- Member of the team leading the accreditation process of the Biology Degree.
- Responsible of the Genetics and Molecular Biology Degree

COMMISSIONS OF TRUST

Reviewer for the following journals

Journal of Plant Physiology
Plant Cell Reports
Theoretical and Applied Genetics
Physiologia Plantarum
Photosynthetica
Planta
BMC Genomics
Acta Physiologiae Plantarum
Phytochemistry
Plant Molecular Biology Reporter
Acta Biochimica et Biophysica Sinica
Plant Science
International Journal of Molecular Sciences
Austral Ecology
Environmental Science and Pollution Research
Plant Physiology and Biochemistry
Agronomy

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

Since 1999 Member of the Portuguese Societies of Plant Physiology and Biochemistry

CAREER BREAKS

2005 Birth licence (4 months)
2007 Birth licence (4 months)

Track record

Total number of publications: 32, h index: 14, citations:1063

<https://scholar.google.pt/citations?user=f1YVa0UAAAAJ&hl=pt-PT>

Publications:

32-Sebastiana M, Duarte B, Duarte B, Monteiro F, Matos A R (2019) The leaf lipid composition of ectomycorrhizal oak plants shows a drought-tolerance signature. Plant Physiology and Biochemistry DOI: 10.1016/j.plaphy.2019.09.032

31-Duarte, B.; Matos, A.R.; Pedro, S.; Marques, J.C.; Adão, H.; Caçador, I. (2019) Dwarf eelgrass (*Zostera noltii*) leaf fatty acid profile during a natural restoration process: Physiological and ecological implications Ecological Indicators 106:105452. doi: 10.1016/j.ecolind.2019.105452

30-Maia M, Ferreira AEN, Laureano G, Marques AP, Torres VM, Bernardes Silva A, Matos AM, Cordeiro C, Figueiredo A, Sousa Silva M (2019) *Vitis vinifera* ‘Pinot noir’ leaves as a source of bioactive nutraceutical compounds Food Funct. 17;10(7):3822-3827. doi: 10.1039/c8fo02328j.

29-Laureano G, Figueiredo J, Cavaco AR, Duarte B, Caçador I, Malhó R, Sousa Silva M, Matos AR, Figueiredo A. (2019) The interplay between membrane lipids and phospholipase A family members in grapevine resistance against *Plasmopara viticola*. Sci Rep. 28;8(1):14538. doi: 10.1038/s41598-018-32559-z.

- 28-Duarte B, Prata D, Matos AR, Cabrita MT, Caçador I, Marques JC, Cabral HN, Reis-Santos P, Fonseca VF. (2019) Ecotoxicity of the lipid-lowering drug bezafibrate on the bioenergetics and lipid metabolism of the diatom *Phaeodactylum tricornutum*. *Sci Total Environ.* 10;650(Pt 2):2085-2094. doi:10.1016/j.scitotenv.2018.09.354.
- 27-Pérez-Romero JA, Duarte B, Barcia-Piedras JM, Matos AR, Redondo-Gómez S, Caçador I, Mateos-Naranjo E. (2019) Investigating the physiological mechanisms underlying *Salicornia ramosissima* response to atmospheric CO₂ enrichment under coexistence of prolonged soil flooding and saline excess. *Plant Physiol Biochem.* 135:149-159. doi: 10.1016/j.plaphy.2018.12.003.
- 26-Duarte B, Carreiras J, Pérez-Romero JA, Mateos E, Redondo SN, Matos AR, Marques JC, Caçador I. (2018) Halophyte fatty acids as biomarkers of anthropogenic-driven contamination in Mediterranean marshes: Sentinel species survey and development of an integrated biomarker response (IBR) index. *Ecological Indicators* 87, 86-96.
- 25-Vidigal P, Duarte B, Cavaco AR, Caçador I, Figueiredo A, Matos AR, Viegas W, Monteiro F. (2018) Preliminary diversity assessment of an undervalued tropical bean (*Lablab purpureus* (L.) Sweet) through fatty acid profiling. *Plant Physiol Biochem.* 132:508-514. doi: 10.1016/j.plaphy.2018.10.001.
- 24-Duarte B, Matos AR, Marques JC, Caçador I (2018) Leaf fatty acid remodeling in the salt-excreting halophytic grass *Spartina patens* along a salinity gradient. *Plant Physiology and Biochemistry* 124:112-116
- 23-Sebastiana M, da Silva AB, Matos AR, Alcântara A, Silvestre S, Malhó R (2018) Ectomycorrhizal inoculation with *Pisolithus tinctorius* reduces stress induced by drought in cork oak. *Mycorrhiza.* 28(3):247-258.
- 22-Duarte B, Cabrita MT, Vidal T, Pereira JL, Pacheco M, Pereira P, Canário J, Gonçalves FJM, Matos AR, Rosa R, Marques JC, Caçador I, Gameiro C. (2018) Phytoplankton community-level bio-optical assessment in a naturally mercury contaminated Antarctic ecosystem (Deception Island). *Mar Environ Res.* 140:412-421. doi: 10.1016/j.marenvres.2018.07.014.
- 21-Duarte, B., Martins, I., Rosa, R., Matos, A. R., Roleda, M. Y., Resuch, T. B. H., ... Jueterbock, A. (2018). Climate change impacts on seagrass meadows and macroalgal forestes: an integrative perspective on acclimation and adaptation potential. *Frontiers in Marine Science*, 5: 190. doi: 10.3389/fmars.2018.00190
- 20-Feijão E, Gameiro C, Franzitta M, Duarte B, Caçador I, Cabrita MT, Matos AR (2017) Heat wave impacts on the model diatom *Phaeodactylum tricornutum*: Searching for photochemical and fatty acid biomarkers of thermal stress. *Ecological Indicators* (in press) DOI: 10.1016/j.ecolind.2017.07.058
- 19- Esquivel MG, Matos AR, Marques Silva J (2017) Rubisco mutants of *Chlamydomonas reinhardtii* display divergent photosynthetic parameters and lipid allocation. *Applied Microbiology Biotechnology.* 101:5569-5580. <https://doi.org/10.1007/s00253-017-8322-5>
- 18- Figueiredo A, Martins J, Sebastiana M, Guerreiro A, Silva A, Matos AR, Monteiro F, Pais MS, Roepstorff P, Coelho AV (2017) Specific adjustments in grapevine leaf proteome discriminating resistant and susceptible grapevine genotypes to *Plasmopara viticola*. *Journal of Proteomics* 152:48-57. <https://doi.org/10.1016/j.jprot.2016.10.012>
- 17- Duarte B, Cabrita MT, Gameiro C, Matos AR, Godinho R, Marques JC, Caçador I (2017) Disentangling the photochemical salinity tolerance in *Aster tripolium* L.: connecting biophysical traits with changes in fatty acid composition. *Plant Biology.* 19:239-248. DOI: 10.1111/plb.12517
- 16- Gameiro C, Utkin AB, Cartaxana P, Marques da Silva J, Matos AR (2016). The use of laser induced chlorophyll fluorescence (LIF) as a fast and non destructive method to investigate water deficit in *Arabidopsis*. *Agricultural Water Management* 164 (1):127–136. <https://doi.org/10.1016/j.agwat.2015.09.008>
- 15- Utkin AB, Felizardo B, Gameiro C, Matos AR, Cartaxana P (2014) Laser induced fluorescence technique for environmental applications. *Proc. SPIE 9286, Second International Conference on Applications of Optics and Photonics*, 928609 doi:10.1117/12.2060250
- 14- Domingues N, Matos AR, Marques da Silva J, Cartaxana P (2012) Response of the diatom *Phaeodactylum tricornutum* to photooxidative stress resulting from high light exposure. *PLoS One.* 7(6):e38162. <https://doi.org/10.1371/journal.pone.0038162>
- 13- Scherer GF, Ryu SB, Wang X, Matos AR, Heitz T (2010) Patatin-related phospholipase A: nomenclature, subfamilies and functions in plants. *Trends in Plant Science.* 15: 693-700. <http://dx.doi.org/10.1016/j.tplants.2010.09.005>

- 12- Matos AR, Pham-Thi AT (2009) Lipid Deacylating Enzymes in Plants: Old Activities, New Genes. *Plant Physiology and Biochemistry*, Special issue "Plant Lipids" 47: 491–503. <https://doi.org/10.1016/j.plaphy.2009.02.011>
- 11- Matos AR, Mendes AT, Paula Scotti-Campos, Arrabaça JD (2009) Study of the effects of salicylic acid on soybean mitochondrial lipids and respiratory properties using the alternative oxidase as a stress-reporter protein. *Physiologia Plantarum* 137: 485–497. DOI: 10.1111/j.1399-3054.2009.01250.x
- 10- Hourton-Cabassa C, Matos AR, Arrabaça JD, Demandre C, Zachowski A, Moreau F (2009) Involvement of mitochondrial fatty acid composition in membrane basal and uncoupling protein mediated proton leaks. *Plant Cell Physiology* 50:2084-2091. <https://doi.org/10.1093/pcp/pcp144>
- 9- Costa-França M, Matos AR, d'Arcy-Lameta A, Passaquet C, Lichtlé C, Zuily-Fodil Y and Pham Thi AT (2008) Cloning and characterisation of drought-stimulated phosphatidic acid phosphatase genes from *Vigna unguiculata*. *Plant Physiology and Biochemistry* 46:1093-100. <https://doi.org/10.1016/j.plaphy.2008.07.004>
- 8- Matos AR, Gigon A, Laffray D, Pêtres S, Zuily-Fodil Y and Pham-Thi AT (2008) Effects of progressive drought stress on the expression of patatin-like lipid acyl hydrolase genes in *Arabidopsis* leaves. *Physiologia Plantarum* 134:110-120. DOI: 10.1111/j.1399-3054.2008.01123.x
- 7- Matos AR, Hourton-Cabassa C, Çiçek D, Rezé N, Arrabaça JD, Zachowski A and Moreau F (2007) Alternative oxidase involvement in cold stress response of *Arabidopsis thaliana* fad2 and FAD3+ cell suspensions altered in membrane lipid composition. *Plant Cell Physiology* 48: 856-865. <https://doi.org/10.1093/pcp/pcm061>
- 6- Aranha M, Matos AR, Mendes AT, Vaz Pinto V, Rodrigues CMP and Arrabaça JD (2007) Dinitro-o-cresol induces apoptosis-like cell death but not alternative oxidase expression in soybean cells. *Journal of Plant Physiology* 164:675-684. <https://doi.org/10.1016/j.jplph.2006.09.010>
- 5- Gigon A, Matos AR, Laffray D, Zuily-Fodil Y and Pham Thi A (2004) Effect of drought stress on lipid metabolism in the leaves of *Arabidopsis thaliana* (ecotype Columbia). *Annals of Botany (London)* 94: 345-351. doi: 10.1093/aob/mch150
- 4-Hourton-Cabassa C, Matos AR, Zachowski A, Moreau F (2004) The plant uncoupling protein homologues: a new family of energy-dissipating proteins in plant mitochondria. *Plant Physiol Biochem.* 42:283-290. <https://doi.org/10.1016/j.plaphy.2004.01.007>
- 3- Matos AR, d'Arcy-Lameta A, França M, Pêtres S, Edelman L, Kader J, Zuily-Fodil Y, Pham-Thi AT (2001) A novel patatin-like gene stimulated by drought stress encodes a galactolipid acyl hydrolase. *FEBS Letters*. 491:188-192. DOI: 10.1016/S0014-5793(01)02194-9
- 2- Marcel GC, Matos AR d'Arcy-Lameta A, Kader JC, Zuily-Fodil Y and Pham-Thi AT (2000) Two novel plant cDNAs homologous to animal type-2 phosphatidate phosphatase are expressed in cowpea leaves and are differently regulated by water deficits. *Biochemical Society Transactions* 28: 915-7. DOI: 10.1042/bst0280915
- 1- Matos AR, d'Arcy-Lameta A, Franca M, Zuily-Fodil Y and Pham-Thi AT (2000) A patatin-like protein with galactolipase activity is induced by drought stress in *Vigna unguiculata* leaves. *Biochemical Society Transactions* 28: 779-81. DOI: 10.1042/bst0280779