

CURRICULUM VITAE

Ana Maria de Jesus Bispo Varela Coelho

Professional Address:

Instituto de Tecnologia Química e Biológica

Mass Spectrometry Laboratory

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Date and place of birth: 2nd May 1964, Lisbon, Portugal

Nationality: Portuguese

Education (degrees, dates, universities):

- Dipl. on Biochemistry, 1987, FCUL- University of Lisbon, Portugal
- Ph. D. on Chemistry-Biochemistry, 1998, University of Évora, Portugal

Employment Career:

- Professor Assistant, University of Évora, from 1990 to 1998
- Assistant Professor, University of Évora, 1998-2010
- Invited Assistant Professor, ITQB-UNL, 2002-2010
- Assistant Researcher, Instituto de Tecnologia Química e Biológica - Universidade Nova de Lisboa, since 2010

Present Position and Related Duties:

- Mass Spectrometry Laboratory Coordinator, ITQB-UNL, from 2002
- ITQB/UNL Analytical Services Committee Member (2003-2005)
- ITQB/UNL Infra-Structure Support Committee Member (2002-2006)
- Technical responsible of Mass spectrometry Laboratory– Analytical Services Unit certified in Good Laboratory Practices according with OCDE principles (since 2006)
- ITQB representative in the National Network for Mass Spectrometry (since 2005)
- Member of the management Committée of “Mass Spectrometry Imaging: New Tools for Healthcare Research”, Cost Action BM1104 (since 2011)

Specialization:

Main field: Mass spectrometry, proteomics, protein structural characterization, tissue/organ regeneration

Current research interests: Implementation and development of MS methodologies and its applications to the study of biological systems, in particular with biomedical applications, namely tissue and organ regeneration. Development of protein characterization methods, namely in what concerns post-translational modifications and de novo sequencing of proteins, a relevant issue for the proteome characterization of non-sequenced species.

PhDs and Post-docs Supervision:

- Research assistant R. Soares, since 2009
- Research assistant P. Boross, 2009-2010
- Pos-doc A. Campos “Proteomic analysis of chloroplast differentiation in *Z. mays* L.”, 2005-2008
- Post-doc R Santos “Characterization of sea urchins temporary adhesives by mass-spectrometry-based proteomics”, 2006-2009
- Post-doc R Gomes “Transthyretin Misfolding and Aggregation in vivo: Molecular and Cellular Clues for Amyloidogenesis”, 2008-2011
- Post-doc R Soares “Development and validation of methods for the characterization and quantification of biopharmaceuticals by soft ionization mass spectrometry”, 2008-2009
- Post-doc K Koci “Development and validation of methods for the characterization and quantification of peptides”, 2009-2011 and “Identification and characterization of bioactive peptides from starfish cell free coelomic fluid”, 2012
- Post-doc I Marcelino “Identification of vaccine candidates against *Ehrlichia ruminantium* using high-throughput proteomic analysis: a complementary approach to genome-based strategies for an improved Heartwater vaccine development”, since 2010
- Post-doc C Franco “ProteOMICS functional annotation of sea star tissues proteins during arm re-growth – Protein post-translational modifications (PTMs) dynamics in the regeneration events of echinoderms”, since 2012
- PhD student G da Costa “Structural and functional characterization of *Drosophila melanogaster* kinetocore”, 2003-2008
- PhD student E Lamy “Saliva role on the taste of phenolic compounds”, 2004-2009
- PhD student P Alves “Cystic Fibrosis by Proteomics: identification of molecular targets for therapeutic intervention”, 2004-2009
- PhD student S Mota “Study of the influence that the siRNAs have in the replication of the hepatitis delta virus and analysis of the genetic expression of infected cells”, 2004-2009

- PhD student D Toubarro “ Study of a nematode infection process using proteomic and genomic approaches”, 2006-2010
- PhD student C Franco “Proteomics based approach to understand tissue regeneration – sea star as a model organism”, 2007-2011
- PhD student M Mendes “Analysis of changes in the host cell proteome during hepatitis D virus infection”, 2008-2011
- PhD student N Couto “Study of the interaction between the multiresistent bacteria *Staphylococcus pseudintermedius* and its canine host in an ex-vivo cutaneous model”, since January 2011

Master supervision:

- J Martins “Identification of coelomocytes differentially expressed proteins during the regeneration of sea-star *Marthasterias glacialis*”, since September 2011
- R Laires “Characterization of coelomic fluid composition during the regeneration of sea-star *Marthasterias glacialis*”, since February 2012

Teaching Activities:

- Laboratory and exercise classes of several curricular units of several Graduation Courses - *Chemistry I, Biochemistry and Bioinorganic Chemistry, Metabolism and Energetics and Biochemistry I*, Évora University, 1990 - 1998
- Coordination of several curricular units of several Graduation Courses - *Chemistry I, Biochemistry and Bioinorganic Chemistry, Metabolism and Energetics, Biochemistry I, General Biochemistry and Biochemistry*, Évora University, 1998- 2002
- Module on *Mass Spectrometry* for the *Bioinformatics Post-Graduation Course* under the joint responsibility of the Faculty of Sciences, University of Lisbon and Gulbenkian Institute of Sciences, 2003-2005
- Module on *Analytical Methods for the Characterization of Recombinant Proteins* included in the *Master Course on Regulation and Evaluation of Pharmaceuticals and Health Products*, Faculty of Pharmacy, University of Lisbon, 2006
- Module on *Mass Spectrometry* for the *Course on Proteomics in Life Sciences, International Postgraduated Programme*, School of Health Sciences, University Minho, 2006
- Module on *Mass Spectrometry* included in the *Master Course on Biomedical Inorganic Chemistry* under the joint responsibility of the Faculty of Sciences, University of Lisbon and Institute for Nuclear Technology, 2004-2007

- Module on *Mass Spectrometry* included in the *Master Course on Molecular Genetics*, University of Minho, 2007
- Module on *Protein identification by Mass Spectrometry* of the curricular unit on *Methods of Molecular Analysis* included in the *Master Course on Functional Biology*, Agronomic Institute, Technical University of Lisbon, 2007
- Module on *Mass Spectrometry* included in the *ITQB PhD Programe*, since 2003
- Module on *Protein identification by Mass Spectrometry* of the curricular unit on *Transcriptomics and Proteomics* included in the *Master Course on Functional Biology*, Agronomic Institute, Technical University of Lisbon, 2006-2010
- Module on *Protein identification by Mass Spectrometry* of the curricular unit on *Transcriptomics and Proteomics* included in the *Master Course on Clinical Assays*, Faculty of Pharmacy, University of Lisbon, 2007-2010
- Module on *Protein identification by Mass Spectrometry* of curricular unit on *Laboratorial Techniqes in Chemistry and Biochemistry* included in the *Master Course on Animal Production Engineering*, Agronomic Institute, Technical University of Lisbon, 2008-2010
- Module on *Protein identification by Mass Spectrometry* included in the *Annual PhD Programe on Computational Biology*, Gulbenkian Institute of Sciences, 2008-2011

Participation in Master and PhD examinations:

- Master Thesis on Molecular Microbiology "*Immunologic response of Drosophila melanogaster: a proteomic approach*", University of Aveiro, S P Guedes, 2004
- Master Thesis on Biology "*Detection of proteins from the resistant and infection state of Steinernema Carpocapsae*", University Açores, JM Martins, 2005
- Master Thesis on Molecular Biotechnology "*Influence of the HDV genomic and antigenomic RNA expression in human liver cells proteome*", IST-Technical University of Lisbon, M L Mendes, 2006
- Master Thesis on Cell Biology and Biotechnology "*A study of the differentially expressed proteins during the induction of somatic embryogenesis in Medicago truncatula – a proteomic approach*", Faculty of Sciences - University of Lisbon, J Salvado, 2008
- Master Thesis on Bioinformatics and Computational Biology "*Protein identification in FTMS: a new scoring system and data analysis platform development*" Faculty of Sciences - University of Lisbon, J Canhita, 2009
- Master Thesis on Cell Biology and Biotechnology "*Differential Proteomics: A study in M truncatula somatic embryogenesis*", Faculty Sciences-University of Lisbon, M Ventosa, 2010

- Master Thesis on Cell Biology and Biotechnology "*M truncatula* and water deficit: exploring a new method for trehalose 6-phosphate quantification and characterization of three abscisic acid responsive promoters", Faculty Sciences-University of Lisbon, A Alcântara, 2011
- Master Thesis on Cell Biology and Biotechnology "Investigation of the effects of weight loss on *Ovis aries* muscle – A proteomic study on three breeds with different levels of adaptation to nutritional stress", Faculty of Sciences - University of Lisbon, R Palhinhas, 2011
- PhD Thesis on Biology "Analysis of protein expression in *Olea europaea* L., a proteomic approach", ITQB-New University of Lisbon, A M O Campos, 2005.
- PhD Thesis on Sciences "Biomechanical study of adhesion in sea urchins (Echinodermata, Echinoidea), and its relationship with other species distribution in the wave-swept environment", University of Mons-Halnaut, Belgium, R Santos, 2005
- PhD Thesis on Biochemistry "Biochemical effects of protein glycation by methylglyoxal in *Saccharomyces cerevisiae*", Faculty of Sciences - University of Lisbon, R Gomes, 2008
- PhD Thesis on Biochemistry "Structural and functional characterization of *Drosophila melanogaster* kinetocore", ITQB – New University of Lisbon, G da Costa, 2008
- PhD Thesis on Animal Production "Salivary proteomic as a tool to understand ingestive behavior: an experimental study in sheep (*Ovis aries*), goat (*Capra hircus*) and mice (*Mus musculus*)", University of Évora, E Lamy, 2009
- PhD Thesis on Biomedical Sciences "Study of the influence that the siRNAs have in the replication of the hepatitis delta virus and analysis of the genetic expression of infected cells", IHMT – New University of Lisbon, S Mota, 2009
- PhD Thesis on Biochemistry "Cystic Fibrosis by Proteomics: identification of molecular targets for therapeutic intervention", ITQB – New University of Lisbon, P Alves, 2009
- PhD Thesis on Biochemistry "Protein glycation and methylglyoxal metabolism in Parkinson's disease" Faculty of Sciences - University of Lisbon, H Miranda, 2010
- PhD Thesis on Biochemistry "Development of new methodologies in sample treatment for proteomics workflow based on enzymatic probe sonication technology and MS" Faculty of Sciences and Technology – New University of Lisbon, R Carreira, 2011
- PhD Thesis on Biomedical Sciences "Analysis of changes in the host cell proteome during hepatitis D virus infection" IHMT- New University of Lisbon, M Mendes, 2011
- PhD Thesis on Biology "Towards the identification of biomarkers for cystic fibrosis by proteomics" Faculty of Sciences - University of Lisbon, N Charro, 2011
- PhD Thesis on Biochemistry "Effects of gold nanoparticles on oxidative stress" Cork University (Ireland), W Hu, 2012

- PhD Thesis on Marine Zoology “Gene expression and regeneration in ophiuroids: A study of transcriptional activity and regeneration in the temperate *Amphiura filiformis* and Antarctic *Ophionotus victoria*” Gotheborg University (Sweden), G Burns, 2012
- PhD Thesis on “Characterization of lipophorin in lepidopteran insect silkworm, *Bombyx mori* and its role in lipid transport to developing oocytes” Bharathidasan University (India), T Pratheep, 2012

Organization of Courses and Scientific Meetings

- 2nd Annual Meeting of Portuguese Proteomic Network-Procura, Lisbon, 2004
- “Identification of proteins using mass spectrometry data – practical course” in collaboration with Thermo Finnigan, Oeiras, 2005
- “Workshop on behalf of the National Network for Mass Spectrometry” in collaboration with Faculty of Sciences University of Lisbon and University of Aveiro, Oeiras, 2005
- 3rd Annual Meeting of Portuguese Proteomic Network-Procura, Lisbon, 2005
- First and Second RNEM Course on Protein Identification by Mass Spectrometry, ITQB – New University of Lisbon, Oeiras, 2010 and 2011
- 4th European Association for Proteomics Meeting "2010 Proteomics Odyssey toward next decades", Estoril, 2010

Referee of Scientific Journals

- Journal of Chromatography (Elsevier)
- Journal of Proteome Research (ACS Publications)
- Rapid Communications in Mass Spectrometry (Wiley)
- Analytica Chimica Acta (Elsevier)
- Proteome Science (open access journal)
- International Journal of Primatology (Springer)
- Journal of Agricultural and Food Chemistry (ACS Publications)
- Journal of Food Science (IFT)
- Expert Reviews

Project Evaluation

- Agencia Nacional de Investigación e Innovación de Uruguay, 2012

Colaborations and Projects:

EUROPEAN PROJECTS

- “Converting C₃ to C₄ photosynthesis for sustainable agriculture”, Funded under 7th FWP (Seventh Framework Program), Project Ref: 289582, 2012-2017
- “Biological adhesives: from biology to biomimetics”, Cost Action TD0906, 2010 – 2014
- "Farm Animal Proteomics", Cost Action FA1002, 2010-2014
- “Mass Spectrometry Imaging: New Tools for Healthcare Research”, Cost Action BM1104, 2011-2015

INTERNATIONAL NETWORKS

- “Novel Probio – nuevos productos para alimentation animal”, CYTED Network, 2012

INTERNATIONAL BILATERAL COLLABORATIONS

- “Protein interactions studies by mass spectrometry”, Bilateral Colaboration with University of Southern Denmark, supported by GRICES (Portugal) and DANISH RECTOR’S CONFERENCE, (2004)
- “Caracterização da transglutaminase em Zea maiz L. e identificação de proteínas inter actuantes”, Bilateral Colaboration with Departamento de Genética Molecular, Instituto de Biologia Molecular de Barcelona (Consorti CSIC-IRTA) GRICES, (2006-2009)
- Luso-Spanish Integrated Action with University Autónoma de Barcelona “Proteomic study of the cell mechanisms involved in the agregation of yeast proteins”, Ref: E-36/11, 2011-2012
- Luso-French Integrated Action with CIRAD “Identification of *Rickettsiales Ehrlichia ruminantium* outer membrane proteins using a proteomic strategy“, TC-04/12, 2012-2013
- Luso-Slovakian Bilateral Collaboration: “Study of evasion strategies from the complement system by *Borrelia* e *Francisella*” Ref: 441.00, 2011-2012

OTHER INTERNATIONAL PROJECTS

- “Parkinson’s Disease Proteomics”, Center for Human Genetics, Duke University Medical Center, USA.

RESEARCH CONTRAT WITH INDUSTRY

- “Identification of biomarkers using proteomic and transcriptomic approaches”, in collaboration with the Faculty of Medical Sciences – New University of Lisbon and Abbott Laboratories (since 2012)

NATIONAL PROJECTS

- “Application of new phasing methods to explore structural diversity in the cytochrome family”, supported by program PRAXIS, P/BIO/12080/1998 (2000-2003)

- “Efeito de compostos fenólicos na sensibilidade gustativa: estudos de cinética celular e adaptações químicas e morfológicas da cavidade bucal”, supported by program SAPIENS, POCTI/1999/CVT/33039 (2001-2003)
- “Mecanismos de resposta a oxigénio e ferro em procariotas anaeróbicos”, supported by program SAPIENS, BIO/36558/99-00 (2000-2003)
- “Estudo da estrutura e função das proteínas centrossomais HsMob na divisão celular”, supported by program SAPIENS (2002-2004)
- “Structural characterization of MrkD protein from *Klebsiella pneumoniae* : implications in the epithelial adhesion properties of the microorganism”, supported by program SAPIENS (2003-2005)
- “In search of new molecular targets for the development of novel therapeutic strategies for cystic fibrosis”, supported by program POCTI, MGI/40878/2001 (2002-2005)
- “Genetics, Stoicheometry and Kinetics of Multiple Protein Assembly: the case for a Rotavirus Like Particle”, supported by program POCTI, FCT/POCTI/BIO/55975/2004, (2004-2007)
- “Proteomics of Chronic Lung Diseases Leading to Biomarkers and Therapeutic Target Discovery”, supported by program POCTI, POCTI/SAU-MMO/56163/2004, (2004-2007)
- “Mould proteome regulation by substrate bioavailability: depolymerising enzymes likely to alter biopolymer nanostructure”, supported by program POCTI, POCTI/QUI/56229/2004, (2004-2007)
- “Gene expression changes during hepatitis delta virus infection. I. Analysis of the cellular proteome.”, supported by program POCTI, POCTI/SAU-IMI/55112/2004, (2004-2007)
- “Diversity of *Medicago*-nodulating rhizobial strains from Southern Portugal”, project supported by ITQB, IBET e EAN, (2005-2006)
- “Enzymatic Degradation and Synthesis of Azo and Antraquinonic Dyes”, PTDC/BIO/72108/2006, September 2007-August 2010
- “BIOSEAGLUE – Caracterização dos adesivos temporários dos ouriços do mar por espectrometria de massa”, supported by Programa Damião de Góis
- “Protein glycation and transthyretin amyloidogenesis in yeast: A model system of neurodegenerative amyloid diseases”, PTDC/QUI/70610/2006
- “Investigating a Q-cycle mechanism in complexes of respiratory chains – A key process for energy transduction”, PTDC/BIA-PRO/66557/2006
- “Molecular characterization of organ regeneration in starfish – a proteomic approach toward the discovery of new regeneration factors”, PTDC/MAR/104058/2008

- “Plant responses to trace element toxicity: cellular mechanisms for detoxification and tolerance”, PTDC/AGR-AAM/102821/2008
- “Integration of transcriptomic, proteomic and metabolomics profiles to understand the role of T6P in the water deficit response and recovery in *Medicago truncatula*”, PTDC/AGR-GPL/099866/2008
- “Sustainable membrane bioreactors for advanced wastewater treatment: a molecular approach”, PTDC/EBB-EBI/098862/2008
- “ER_TRANSROT-Ehrlichia ruminantium proteome analysis: a complementary approach to transcriptomics towards increased knowledge on heartwater pathogenesis and vaccine development” PTDC/CVT/114118/2009, 2011-2014
- “Deciphering grain filling mechanisms in *Phaseolus vulgaris* L. under water deficit” PTDC/AGR-GPL/110244/2009, 2011-2014
- “Hepatic toxicity in HIV-infected individuals exposed to nevirapine” PTDC/SAU-TOX/111663/2009, 2011-2014
- CEDOC-FCM-UNL internal project “Biomarkers identification of anti-TNF agents efficacy in Ankylosing Spondylitis patients using a proteomic approach”, 2010-2011
- “Lactation and milk production in Goat (*Capra hircus*): identifying molecular markers underlying adaptation to seasonal weight loss” PTDC/CVT/116499/2010, 2012-2014
- “Borrow some Boron: New Strategies for Protein Modification!” PTDC/QUI-QUI/118315/2010, 2012-2014

Publications in Peer Reviewed Journals

- 1- MAAFCT Carrondo; B de Castro; **AM Coelho**; D Domingues; C Freire; J Morais "Electrochemical and Structural Studies of Nickel(II) Complexes with N₂O₂ Schiff Base Ligands derived from 2-Hydroxy-1-naphthaldehyde. Molecular Structure of N,N'-2,3-dimethylbutane-2,3-diyl-bis (2-hydroxy-1-naphthylideneimine) nickel (II)" *Inorganica Chimica Acta*, (1993), 205, 157.
- 2- **AV Coelho**; PM Matias; LC Sieker; J Morais; MA Carrondo; JL; C Costa; JJG Moura; I Moura "Preliminary crystallographic analysis and further characterization of a dodecaheme cytochrome c from *Desulfovibrio desulfuricans* ATCC 27774", *Acta Crystallographica*. (1996) D52, 1202-1208.
- 3- **AV Coelho**; PM Matias; MA Carrondo; P Tavares; JJG Moura; I Moura; V Fülöp; J Hajdu; J Le Gall "Preliminary crystallographic analysis of the oxidized form of a two mono-nuclear iron

centres protein from *Desulfovibrio desulfuricans* ATCC 27774", *Protein Science* (1996) 5, 1189-1191.

4- AV Coelho, P Matias, V Fülöp, A Thompson, A Gonzalez, MA Carrondo, "Desulfoferrodoxin structure determined by the MAD phasing and refinement to 1.9 Å resolution reveals a unique combination of a tetrahedral FeS₄ centre with a square pyramidal FeSN₄ centre", *Journal of Biological Inorganic Chemistry* (1997) 2, 680-689.

5-PM Matias, J Morais, **AV Coelho**, R Meijers, A Gonzalez, AW Thompson, L Sieker, J LeGall, MA Carrondo "A preliminary analysis of the three dimensional structure of dimeric di-heme split-Soret cytochrome c from *Desulfovibrio desulfuricans* ATCC 27774 at 2.5 Å resolution using the MAD phasing method: a novel cytochrome fold with a stacked heme arrangement", *Journal of Biological Inorganic Chemistry* (1997) 2, 507-514.

6-PM Matias, R Coelho, IAC Pereira, **AV Coelho**, AW Thompson, LC Sieker, J Le Gall, MA Carrondo "The primary and three dimensional structure of a nine-haem cytochrome c from *Desulfovibrio desulfuricans* ATCC 27774 reveal a new member of the Hmc family", *Structure* (1999) 7, 119-130.

7-PM Matias, LM Saraiva, CM Soares, **AV Coelho**, J LeGall, MA Carrondo "Nine-haem cytochrome c from *Desulfovibrio desulfuricans* ATCC 27774: primary sequence determination, crystallographic refinement at 1.8 Å and modelling studies of its interaction with the tetrahaem cytochrome c₃", *Journal of Biological Inorganic Chemistry* (1999) 4, 478-494.

8-AV Coelho, S Macedo, PM Matias, AW Thompson, J LeGall, MA Carrondo "Structure determination of bacterioferritin from *Desulfovibrio desulfuricans* by the MAD method at the Fe K-edge" *Acta Crystallogr D Biol Crystallogr.*, (2001), 57(Pt 2):326-9.

9- PM Matias, **AV Coelho**, FMA Valente, D Plácido, J LeGall, AV Xavier, IAC Pereira, MA Carrondo "Sulfate respiration in *D vulgaris* Hildenborough – Structure of the 16-heme cytochrome c HmcA at 2.5 Å resolution and view of its role in transmembrane electron transfer", *J. Biol. Chem.* (2002) 277, 47907-47916.

10- IA Abreu, AI Lourenço, AV Xavier, J LeGall, **AV Coelho**, PM Matias, DM Pinto, MA Carrondo, M Teixeira and LM Saraiva "A novel iron centre in the split-Soret cytochrome c from *D desulfuricans* ATCC 27774", *J. Biol. Inorg. Chem.* (2003), 8, 360-370

11- Palma AS, Morais VA, **Coelho AV**, Costa J "The effect of the manganese ion on human α_{3/4} fucosyltransferase III activity", *Biometals*, (2004), 17, 35-43

12- IJ Correia, CM Paquete, **A Coelho**, CC Almeida, T Catarino, RO Louro, C Frazão, LM Saraiva, MA Carrondo, DL Turner, and AV Xavier "Proton-assisted Two-electron Transfer in Natural Variants of Tetraheme Cytochromes from *Desulfomicrobium* Sp.", *J. Biol. Chem.*, (2004); 279: 52227 – 52237

- 13- AP Rauter, A Martins, C Borges, J Ferreira, J Justino, M-R Bronze, **AV Coelho**, YH Choi, R Verpoorte "LC-DAD-ESI MS/NMR analyses of the anti-hyperglycemic flavonoid extract of *Genista tenera*. Structure elucidation of a flavonoid-8-C-glycoside", *J Chromatography A*, (2005), 1089(1-2): 59-64
- 14-FMA Valente, A Sofia F Oliveira, N Gnadt, I Pacheco, **AV Coelho**, AV Xavier, M Teixeira, CM Soares and IAC Pereira "Hydrogenases in *D vulgaris* Hildenborough – Structural and physiologic characterization of the membrane-bound [NiFeSe] hydrogenase" *J Biol Inorganic Chem*, (2005), 10(6):667-82
- 15- Teixeira DM, Patao RF, **Coelho AV**, da Costa, CT "Comparison between sample disruption methods and solid-liquid extraction (SLE) to extract phenolic compounds from *Ficus carica* leaves" *Journal of Chromatography A* (2006) 1103 (1): 22-28
- 16-M Roxo-Rosa; G Costa; TM Luider; BJ Scholte; **AV Coelho**; MD Amaral; D Penque "Proteomic analysis of nasal cells from Cystic Fibrosis patients and non-CF control individuals: search for novel biomarkers of CF lung disease", *Proteomics* (2006) 6: 2314-25
- 17-MN Bravo, S Silva, **AV Coelho**, L Vilas Boas, MR Bronze "Production of Muscatel wines: Analysis of phenolic compounds by HPLC-DAD-FD-ED and MS" *Analytica Chimica Acta*, (2006) 563, 84-92
- 18-Coroadinha AS, Silva AC, Pires E, **Coelho A**, Alves PM, Carrondo MJ "The effect of osmotic pressure on the production of retroviral vectors: enhancement in vector stability." *Biotechnology and Bioengineering*, (2006) 94, 322-329
- 19-Miranda J, Nascimento E, Cruz H, Hong Y, **A. Coelho**, Ahmed J, Oliva A "Identification and characterization of merozoite antigens of a Theilerianbsp; species highly pathogenic for small ruminants in China." *Ann NYAcad Sci* (2006),1081:443-452
- 20-S. Silva, L Gomes, F. Leitão, **Ana V. Coelho**, L. Vilas Boas, "Phenolic compounds and antioxidant activity in *Olea europaea* L. fruits and leaves" *Food Science and Technology International*, (2006) 12, 385–396
- 21-F Li, R Delgado, **A Coelho**, MGB Drew and V Felix "New dioxadiaz-, trioxadiaz- and hexaaza-macrocycles containing dibenzofuran units" *Tetrahedron* (2006) 62, 8550–8558
- 22-R Gomes, H Vicente Miranda, M Sousa Silva, G Graça, **A Coelho**, A Ferreira, C Cordeiro, Ana Ponces Freire "Yeast protein glycation *in vivo* by methylglyoxal: Molecular modification of glycolytic enzymes and heat shock proteins" *FEBS J.* (2006);273(23):5273-87
- 23-Zhenjia C, Franco CF, Baptista RP, Cabral JMS, **Coelho AV**, Rodrigues CJ, Melo EP, "Purification and identification of cutinases from *C kahawae* and *C gloesporioides*" *Applied Microbiology and Biotechnology*, (2007), 73(6):1306-13

- 24-FM Valente, PM Pereira, SS Venceslau, M Regalla, **AV Coelho** and IA Pereira “The [NiFeSe] hydrogenase from *D vulgaris* Hildenborough is a bacterial lipoprotein lacking a typical lipoprotein signal peptide” *FEBS Letters* (2007); 581(18):3341-4
- 25-Santos SC, Vala I, Miguel C, Barata JT, Garção P, Agostinho P, Mendes M, **Coelho AV**, Calado A, Oliveira CR, e Silva JM, Saldanha C “Expression and subcellular localization of a novel nuclear acetylcholinesterase protein” *JBC* (2007); 282(35):25597-603
- 26-Gomes RA, Miranda HV, Sousa Silva M, Graça G, **Coelho AV**, do Nascimento Ferreira AE, Cordeiro C, Freire AP “Protein glycation and methylglyoxal metabolism in yeast: finding peptide needles in protein haystacks” *FEMS Yeast Res* (2008); 8(1): 174-181
- 27-Caldeira AT; Feio SS, Arteiro JM, **Coelho AV**, Roseiro JC “Environmental dynamics of *B amyloliquefaciens* CCMI 1051 antifungal activity under different nitrogen patterns” *J Appl Microbiol* (2008)104 (3):808-816
- 28-G da Costa, E Lamy, F Capela e Silva, J Andersen, E Sales Baptista, **AV Coelho** “Effect of tannin enriched diet on the expression of mouse salivary proteins” *J Chem Ecology* (2008) 34(3):376-87
- 29-E Lamy, G da Costa, F Capela e Silva, J Potes, **A V Coelho**, E Sales Baptista “Comparasion of Electrophoretic Protein Profile from Sheep and Goat Parotid Saliva” *J Chem Ecology* (2008) 34(3):388-97
- 30-M Mendes, S Mota, D Penque, **A Coelho**, C Cunha “Changes in the proteome of Huh7 cells induced by transient expression of hepatitis D virus RNA and antigens” *J proteomics* (2008);71(1):71-9
- 31-MCM Mellado, C Franco, **A Coelho**, PM Alves, AL Simplício “SDS-capillary gel electrophoresis analysis of rotavirus-like particles” *J Chromatography A*, (2008); 1192 (1); 166-172
- 32-Gomes RA, Oliveira LM, Silva MC, Ascenso C, Quintas A, Costa G, **Coelho AV**, Sousa Silva M, Ferreira AE, Ponces Freire A, Cordeiro C “Protein glycation in vivo: Functional and structural effects on yeast enolase” *Biochem J.* (2008), 416(3):317-26
- 33- Bravo MN, Feliciano R, Silva S, **Coelho AV**, Boas LV, Bronze MR “Analysis trans-resveratrol: Comparison of Methods and Contents in Muscatel Fortified Wines from Setubal Region in Portugal”, *Journal of Food Composition and Analysis*, 2008, 21(8), 634-643
- 34- Pereira L, **Coelho AV**, Viegas CA, dos Santos MMC, Robalo MP, Martins LO, Enzymatic Biotransformation of the Azo Dye “Sudan Orange G with Bacterial Cota-Laccase” *Journal of Biotechnology* (2009), 139(1):68-77

- 35- A M Almeida , S van Harten, A Campos, **A V Coelho**, L A Cardoso “The effect of weight loss on protein profiles of *gastrocnemius* muscle in rabbits: a study using 1D electrophoresis and Peptide Mass Fingerprinting”, *J Animal Physiology and Animal Nutrition* (2009) 87(2):196-9
- 36- R Santos, G da Costa, C Franco, P Alves, P Flammang, **AV Coelho** “First insights into the biochemistry of tube foot adhesive from the sea urchin *Paracentrotus lividus* (Echinoidea, Echinodermata)” *Marine Biotechnology* (2009), 11(6):686-98
- 37- S Mota, M Mendes, D Penque, N Freitas, **AV Coelho**, C Cunha “Proteome analysis of a human liver carcinoma cell line stably expressing hepatitis delta virus ribonucleoproteins” *J Proteomics*, (2009), 72(4):616-27
- 38- AM Almeida, A Campos, S van Harten, LA Cardoso, **AV Coelho** “Establishment of a proteomic reference map for the *gastrocnemius* muscle in the rabbit (*Oryctolagus cuniculus*)” *Research in Veterinary Science* (2009) 87(2):196-9
- 39- Toubarro D; Lucena-Robles M; Nascimento G; Costa G; Montiel R; **Coelho AV**; Simões N “An apoptosis-inducing serine protease secreted by the entomopathogenic nematode *Steinernema carpocapsae*” *International Journal for Parasitology* (2009) 39(12):1319-30
- 40- Marnoto Campos A; Costa G; **Coelho A**; Fevereiro P "Identification of bacterial protein markers and enolase as a plant response protein to infection of *Olea europaea* L. subsp. *europaea* by *Pseudomonas savastanoi* pv *savastanoi*" *Eur J Plant Pathol* (2009) 125(4), 603-616
- 41- Chaves I, Pinheiro C, Paiva JAP, Planchon S, Sergeant K, Renaut J, Graça JA, Costa G, **Coelho AV**, Ricardo CPP “Proteomic evaluation of wound-healing processes in potato (*Solanum tuberosum* L.) tuber tissue” *Proteomics* (2009) 9(17):4154-75.
- 42- Franco CF, Mellado MCM, Alves PM, **Coelho AV** “Monitoring virus-like particle and viral protein production by intact cell MALDI-TOF mass spectrometry” *Talanta* (2010) 80, 1561–1568
- 43- Lamy E, da Costa G, Santos R, Capela e Silva F, Potes J, Pereira A, **Coelho AV**, Sales Baptista E, “Sheep and goat saliva proteome analysis: A useful tool for ingestive behavior research?”, *Physiology & Behavior* (2009), 98(4):393-401
- 44- Gomes-Alves P, Neves S, **Coelho AV**, Penque D. “Low temperature restoring effect on F508del-CFTR misprocessing: A proteomic approach” *J Proteomics* (2009), 73(2):218-30
- 45- Pereira L, **Coelho AV**, Viegas CA, Ganachaud C, Iacazio G, Tron T, Robalo MP, Martins LO “On the Mechanism of Biotransformation of the Anthraquinonic Dye Acid Blue 62 by Laccases” *Adv. Synth. Catal.* (2009), 351, 1857 – 1865
- 46- A Campos, PK Carvajal-Vallejos, E Villalobos, CF Franco, AM Almeida, **AV Coelho**, JM Torne, M Santos “Characterisation of *Zea mays* L. plastidial transglutaminase: interactions with thylakoid membrane proteins” *Plant Biology* (2010), 12(5), 708 – 716

- 47- da Costa G, Gomes R, Correia CF, Freire A, Monteiro E, Martins A, Barroso E, **Coelho AV**, Outeiro TF, Ponces Freire A, Cordeiro C “Identification and quantitative analysis of human transthyretin variants in human serum by Fourier transform ion-cyclotron resonance mass spectrometry.” *Amyloid* (2009);16(4):201-7
- 48- Almeida AM, Campos A, Francisco R, van Harten S, Cardoso LA, **Coelho AV** “Proteomic investigation of the effects of weight loss in the gastrocnemius muscle of wild and NZW rabbits via 2D-electrophoresis and MALDI-TOF MS.” *Anim Genet.* (2010); 41(3):260-272
- 49- Perry MJ, Mendes E, Simplicio AL, **Coelho, A**, Soares RV, Iley J, Moreira R, Francisco AP “Dopamine- and tyramine-based derivatives of triazenes: Activation by tyrosinase and implications for prodrug design”, *European Journal of Medicinal Chemistry*, (2009), 44(8): 3228-3234
- 50- Matias A, Serra; Silva; Perdigão; Ferreira; Marcelino I; Silva S; **Coelho A**; Alves P; Duarte C “Portuguese winemaking residues as a potential source of natural anti-adenoviral agents” *International Journal of Food Sciences and Nutrition* (2010), 61(4):357-368
- 51- P Gomes-Alves; F Couto; C Pesquita; **AV Coelho**; D Penque “Rescue of F508del-CFTR by RXR-motif inactivation triggers proteome modulation associated with the unfolded protein response” *BBA- Proteins and Proteomics* (2010), 1804(4):856-865
- 52- S Silva, L Gomes, F Leitão, M Bronze, **A V Coelho**, L Vilas Boas “Secoiridoids in olive seed: characterization of nuzhenide and 11-methyl oleosides by liquid chromatography with diode array and mass spectrometry” *Grasas y Aceites*, (2010) 61 (2), 157-164
- 53- G da Costa, A Guerreiro, C F Correia, R J Gomes, A Freire, E Monteiro, E Barroso, **A V Coelho**, T F Outeiro, A Ponces Freire, C Cordeiro “A non-invasive method based on saliva to characterize TTR in FAP patients using FT-ICR high-resolution mass spectrometry” *Proteomics-Clinical Applications* (2010) 4(6-7):674-678
- 54- E Lamy, G da Costa, R Santos, F Capela e Silva, J Potes, A Pereira, **A V Coelho**, E Sales Baptista “Effect of condensed tannin ingestion in sheep and goat parotid saliva proteome” *Journal of Animal Physiology and Animal Nutrition* (2011), 95 (3), 304-312
- 55- A P Batista, C Franco, M Mendes, **A V Coelho**, M M Pereira “Subunit composition of *Rhodothermus marinus* respiratory complex I” *Anal Biochem* (2010) 407, 104-110
- 56- D Toubarro, M Lucena-Robles, G Nascimento, R Santos, R Montiel, **A V Coelho**, N Simões “A serine protease secreted by the parasitic nematode *Steinernema carpocapsae* is involved in host invasion” *Journal Biological Chemistry*, (2010) 285(40): 30666-30675
- 57- A M M Antunes, A L A Godinho, I L Martins, M C Oliveira, R A Gomes, **A V Coelho**, F A Beland, M M Marques “Protein adducts as prospective biomarkers of nevirapine toxicity”

Chemical Research in Toxicology, (2010) 23 (11):1714–1725

58- M Puerto, A M Campos, A Prieto, A Cameán, A Almeida, **A Coelho**, V Vasconcelos “Differential protein expression in two bivalve species, *Mytilus galloprovincialis* and *Corbicula fluminea*, exposed to *Cylindrospermopsis raciborskii* cells” *Aquatic Toxicology*, (2011) 101(1):109-116

59- E Lamy, G Graça, G da Costa, C Franco, F Capela e Silva, E Sales Baptista, **A V Coelho** “Changes in mice whole saliva soluble proteome induced by tannin-enriched diet” *Proteome Science* (2010) 8:65

60- E Lamy, ES Baptista, **AV Coelho**, F Capela e Silva Morphological alterations in salivary glands of mice (*Mus musculus*) submitted to tannin enriched diets: comparison with sialotrophic effects of sympathetic agonists stimulation, *Arq. Bras. Med. Vet. Zootec* (2010) 62 (4), 837-844

61- CF Franco; R Santos; **AV Coelho** Exploring the proteome of an echinoderm nervous system: 2DE of the sea star radial nerve cord and the synaptosomal membranes subproteome, *Proteomics* (2011) 11(7), 1359-1364

62- E Lamy, H Rawel, F J. Schweigert, F Capela e Silva, A Ferreira, A R Costa, C Antunes, A M Almeida, **A V Coelho**, E Sales Baptista The Effect of Tannins in Mediterranean Ruminant Ingestive Behavior: The Role of Oral Cavity, *Molecules*, (2011), 16: 2766-2784; (Review article to special issue: Tannins)

63- M Mau, A Martinho de Almeida, **A V Coelho**, K-H Sudekum First identification of tannin-binding proteins in saliva of *Papio hamadryas* using MS/MS mass spectrometry *American Journal of Primatology* (2011) 73(9):896-902

64- AM Almeida, JR Parreira, R Santos, AS Duque, R Francisco, DFA Tomé, CP Ricardo, **AV Coelho**, PS Fevereiro A proteomics study of the induction of somatic embryogenesis in *Medicago truncatula* using 2DE and MALDI-TOF/TOF, *Physiologia Plantarum* 2012, ISSN 0031-9317

65- CF Franco, R Santos, **AV Coelho** Proteome characterization of sea star coelomocytes – the innate immune effector cells of echinoderms, *Proteomics* (2011) 11(17):3587-92

66- LMA Oliveira, A Lages, RA Gomes, H Neves, C Família, **AV Coelho**; A Quintas, Insulin glycation by methylglyoxal results in native-like aggregation and inhibition of fibril formation, *Biochemistry* (2011)12:41

67- Ribeiro-Silva C, Gilberto S, Gomes RA, Mateus L, Monteiro E, Barroso E, **Coelho AV**, da Costa GA, Freire AP, Cordeiro C The relative amounts of plasma transthyretin forms in familial transthyretin amyloidosis: A quantitative analysis by Fourier transform ion-cyclotron resonance mass spectrometry *Amyloid*. (2011)18(4):191-9

- 68- da Costa G, Gomes RA, Guerreiro A, Mateus E, Monteiro E, Barroso E, **Coelho AV**, Freire AP, Cordeiro C Beyond Genetic Factors in Familial Amyloidotic Polyneuropathy: Protein Glycation and the Loss of Fibrinogen's Chaperone Activity PLoS One. 2011;6(10):e24850
- 69- Caldeira, A. T., Arteiro, J. M. S., Coelho, A. V., and Roseiro, J. C. Combined use of LC-ESI-MS and antifungal tests for rapid identification of bioactive lipopeptides produced by *Bacillus amyloliquefaciens* CCMI 1051, Process Biochemistry (2011) 46, 1738-1746
- 70- I Marcelino, A Martinho de Almeida, C Brito, DF Meyer, M Barreto, C Sheikboudou, CF Franco, D Martinez, T Lefrançois, N Vachiéry, MJT Carrondo, **AV Coelho**, PM Alves Proteomic analyses of *Ehrlichia ruminantium* highlight differential expression of MAP1-family proteins in host endothelial cells, Veterinary Microbiology, (2012) 156(3-4), 305-14
- 71- I Marcelino, AM Almeida, M Ventosa, L Pruneau, DF Meyer, D Martinez, T Lefrançois, N Vachiéry, **AV Coelho** Tick-borne diseases in cattle: applications of Proteomics to develop new generation vaccines, J Proteomics, (2012) 75 (14): 4232-50 (Review article to special issue: Farm Animal Proteomics)
- 72- R Soares, C Franco, E Pires, M Ventosa, R Palhinas, K Koci, AM Almeida, **AV Coelho** Mass Spectrometry and Animal Science: Protein identification strategies and particularities of farm animal species, J Proteomics, (2012) 75 (14): 4190-4296 (Review article to special issue: Farm Animal Proteomics)
- 73- AR Ribeiro, A Barbaglio, MJ Oliveira, R Santos, **AV Coelho**, CC Ribeiro, IC Wilkie, MD Candia Carnevali, MA Barbosa Correlations between the biochemistry and the mechanical states of the sea-urchin ligament: a mutable collagenous tissue. Biointerphases, (2012) 7, 38
- 74- Cal P; Vicente J; Pires E; **Coelho A**; Veiros L; Cordeiro C; Gois P Iminoboronates: A New Strategy for Reversible Protein Modification. Journal American Chemical Society (2012) 134 (24):10299-10305
- 75- A F Silva, G Carvalho, R Soares, **A V Coelho**, M T Barreto Crespo (2012) Step-by-step strategy for protein enrichment and proteome characterisation of extracellular polymeric substances in wastewater treatment systems Appl Microbiol Biotechnol (2012) 95:767–776
- 76- A Guerreiro, G da Costa, R A Gomes, C Ribeiro-Silva, S Gilberto, E Mateus, E Monteiro, E Barroso, **A V Coelho**, A Ponces Freire, C Cordeiro α -Synuclein aggregation in the saliva of familial transthyretin amyloidosis: a potential biomarker Amyloid, (2012) 19, (2), 74-80
- 77- T Rosado, P Bernardo, K Koci, **AV Coelho**, MP Robalo, LO Martins Methyl syringate: An efficient phenolic mediator for bacterial and fungal laccases Bioresource Technology 124 (2012) 371–378
- 78- N Rainha, K Koci, **A V Coelho**, E Lima, J Baptista, M Fernandes-Ferreira “HPLC-UV-ESI-MS

analysis of phenolic compounds and antioxidant properties of *Hypericum undulatum* Schousb. ex. Willd in vitro shoot cultures” *Phytochemistry*, in press

79- CF Franco, R Soares, E Pires, R Santos, **A V Coelho** “Radial nerve cord protein phosphorylation dynamics during starfish arm tip wound healing events” *Electrophoresis*, in press, DOI: 10.1002/elps.201200274

Book Chapters:

1- Romana Santos, Elise Hennebert, **Ana Varela Coelho** and Patrick Flammang Functional, Surfaces in Biology- Cap “The echinoderm tube foot and its involvement in temporary underwater adhesion”, Editor S Gorb, Springer, 2009, pp.9-41

2- Sales Baptista E, Lamy E, Mau M, Capela e Silva F, **Coelho AV**, Behavioral and Chemical Ecology – Cap “Variation in salivary protein composition related to feeding behavior and its ecological implications” NOVA Publishers, 2009, pp 115-136

3- A Campos, AM Almeida, **AV Coelho**. Mitochondria: Structure, Functions and Dysfunctions – Cap “Blue Native PAGE, basis of the technique and its use in organelle study: the mitochondrial complexome. Mitochondria: Structure, Functions and Dysfunctions”. Edited by O.L. Svensson, Nova Science, Haupagge, NY, USA (2011) pp.975-982. ISBN:978-1-61668-346-7

4- Soares R, Pires E, Almeida AM, Santos R, Gomes R, Koči K, Franco CF, **Coelho AV**. Tandem Mass Spectrometry of peptides. In: Applications of Tandem Mass Spectrometry- its Principles and Applications, 2012 Jeevan K. Prasain (Ed.), ISBN: 978-953-51-0141-3, InTech. Available from: <http://www.intechopen.com/articles/show/title/tandem-mass-spectrometry-of-peptides>

5- Cunha C, **Coelho AV** (2012). Comparative proteome analysis of a human liver cell line stably transfected with Hepatitis D virus full-length cDNA. In *Liver Proteomics: Methods in Molecular Biology*; Djuro Josic and Douglas C. Hixson Eds. Humana Press, Volume 909, 205-225, DOI: 10.1007/978-1-61779-959-4_14.