

Curriculum Vitae- Paula M Alves

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1. Name Paula Marques Alves
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Date of Birth Born 26 July 1967 in Lisbon
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2. EDUCATION

1991 *Diploma Biochemistry*, Faculty of Sciences, University of Lisbon
2001 *PhD Biochemical Engineering*, ITQB - Instituto de Tecnologia Química e Biológica, New University of Lisbon.

3. POSITIONS

1995/2000 PhD student, ITQB-New University Lisbon, Portugal
2001/2005 Assistant Investigator, ITQB/IBET/IGC Associated Laboratory, Portugal
2001/2006 Co-Director, Animal Cell Technology Laboratory, ITQB-UNL/IBET,
2005/2006 Principal Investigator, ITQB/IBET/IGC Associated Laboratory, Portugal
2006/2009 Assistant Investigator, ITQB, New University of Lisbon, Portugal
2007/(...) Director, Animal Cell Technology Unit, Head of Cell Bioprocesses Laboratory, ITQB-UNL/IBET, Portugal.
2007/(...) Lecturer, MIT-Portugal Program.
2008/(...) Executive Director, IBET, Portugal.
2008/2009 Member of the Board, GenIBET Biopharmaceuticals, Portugal
2008/(...) Member Pedagogic Council, PhD Program, ITQB-UNL, Portugal
2009/2010 CSO, GenIBET Biopharmaceuticals, Portugal
2009/(...) Principal Investigator, ITQB-New University Lisbon, Portugal
2011/(...) Member Scientific Council, ITQB-UNL, Portugal.
2011/(...) Invited Associate Professor, Science and Technology Faculty, New University of Lisbon, Portugal.
2012/(...) CEO, IBET, Portugal.
2013/(...) Vice-President of the ESACT-European Society for Animal Cell Technology.

2013/(...) Chairman of the General Assembly of the SPCE-TC- Portuguese Society for Stem Cells and Cell Therapy.

4. ADVISORY POSITIONS

2006/(...) Evaluator for Research Grants (European Commission, The Wellcome Trust – UK/India, NSF- National Science Foundation – USA, ETMR-Scotland, A-Star, Singapore and BSRC, UK)

2008/(...) Member of the Board, Bio-entrepreneur Committee, New University of Lisbon, Portugal

2008/(...) IBET representative in “Health Cluster Portugal” board, Portugal

2009/(...) LAO representative in the “Steering Committee” of the Harvard Medical

2009 Member of the Evaluation panel for BSRC – Biotechnology and Biological Sciences Research Council - BRIC Bioprocessing Research Industry Club, United Kingdom.

2010/(...) Member of the Evaluation Panel for bilateral project grants, Fundação para a Ciência e Tecnologia, Portugal.

2011/(...) Member of the Health Evaluation Panel for LabEX - Laboratories of Excellence - National Research Agency, France.

2013/(...) Member of the Advisory Group for Horizon 2020 Societal Challenge 1- European Commission, Brussels.

5. ADVISORY POSITIONS IN SCIENTIFIC JOURNALS

2008/(...) Member of the Editorial Board of Journal of Biotechnology

2009/(...) Member of the Editorial Board of BMC Biotechnology

2001/(...) Scientific Reviewer for several journals, namely Applied Microbiology and Biotechnology; Biotechnology & Bioengineering; Biotechnology Letters; Biochimie, Biotechnology Progress; BMC Molecular Biology; Cytotechnology; Tissue Engineering, Brain Research, Journal of Neurochemistry, PLoS ONE, Vaccine, (...)

6. WORKING PERIODS ABROAD

Oct-Dec 1992 Biotechnology Laboratory of Animal Cells (working with Dr Bryan Griffiths), PHLS/CAMR, United Kingdom.

Jan-June 1994 Biomedical Laboratory of Magnetic Resonance Center (working with Prof Ursula Sonnewald), Sintef, Trondheim Hospital, Norway.

Jan-July 1995 Product Manager, Leica Microsystems, Portugal

Sept-Nov 1995 NMR Laboratory of the Chemistry Department of Bremen University (working with Prof Dieter Leibfritz), Germany.

May 1998 Biochemistry/NMR Laboratory, Biochemistry Department of Cambridge University (working with Dr Kevin Brindle), United Kingdom.

April 2002 Research and Development Department (working with Dr Otto Merten), Genethon, France.

June-Sep 2009 Visiting Scholar, MIT, Massachusetts Institute of Technology (working with Prof Daniel Wang and Prof Kristala Prather), Chemical Engineering Dept., USA.

7. OTHER COURSES

- 1990** Animal Cell Technology Course, Instituto de Biologia Experimental e Tecnológica, Oeiras, Portugal, September 1990.
- 1992** NMR FEBS Course, Centro de Tecnologia Química e Biológica/Instituto Gulbenkian de Ciência, Oeiras, Portugal, September 1992.
- 1995** Advances in Cell Culture for Clinic and Pharmaceutical Industry Course, Science & Technology International Courses, Leiden, The Netherlands, November 1995.
- 1996** Workshop on Brain Biophysics, Fundação Calouste Gulbenkian, Lisbon, Portugal, July, 1996.
- 2002** Therapeutic Vaccines Course, London, United Kingdom, January 2002.
- 2002** Gene Vectors EuroLab Course, Theoretical and practical training on gene vectors, Paris, France, April 2002.
- 2003** Stability Testing for Pharmaceutical Products Course, Pharmaceutical Training International, Londres, United Kingdom, October 2003.
- 2005** Stability Testing Requirements for Biotechnology Molecules Course, London, United Kingdom, January 2005.
- 2007** EMBO “Laboratory Management Course for Independent Scientists; The Art of Leadership – Fewer Conflicts, More Results”, Ericeira, Portugal, November 2007.
- 2009** Fermentation Technology Course, MIT, Cambridge, USA, July 2009.

8. AWARDS

- 2005** Scientific Award from the Portuguese association of French Doctorates.
- 2008** Scientific Merit Award from Santander Totta/ New University of Lisbon
- 2009** Scientific Merit Award from New University of Lisbon
- 2003-(...)** From the more than 300 posters presented in international conferences awarded with: four 1st, two 2nd and one 3rd best poster prizes.

9. PROFESSIONAL SOCIETIES

- ✧ Member of the European Society for Animal Cell Technology (ESACT), since 2003, Elected in June 2005 to the ESACT Executive Committee. Re-elected June 2007. Elected Secretary June 2009.
- ✧ Member of the Portuguese Society for Biochemistry, since 1995.
- ✧ Member of the American Society for Cell Biology, since 2005.
- ✧ Member of the American Association for the Advancement of Science, since 2006.
- ✧ Member of the International Society for Protein Expression in Animal Cells, since 2008
- ✧ Member of the European Society of Neurochemistry, since 2007.
- ✧ Member of the Portuguese Society for Stem Cells and Cell Therapy, since 2010.

10. RESEARCH INTERESTS:

Since 1995, Alves PM has focused her research on understanding cell metabolism to improve the efficiency of bioprocesses and at developing new tools and technologies for pre-clinical research. More recently (2005) this expertise was expanded to generate expansion and differentiation of stem cells (human embryonic and adult) in bioreactors. The Unit she coordinates uses Animal Cell Technology for research and development in particular for (i) production of complex biopharmaceuticals such as viral vectors, vaccines and recombinant proteins (ii) development of 3D culture systems for toxicity testing - using primary cultures of hepatocytes and brain cells - and for expansion and differentiation of stem cells in bioreactors

(iii) expand systems biology approaches to organize the complexity of the processes involved in the research described in (i) and (ii).

11. ROLE IN RESEARCH PROJECTS

Principal Investigator

- 2003-2006** “Metabolic Trafficking between Neurons and Astrocytes under Stress Conditions Implicated in Neurological Disorders”, funded by FCT, Portugal (POCTI/BIO/39214/2001).
- 2004-2006** “Integrated Strategy for the Production, Purification and Storage of Adenovirus”, funded by FCT, Portugal (POCTI/BIO/46515/2002).
- 2005-2007** “MARKVAC”, Development of Marker Vaccines, Companion Diagnostic Tests and Improvement of Epidemiological Knowledge to Facilitate Control of Rinderpest and Peste des Petits Ruminants Viruses, funded by EU (RP/PPR - MARKVAC).
- 2005-2007** “EPIGENEVAC”, Epidemiology and New Generation Vaccines for *Ehrlichia* and *Anaplasma* infections of Ruminants, funded by EU (FP6-2002-INCO-DEV-1 - EPIGENEVAC).
- 2006-2009** “BACULOGENE”, Baculovirus Vectors for Gene Therapy, funded by EU (FP6 - 2007) - Workpackage leader.
- 2007-2009** “Novel stroke model for neuroprotective research: bioreaction of primary brain cell aggregates” funded by FCT, Portugal (PTDC/BIO/69407/2006).
- 2009-2011** “Integrated strategy for expansion, neuronal differentiation and cryopreservation of human embryonic stem”, funded by FCT, Portugal (PTDC/BIO/72755/2006).
- 2009-2011** “Global HIV Vaccine Criorepository” by IBMT-Fraunhofer *plus* Bill & Melinda Gates Foundation.
- 2009-2012** “BRAINCAV” - Nonhuman adenovirus vectors for gene transfer to the brain”, funded by EU (FP7) - Workpackage leader.
- 2009-2012** “HYPERLAB” - High Yield and Performance Stem Cell Lab” funded by EU (FP7) - Workpackage leader.
- 2010-2014** “CAREMI” - Cardio Repair European Multidisciplinary Initiative”, funded by EU (FP7).
- 2011-2015** “ComplexINC”, New Technologies and Production Tools for Complex Protein Biologics”, funded by EU (FP7) - Workpackage leader.
- 2012-2014** “SpeCCC”, Specialised Cell Carrier Components”, funded by EU (FP7) - Workpackage leader.
- 2013-2015** “Combining siRNA and AAV therapy approaches to target human basal-like breast cancer: from vector development to anti-tumor efficacy evaluation”, PTDC/BBB-BIO/1240/2012, funded by FCT, Portugal.
- 2013-2016** “EPIGENESIS”, One Health approach to integrate Guadeloupe research on vector-borne and emerging diseases in the ERA: from characterization of emergence mechanisms to innovative approaches for prediction and control, funded by EU (FP7).
- 2013-2017** “EDUFLUVAC”, Combinatorial immunization strategy to educate the immune system towards cross recognition and coverage against antigenic drift in seasonal influenza virus exposure”, funded by EU (FP7) - Workpackage leader.
- 2014-2016** “CARDIOSTEM”, Engineered cardiac tissues and stem cell-based therapies for cardiovascular applications, MITP-TB/ECE/0013/2013, funded by Programa MIT | Portugal-FCT, Portugal.

From 2003 11 funded by pharmaceutical and/or biotechnology international companies.

Co-Principal Investigator (from 2001) 2 funded by FCT, Portugal; 5 funded by EU

Team Member (from 2000) 15 funded by FCT, Portugal; 6 funded by EU

12. INVITED KEYNOTES LECTURES

- [1] **Alves PM**, Bioengineering of Primary Cultures and Stem Cells” at the 21st Annual and International meeting of the Japanese Society for Animal Cell Technology, Fukouka; Japan, November 2008.
- [2] **Alves PM**, Bioengineering long term neuronal and hepatocytes spheroid cultures for pre-clinical research” at the 9th Conference on Protein expression in Animal Cells-PEACE, Jackson Hole, USA, September 2009.
- [3] **Alves PM** “Stem Cells for Drug Discovery and Cell Therapy: Bioprocessing Challenges”. 5th International Meeting of the Portuguese Society for Stem Cells and Cellular Therapies (SPCE-TC), Guimarães, Portugal, May 2010.
- [4] **ALVES PM**, "Tools to support development of PAT; identification of key analyticals in complex biological systems", 2nd Biberach Pharmaceutical Biotechnology Meeting, Germany, October 2013.
- [5] **ALVES PM** “Bioreactor-based 3D in vitro models for Drug Screening and Toxicology: towards prediction of hepatic drug metabolism and neurotoxicity”, 18th Congress of the European Society for Toxicology In Vitro, Egmond aan Zee, June 10-13 2014.
- [6] **ALVES PM** “Insect cell technology as a vaccine producing platform”, 16th European Congress on Biotechnology, Edinburgh, July 15-16 2014.

13. INVITED LECTURES

- [1] **ALVES PM** “Heterologous Gene Expression in Mammalian Cells”, 3rd European Biotechnology Workshop, Ittingen, Switzerland, September 2004.
- [2] **ALVES PM** “Modificações Pós-Tradução em Células Animais”, II Seminário Latino-Americano de Tecnologia de Cultivos Celulares, Instituto Butantan, São Paulo, Brazil, July 2006.
- [3] **ALVES PM** “Development of Biproceses for Complex Vaccines”, Production of Biopharmaceuticals in Animal Cell Cultures International Course, Universidade Federal do Rio de Janeiro, Brazil, July 2006.
- [4] **ALVES PM** “Insights on triple layer VLP’s production using Insect Cells/Baculovirus Expression System”, Instituto de Biotecnología UNAM, Cuernacava, México, June 2006.
- [5] **ALVES PM** “Modelling and Integrating Bioreaction and Downstream for RLP’s production”, 2nd European Rotavirus Biology Meeting, Djurönäset, Stockholm, Sweden, June, 2007.
- [6] **ALVES PM** “Cryopreservation for Cell Therapy” at IBMT Summer School, Fraunhofer Institute, St Ingbert, germany, Julho 2007.
- [7] **ALVES PM** “Cell Based Vaccines”, Production of Biopharmaceuticals in Animal Cell Cultures International Course, Universidade Federal do Rio de Janeiro, Brasil, July 2008.
- [8] **ALVES PM** “Development of quality control methods for baculovirus vectors” in Viral Vectors in Gene Therapy: Applications & Novel Production Methods Advanced

- Symposium and EMBO Practical Course; University of Eastern Finlandia, Kuopio, Finland, August 2010.
- [9] **ALVES PM** “Improving baculovirus production at high cell density through manipulation of energy metabolism”, Workshop - European Network on Viral Vaccine Processes (ENVVP), Frankfurt, Germany, October 2010
- [10] **ALVES PM**, “Bioengineering approaches for pre-clinical research”, BOKU, Vienna, May 2010.
- [11] **ALVES PM**, “Stem Cells for Drug Discovery and Cell Therapy: Bioprocess Challenges”, IV Seminário Latino-Americano de Tecnologia de Cultivos Celulares, Uruguai, 7-9 November 2010.
- [12] **ALVES PM** “Bioengineering stem cell cultivation: 3D approaches for pre-clinical research and cell therapy”, Animal Cell Biotechnology: Products from Cells – Cells as Products International Course, Institut Pasteur de Montevideo, Uruguai, 10-19 November 2010.
- [13] **ALVES PM** “Improvements on Peste des Petits Ruminants Vaccine stability during production and storage”, Biochemical Technology (BIOT) Division, 241st ACS National Meeting, Anaheim, March, 2011
- [14] **ALVES PM** “Stem Cells and Biotechnology or Cell therapy”, Course on Biotechnology, Spanish Society of Biotechnology (SEBIOT) and UIMP27, Santander, Spain, 11-12 July 2011.
- [15] **ALVES PM** “Stem Cells for in vitro Toxicology and Cell therapy”, Institute Pasteur Tunes, Tunisia, September 2011.
- [16] **ALVES PM** “Novel strategies for 3D neural culture and gene delivery: towards human central nervous system in vitro models for preclinical research”, 3D Cell Culture Conference, Zurich, March 14-16 2012.
- [17] **ALVES PM** “Human stem cells and primary cultures for drug discovery and cell therapy: Bioprocessing challenges”, Cell Culture Engineering XIII conference, Scottsdale, Arizona, April 22-27 2012.
- [18] **ALVES PM** “Applications of 3D cell cultures in fully controlled bioreactors – special emphasis on liver cells”, SEURAT-1 Summer School 2012, Oeiras, June 4-8 2012.
- [19] **ALVES PM** “Bioprocessing Challenges in Cell Therapy” ATMP-Advanced Therapy Medicinal Products, PDA Europe 2012, Cascais, June 5-6 2012.
- [20] **ALVES PM** “3D human cell models for pre-clinical research and long-term toxicity testing: towards prediction of hepatic drug metabolism and neurotoxicity”, IT-LIVER Workshop “3-Dimensional Cell Cultures and Drug Discovery, Austria, February 2014.
- [21] **ALVES PM** “Insect cell technology as a vaccine producing platform” Fondation Mérieux/Virus-like particles (VLPs) as vaccines, vectors and adjuvants, Lyon, France, April 2014.

14. INVITED LECTURES AT PHARMA & INDUSTRY

- [1] **ALVES PM** “Assessing Cell Metabolism for improved bioprocesses”, Lonza Biologics, Slough, UK, January 2005. Host: Andrew Racher.
- [2] **ALVES PM** “Downstream Processes for Complex BioPharmaceuticals”, Sartorius AG, Goettingen, Germany, January 2006. Host: Uwe Gottschalk.
- [3] **ALVES PM** “Improved in vitro Modes for Screening and Pre-clinical Research” Bayer Schering, Bayer HealthCare AG, Global Drug Discovery – LGO, Protein Therapeutics, Wuppertal, Alemanha, January 2008. Host: Karl Ziegelbauer.
- [4] **ALVES PM** “3-Models for Pre clinical Research”, Department Neurochemistry, Merck & Co, West Point, EUA, August 2008. Host: Yan Reynolds.

- [5] **ALVES PM** “Stem Cell Expansion and Differentiation in Stirred Tank Bioreactors”, Centocor, Horsham, EUA, August 2009. Host: Sadettin Ozturk.
- [6] **ALVES PM** “Bioprocess Development for the production of Biopharmaceuticals”, Bayer-Schering, Wupertal, Germany, December 2010. Host: Beate Müller-Tiemann.
- [7] **ALVES PM** “Bioprocess Development for the production of Vaccines”, Merial, Lyon, France, November 2011. Host: Zahia Hannas.
- [8] **ALVES PM** “3D Models for pre-clinical Research”, EMD Millipore, Boston, August 2012. Host: Robert Shaw
- [9] **ALVES PM** “Bioengineering Approaches for Stem cells: towards clinical applications”, Jansen, Philadelphia, August 2012. Host: Steven Lang

15. OTHER CV HIGHLIGHTS

- (i) **SUPERVISION:** 24 PhD Students (14 thesis defended), 12 Pos-Docs (from 2005-to date), 9 Master Students (8 thesis defended), 13 Diploma thesis, Coordination of Specialized Research Technicians.
- (ii) **MEMBER OF JURY PHD THESIS:** 26 juries in Portuguese Universities (12 as thesis supervisor, 2 as principal opponent), 4 juries abroad (as principal opponent) – Belgium, Germany and Austria Universities.
- (iii) Meeting Co-chair of **Vaccine Technology** (2008; 2010; 2012-ECI series conference); Member of the Scientific Advisory Board of the **ESACT, PEACE** and **RecProtein** International Meetings; Co-Coordinator of the **ESACT Animal Cell Technology Course** (2011, 2012, 2013, Barcelona)
- (iv) **Post-graduation teaching** in activities (PhD Programs, Master Courses, Advanced Courses) at several Portuguese Universities.
- (v) Approx. 25 invited lectures in Portuguese Universities, Institutes and Hospitals
- (vi) Dissemination of own research results in international conferences: approx. 70 oral communications (selected from submitted abstracts) and over 300 posters presented.
- (vii) Science and Society Activities: Participation at the “Ciência Aberta” initiatives (organized by Ministry da Ciência and Tecnologia), at several TV programs and debates about ethical issues associated to the use of stem cells and the implementation of the “Three Rs Principle”. Founding Member of the Organizing Committee of ITQB Open Day.

17. PUBLICATIONS

REFEREED ARTICLES (*CORRESPONDING AUTHOR)

1. RACHER AJ, MOREIRA JL, **ALVES PM**, WIRTH M, WEIDLE UH, HAUSER H., CARRONDO MJT, GRIFFITHS JB (1994) "Expression of Recombinant Antibody and Secreted Alkaline Phosphatase in Recombinant Animal Cells. Influence of Cell Line and Culture System upon Production Kinetics", *Applied Microbiology and Biotechnology*, **40**:851-856.
2. MOREIRA JL, **ALVES PM**, AUNINS JG, CARRONDO MJT (1994) "Changes in Animal Cell Natural Aggregates in Suspended Batch Cultures", *Applied Microbiology and Biotechnology*, **41**:203-209.
3. MOREIRA JL, **ALVES PM**, RODRIGUES JM, CRUZ PE, AUNINS JG, CARRONDO MJT (1994) "Studies of Baby Hamster Kidney Natural Cell Aggregation in Suspended Batch Cultures", *Annals of the New York Academy of Sciences*, **745**:122-133.

4. MOREIRA JL, ALVES PM, FELICIANO AS, CARRONDO MJT (1995) "Serum Free and Containing Medium for Growth of Suspended BHK Natural Aggregates in Stirred Vessels", *Enzyme Microbiology Technology*, 17:437-444.
5. MOREIRA JL, ALVES PM, AUNINS JG, CARRONDO MJT (1995) "Hydrodynamic effects on BHK cells grown as suspended natural aggregates", *Biotechnology and Bioengineering*, 46:351-360.
6. ALVES PM, MCKENNA MC, SONNEWALD U (1995) "Lactate Metabolism in Mouse Brain Astrocytes Studied by [¹³C] NMR Spectroscopy", *NeuroReport*, 6, 2201-2204.
7. ALVES PM, MOREIRA JL, RODRIGUES JM, AUNINS JG, CARRONDO, MJT (1996) "Two Dimensional versus Three-Dimensional Cultures Systems: Effects on Growth and Productivity of BHK Cells", *Biotechnology and Bioengineering*, 52:429-432.
8. ALVES PM, FLÖGEL U, BRAND A, LEIBFRITZ D, CARRONDO MJT, SANTOS H, SONNEWALD, U (1996) "Immobilization of Primary Astrocytes and Neurons for NMR Monitoring of Biological Processes in Vivo", *Developmental Neuroscience*, 18:478-483.
9. CRUZ PE, MARTINS PC, ALVES PM, PEIXOTO CC, SANTOS H, MOREIRA JL, CARRONDO MJT (1999) "Proteolytic Activity in Infected and non-Infected Insect Cells: Degradation of HIV-1 Pr55gag Particles", *Biotechnology and Bioengineering*, 65:133-143.
10. CRUZ HJ, PEIXOTO CM, NIMTZ M, ALVES PM, DIAS EM, MOREIRA JL, CARRONDO MJT (2000) "Metabolic shifts do not influence the glycosylation patterns of a recombinant fusion protein expressed in BHK cells" *Biotechnology and Bioengineering*, 69:129-139.
11. ALVES PM, FONSECA LL, PEIXOTO CM, ALMEIDA AC, CARRONDO MJT, SANTOS H (2000) "NMR Studies on Energy Metabolism of Immobilized Primary Neurons and Astrocytes during Hypoxia, Ischemia and Hypoglycemia", *NMR in Biomedicine*, 13:438-448.
12. CRUZ HJ, FREITAS CM, ALVES PM, MOREIRA JL, CARRONDO MJT (2000) "Effects of Ammonia and Lactate on Growth, Metabolism and Productivity of BHK Cells". *Enzyme Microbial and Technology*, 27:43-52.
13. ALVES PM, NUNES R, HONG ZC, MAYCOCK CD, SONNEWALD U, CARRONDO MJT, SANTOS H (2000) "Metabolism of [3-¹³C] malate in primary cultures of mouse astrocytes", *Developmental Neuroscience*, 22:456-462.
14. FONSECA LL, ALVES PM, CARRONDO MJT, SANTOS H (2001) "Effects of Ethanol on the Metabolism of Primary Astrocyte Cultures Studied by ¹³C and ³¹P NMR Spectroscopy" *Journal of Neuroscience Research*, 66:803-811.
15. CARVALHAL AV, COROADINHA AS, ALVES PM, MOREIRA JL, HAUSER H, CARRONDO MJT (2002) "Metabolic Changes during Cell Growth Inhibition by the IRF 1 system", *Enzyme and Microbial Technology*, 30: 95-109.
16. MOREIRA JL, MIRANDA PM, MARCELINO I, ALVES PM, CARRONDO MJT (2003) "Culture Methods for Mass Production of Ruminant Endothelial Cells", *Fermentation Biotechnology - ACS*, 862:124-141.
17. CARMO M, PEIXOTO C, COROADINHA AS, ALVES PM, CRUZ PE, CARRONDO MJT (2004) "Quantitation of MLV-based retroviral vectors using real-time RT-PCR", *Journal of Virological Methods*, 119:115-119.

18. SÁ SANTOS S, FONSECA LL, MONTEIRO MAR, CARRONDO MJT, ALVES PM* (2005) "Culturing primary brain astrocytes under fully controlled environment in a novel bioreactor", *Journal of Neuroscience Research*, 79:26-32.
19. PEIXOTO CC, MARCELINO I, SOUSA MQ, VACHIÉRY N, BENSALD A, MARTINEZ D, CARRONDO MJT, ALVES PM* (2005) "Quantification of *Ehrlichia ruminantium* by Real Time PCR", *Veterinary Microbiology*, 107:273-278.
20. FONSECA LL, MONTEIRO MAR, ALVES PM, CARRONDO MJT, SANTOS H (2005) "Cultures of rat astrocytes challenged with a steady supply of glutamate: a new model to study flux distribution in the glutamate-glutamine cycle", *Glia*, 51:286-296.
21. TEIXEIRA A, CUNHA AE, CLEMENTE JJ, MOREIRA JL, CRU, HJ, ALVES PM, CARRONDO MJT, OLIVEIRA R (2005) "Modeling and optimisation of a recombinant BHK-21 cultivation process using hybrid grey-box systems", *Journal of Biotechnology*, 118:290-303.
22. FERREIRA TB, FERREIRA AL, CARRONDO MJT, ALVES PM* (2005) "Effect of refeed strategies and non-ammoniogenic medium on adenovirus production at high cell densities", *Journal of Biotechnology*, 119:272-280.
23. MARCELINO I, VERÍSSIMO C, SOUSA MFQ, CARRONDO MJT, ALVES PM* (2005) "Characterization of *Ehrlichia ruminantium* replication and release kinetics in endothelial cell cultures", *Veterinary Microbiology*, 110, 87-96.
24. VIEIRA HLA, ESTEVÃO C, ROLDÃO A, PEIXOTO C, SOUSA M, CRUZ PE, CARRONDO MJT, ALVES PM* (2005) "Triple layered rotavirus VLP production: kinetics of vector replication, mRNA stability and recombinant protein production", *Journal of Biotechnology*, 120:72-82.
25. FERREIRA TB, ALVES PM, AUNINS JG, CARRONDO MJT (2005) "Use of adenoviral vectors as veterinary vaccines", *Gene Therapy*, 12:73-83.
26. FERREIRA TB, FERREIRA AL, CARRONDO MJT, ALVES PM* (2005) "Two different serum-free media and osmolarity effect upon human 293 cell growth and adenovirus production", *Biotechnology Letters*, 27:1809-1813.
27. SÁ SANTOS S, GIBSON GE, COOPER AJL, DENTON TT, THOMPSON CM, BUNIK VI, ALVES PM, SONNEWALD U (2006) "Inhibitors of α -Ketoglutarate Dehydrogenase Complex Alter [$1\text{-}^{13}\text{C}$]Glucose and [$\text{U-}^{13}\text{C}$]Glutamate Metabolism in Cerebellar Granule Neurons", *Journal of Neuroscience Research*, 83:450-458.
28. PEIXOTO C, FERREIRA TB, CARRONDO MJT, CRUZ PE, ALVES PM* (2006) "Purification of adenoviral vectors using expanded bed chromatography", *Journal of Virological Methods*, 132:121-126.
29. MARCELINO I, SOUSA MFQ, VERÍSSIMO C, PEIXOTO C, CUNHA A., CARRONDO, MJT, ALVES PM* (2006) "Process development for the mass production of *Ehrlichia ruminantium*", *Vaccine*, 24:1716-1725.
30. CARMO M., FARIA, TQ, FALK, H, COROADINHA AS, TEIXEIRA M, MERTEN O.-W, GÉNY-FIAMMA C, ALVES PM, DANOS O, PANET A, CARRONDO MJT, CRUZ PE (2006) "Relationship between retroviral vector membrane and vector stability" *Journal of General Virology*, 87:1349-1356.
31. BRENNAN L, ALVES PM, HEWAGE C, MALTHOUSE JG, MCBEAN GJ (2006) "Impact of gliotoxin L-serine-O-sulphate on cellular metabolism in cultured astrocytes", *Neurochemistry International*, 48:739-745.

32. COROADINHA AS, RIBEIRO J, ROLDÃO A, CRUZ PE, ALVES PM., MERTEN O.-W., CARRONDO MJT (2006) "Effect of medium sugar source on the production of retroviral vectors for gene therapy", *Biotechnology and Bioengineering*, **94**:24-36.
33. COROADINHA AS, SILVA AC, PIRES E., COELHO A, ALVES PM, CARRONDO MJT (2006) "Effect of osmotic pressure on the production of retroviral vectors: enhancement in vector stability", *Biotechnology and Bioengineering*, **94**:322-329.
34. CRUZ PE, SILVA AC, ROLDÃO A, CARMO M, CARRONDO MJT, ALVES PM* (2006) "Screening of novel excipients for improving the stability of retroviral and adenoviral vectors", *Biotechnology Progress*, **22**:568-576.
35. LAMEIRO MH, LOPES A, MARTINS LO, ALVES PM, MELO E (2006) "Incorporation of a Model Protein into Chitosan-Bile salt Microparticles", *International Journal of Pharmaceutics*, **312**:119-130.
36. COROADINHA AS, ALVES PM, SÁ SANTOS S, CRUZ PE, MERTEN O.-W, CARRONDO MJT (2006) "Retrovirus Producer Cell Line Metabolism: implications on Viral Productivity", *Applied Microbiology and Biotechnology*, **72**:1125-1135.
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