

MANUEL JOSÉ TEIXEIRA CARRONDO

CURRICULUM VITAE

Brought up to date – October 2019

Biography: Born 31 March 1948, married, one son.

Address: Instituto de Biologia Experimental e Tecnológica (IBET), Instituto de Tecnologia Química e Biológica (ITQB)
Estação Agronómica Nacional, Quinta do Marquês, Apartado 12,
P-2781-901 Oeiras, PORTUGAL
Tel. (351) 214427787; Fax (351) 214421161

Laboratório de Engenharia Bioquímica, Universidade Nova de Lisboa
Faculdade de Ciências e Tecnologia/ UNL
P-2829-516 Monte da Caparica, PORTUGAL
Tel. (351) 212 954 464 - Fax: (351) 212 954 461

Home Address: Rua Pero de Alenquer, 95, Alto do Lagoal, P-2760-096 Caxias, PORTUGAL

E-mail: mjtc@itqb.unl.pt; mjtc@ibet.pt

CV link: <http://www.itqb.unl.pt/research/technology/Engineering%20Cellular%20Applications%20Laboratory>

Orcid link: <http://orcid.org/0000-0002-4550-4574>

ACADEMIC QUALIFICATIONS

Diploma Chemical Engineer, Universidade do Porto, 1971

M.Sc. (distinction) in Public Health Engineering, Imperial College of Science and Technology, University of London, 1976.

D.I.C., Imperial College of Science and Technology, University of London, 1976.

Ph.D., Imperial College of Science and Technology, University of London, 1979.

Agregado (Habilitation), Chemical and Biochemical Engineering, Universidade Nova de Lisboa, 1991.

PROFESSIONAL ACTIVITIES

Tuborg Brewery, Copenhagen, Denmark (May-October 1971) Solid-liquid separation studies (filtration and centrifugation).

Sacor Oil Refinery, Porto (October 1971-March 1972) corrosion and material studies of stainless and austenitic steels.

Faculty of Sciences, Universidade do Porto - October 1971-March 1972 - lecturing practical classes in General Organic Chemistry and Medicinal Chemistry.

Ministry for Public Works, Lisbon. Secretary to the Secretary of State for Public Works - April 1972 - November 1973.

Plano-Empresa de Projectos Mecânicos, Lda. Partner, consulting and design engineer from November 1973 - December 1985. Design of water and solid waste treatment plants in Portugal; also treatment of industrial wastewaters (agroindustries, textiles, glass and ceramics, painting and metal finishing). Designed the water treatment for the Lumiar Haemodialysis Unit, the largest in Europe (1979) for the National Medical Care of Boston, U.S.A. and for the Lisbon Central Slaughterhouse. Process and Design Engineering for an oil and soap plant in São Tomé e Príncipe.

University of London - October 1975 to July 1979, holding a postgraduate Scholarship from Instituto Nacional de Investigação Científica, Lisbon. On top of his academic work, directed research and taught practical and theoretical classes to the M.Sc. Course in Public Health Engineering.

Faculty of Sciences and Technology, Universidade Nova de Lisboa from August 1979 onwards. Assistant Professor at the Department of Environmental Sciences. From September 1983, at the Biochemical Engineering Section directing the Biochemical Engineering Laboratory within the Chemistry Department. From February 1987, Associate Professor of Chemical and Biochemical Engineering. From October 1995, Professor of Chemical and Biochemical Engineering. Coordinator, Chemical Engineering section (1995-2007).

Supervised 29 concluded Ph.D. thesis; 3 ongoing

ITQB – Instituto de Tecnologia Química e Biológica Researcher (1987-...), Founder and Director Animal Cell Technology Laboratory (1990-2006). **Webpage:** www.itqb.unl.pt

IBET - Instituto de Biologia Experimental e Tecnológica from February 1989, Founder, President (to 1999), Chief Executive Officer (1999-2012), Director (2012-2015) and currently Vice-President (2015-...). **Webpage:** www.ibet.pt

Coordinated the specification, project design and construction teams for the ITQB research building (20000 m²) and the IBET fermentation, extraction and purification pilot plant (2400m²) (1989-1994)

Project Evaluator for Eur. Com. (3rd, 4th, 5th, 6th Framework Program), National and International Foundations and Granting Organizations

Oikos, Cooperação e Desenvolvimento (NGO) Non executive Director (1998-2005) **Webpage:** www.oikos.pt

GenIBET Biopharmaceuticals (2006-2008), Chief Scientific Officer, member of the Board (2009-...) **Webpage:** www.genibet.com

At **IBET** and **GenIBET** established **research collaborations** with Merck & Co., Bayer Schering Pharma, Merck Serono Pharma, Abbott (AbbVie), Boehringer Ingelheim, Novartis, Novo Nordisk and Lonza, amongst others.

SOCIETIES AND BOARDS

Ordem dos Engenheiros, Portugal, Member (awarded c2 level, 1984);

Association of Environmental Engineering Professors, Member, USA (1980-1996);

Society for Industrial Microbiology, Member, USA (1980-1998);

European Society for Animal Cell Technology – Honorary Member since 2005, Executive Committee Member, from May 1992 to June 2003, Chairman, from September 1997 to June 2001;

Portuguese Biotechnology Society, Member;

Science and Technology for Development Association (ACTD), Portugal, Founder and Member (Vice-President 1984-1989);

Academia de Engenharia (Portugal) - Founding Member (1995), Member of the board (1996-2001), representative to the EURO-CASE board (Paris) (1996-2001);

European Federation of Biotechnology (EFB), Member of the Board (2000-2008), President of the Steering Committee (1999-2001) of Medical Biotechnology Section;

Amgen Bioprocessing Center, Keck Graduate Institute, Claremont, California, Advisory Board Member (2005- ...);

CEVEC Pharmaceuticals, Cologne, Advisory Board Member (2007-2017);

Max - Planck Institute for Dynamics of Complex Technical Systems, Magdeburg, Advisory Board Member (2008-2014);

PBS Biotech, California, Advisory Board, (2009-...);

CNIC - Spanish National Center for Cardiovascular Research Carlos III, Spain, Scientific Advisory Board, (2011-2015);

Mastercell - Manufacturing Synergies for Therapeutic Cells, Belgium, Scientific Advisory Board, (2012-2016);

Alloksys - Life Sciences BV, Holland, Advisory Board, (2012-...);

iNOVA4Health - Advancing Precision Medicine, Portugal, Unit Coordinator – (2015-...);

IBMT - Fraunhofer Institute for Biomedical Engineering, St. Ingbert, Germany, Advisory Board Member - (2016-...).

EDITORIAL BOARD (JOURNALS)

Journal Environmental Technology Letters, UK, Editorial Board Member (1980-1988);

Water Research, UK, Editorial Board Member (1984-1990);

Journal of Biotechnology, Associate Editor for Industrial Processes/New Products (2000 - ...);

Biotechnology and Bioengineering, Editorial Board Member (2003 - ...);

Current Gene Therapy, Editorial Board Member (2004 - ...);

Biotechnology Letters, Editorial Board Member (2005 - ...);

Referee to **Journal of Molecular Medicine**, **Chemical Engineering Science**, **Enzyme Microbial Technology**, **Cytotechnology**, **Applied Microbial Biotechnology**, **Molecular Therapy**,...

CONFERENCE COMMITTEES

Water Industry 81 Conference, Brighton, UK, 15-19 June 1981 Technical Committee Member;

Phosphorus in the Environment Conference, Lisbon, Portugal, July 1985, Technical Committee Member;

Chempor 89 - Int'l Chemical Engineering Conference, Lisbon, 18-20 September 1989, Organizing Committee Member;

Chempor 93 - Int'l Chemical Engineering Conference, Porto, 4-6 April, 1993, Organizing Committee Member;

European Society for Animal Cell Technology, ESACT 14th Meeting Animal Cell Technology: From Vaccines to Genetic Medicine, Vilamoura, 20-24 May 1996, Meeting Chairman;

Cell Conference Engineering VII (2000), Engineering Foundation, N.Y., Aspen (USA), Scientific Committee Member;

11th International Biotechnology Symposium, October 2000, Berlin, Germany, Scientific Committee Member;

BioChE XIII Biochemical Engineering in the Era of Genomics, Systems Biology, Genetic Medicine & Nanotechnologies, July 19-23, 2003 Boulder, Colorado (USA), Scientific Committee Member;

12th International Biotechnology Symposium, October 2004, Santiago, Chile, Scientific Committee Member;

3rd Meeting Recombinant Proteins Production: A comparative view on host physiology, Tavira-Algarve (Portugal), 11-14 November 2004, Meeting Chairman;

Cell Conference Engineering X (2006), Eng. Conf. International, Whistler, Canada, Scientific Committee Member;

Vaccine Technology I (2006), Eng. Conf. International, Puerto Vallarta, Mexico, Scientific Committee Member;

4th Meeting Recombinant Proteins Production: A comparative view on host physiology, Barcelona, Spain, 21-23 September 2006, Scientific Committee Member;

European Society for Animal Cell Technology, ESACT 21st Meeting, Dresden, June 2007, Scientific Committee Member;

BioChe XV, Biochemical Engineering XV, Quebec, Canada, July 2007, Scientific Committee Member;

Cell Culture Engineering XI, Queensland, Australia, April 2008, Scientific Committee Member;

Vaccine Technology II (2008), Albufeira, Portugal, Scientific Committee Member;

5th Meeting Recombinant Protein Production (2008), Sardinia, Italy, Scientific Committee Member;

13th International Biotechnology Symposium, October 2008 Dalian, China, Scientific Committee Member;

Cell Culture Engineering XII (2010), Banff, Canada, Scientific Committee Member;

6th Meeting Recombinant Protein Production (2010), Viena, Austria, Scientific Committee Member;

Vaccine Technology III (2010), Puerto Vallarta, Mexico;

Advanced Therapy Medicinal Products, PDA (2011), Helsinki, Finland, Planning Committee;

Vaccine Technology IV (2012), Albufeira, Portugal, Scientific Committee Member;

Advanced Therapy Medicinal Products, PDA (2012), Lisbon (Cascais), Portugal, Planning Committee;

Cell Culture Engineering XIII conference (2012), Scottsdale, USA, Scientific Committee Member.

REPRESENTATIVE (GOVERNMENT, EUR. COM., ...)

Environmental Technology Group, DG XII, Com. Eur. Communities, Brussels, Belgium (1985-1988);

OECD Workshop on National Policies and Priorities on Biotechnology, Toronto, Canada, April, 1987;

European Foundation on Improvement of Working Conditions, Social Implications of Biotechnology Seminar, Dublin, Ireland, November 1987;

EEC ECLAIR/FLAIR committee of an advisory nature (1989-1992);

EEC CREST ad hoc working group on Agricultural and Agroindustrial Research (1990);
Conselho Nacional para a Ciência e Tecnologia, Portugal (May 1991-October 1994);
IUPAC, International Union of Pure and Applied Chemistry, Commission of Biotechnology (VI.2), National representative (1991-1998);
International Training Programme (ITP), Gesellschaft für Biotechnologische Forschung (GBF) (1992-2004), Advisory Board Member;
Life Sciences Group, Industrial R&D Advisory Committee, IRDAC (DGXII), 1995-1999, Member;
Head, High Level Representative at EUREKA Programme (1993-1996);
External Advisory Group for Key Action 3 - Cell Factory of 5th Framework Programme (DGXII, European Commission), 1998-2002, Member and vice-chairman;
Euro-CASE (European Council of Applied Sciences and Engineering), Paris, 1998-2001, Board Member;
Eurostars/EUREKA Program, from December 2008;
OECD - Portuguese representative to the Working Party on Biotechnology, Nanotechnology and Converging Technologies - (2014-...);

GRANTS, AWARDS AND PRIZES (Conf. participations not included)

May-October 1971 Tuborg, Copenhagen - International Association for the Exchange of Students for Technical Experience (I.A.E.S.T.E.);

October 1975-July 1979 Imperial College, London - Instituto Nacional de Investigação Científica, Lisboa, Portugal;

May-August 1981 Research Associate, Carnegie Mellon University, Pittsburgh, USA - Fulbright Hays Programme and Department of Energy, USA;

December 1982 Humboldt Foundation, for one year;

June 1984 Course on "Management of R&D and Innovation led Technology", Sloan School of Management, M.I.T., Cambridge, MA, National Academy of Sciences, USA;

August 1984 Courses on "Biotechnology: Principles and Processes" and "Fermentation Technology" M.I.T., Cambridge, MA, USA, National Academy of Sciences, USA;

March 1986 Deutscher Akademische Austauschdienst, FR Germany - visiting scholar at Prof. Karl Schugerl's Institute für Technische Chemie der Universität Hannover;

February-September 1988 Visiting Professor at Biotechnology Process Engineering Center, National Scientific Foundation, Mass. Inst. Technology (MIT), USA;

September-November 1988 Visiting Professor, Gesellschaft für Biotechnologische Forschung, G.B.F. Sabbatical Grant, Germany;

1988 Gold medal, Honorary Citizen, Oeiras Municipality;

2004 Excellence in Research Prize, Portuguese Ministry of Education;

2005 Honorary Member, Eur. Soc. Animal Cell Technology (ESACT);

2005 Scientific Prize of the PhDs French Association;

2007 Medal of Merit, ESACT;

January 2014 - ... Visiting Professor, COPPE, Univ. Federal do Rio de Janeiro, Brazil.

MAIN FIELDS OF RESEARCH AND PROJECT DESIGN

Biochemical Engineering of Anaerobic Fermentations (propionic, lactic, sulfate reducing, methanogenic). *Historic* High cell concentration bioreactors (CSTR recycled over UF membrane, adsorbed / immobilized cell, flocculent, fixed and fluidized bed reactors). *historic*

Downstream processing: liquid-liquid and membrane extraction, supercritical fluid extraction, flocculation, centrifugation and filtration. *historic*

Animal cell technology and its applications for human and animal health. Therapeutic and diagnostic recombinant proteins, including fusion proteins; virus like particles as vaccination agents and viruses as deliverables for gene therapy and DNA vaccination. Stem cells and cell therapies. Downstream extraction and purification of biopharmaceuticals. cGMP pilot plant scale-up and production/development of biopharmaceuticals.

Research Projects

Biochemical Engineering side of project "Bioconversion of solid and liquid Residues" sponsored by "Programme in Science and Technology Cooperation", Washington, U.S.A. (concluded June 1987) (Co-leader: Prof. A.V.Xavier);

Propionic acid production by a xylose utilizing Propionibacterium sponsored by JNICT, Lisboa, Portugal, Junta Nacional de Investigação Científica e Tecnológica, JNICT, (concluded, July 1988);

Lactic Acid Starter Cultures, sponsored by Fundação Luso Americana para o Desenvolvimento, Lisbon, Portugal (concluded, December 1989);

Use of Fedbatch Controlled Reactors for Vitamin B₁₂ Production, sponsored by the Volkswagenwerk Stiftung, Hannover, FRG, (co-Leader, Prof. K. Schugerl, University of Hannover), (concluded, July 1991);

Corresponsible for "Super critical Extraction of agroindustrial and fermentation products" JNICT, Lisbon, Portugal and Programme in Science and Technology Cooperation, Washington D.C. USA., (co-Leader Prof. M. Nunes da Ponte) (concluded, October 1991);

Automation of Fed Batch Reactors, JNICT, Portugal (concluded, July 1992);

Lactic Acid, sponsored by Gesellschaft fur Biotechnologische Forschung, GBF, Braunschweig, F.R.G. and NATO, Science for Stability Programme, Brussels, Belgium (co-Leader, Prof. J. Klein, GBF) (concluded, August 1992);

Biotechnology as a developmental tool for Agriculture and Forestry in Portugal, sponsored by SAST-MONITOR, EEC, (concluded, July 1992);

Transfer, Survival and spread of genetically engineered microorganisms in river sediments, soils and agriculture - BAP, DG XII, EEC (concluded, September 1992);

Immobilized Cell Production of Lactic Acid, JNICT, Portugal and NATO Science for Stability Programme (concluded, December 1992);

Optimisation des processus et des procedées de conversion des pollutions aqueuses azotées. Sponsored by STEP, DGXII, EEC. Co-responsible Prof. Fernando Santana, (concluded, October 1993);

Integration of Bioreaction and Extraction for Optimized Production of Monoclonal Antibodies, sponsored by JNICT, Portugal (concluded, December 1993);

Improved Techniques for Establishing a High Expression Production System for Recombinant Proteins from Animal Cells, sponsored by BRIDGE, DGXII, EEC (concluded, April 1994);

Metabolism and Growth Developments for the use of Lactic Acid Bacteria in Wine Production, sponsored by BRIDGE, DGXII, EEC. Co-leader: Prof. M. Helena D. Santos (concluded, October 1994);

Bioprocess Design and Development project: including the construction of a fermentation and downstream processing pilot plant, with the financial support of the Portuguese Ministry for Industry (PEDIP) and the Bundes Ministerium fur Forschung und Technologie (BMFT) conducted with the Gesellschaft fur Biotechnologische Forschung (concluded, November 1994);

Selective Separation of Organic Acids by carrier mediated membrane transport, sponsored by JNICT, STRIDE A (January 1993 - December 1995);

Optimization of Cephalosporin C Production Process, sponsored by JNICT, STRIDE D (March 1993 - December 1995);

Development of virus-like particle (VLP) candidate vaccines for human immunodeficiency virus (HIV) produced by baculo multigene expression vector, sponsored by VALUE Programme, DGXIII, EC (March 1994 - February 1997);

Integrated Biotechnological Processing, sponsored by JNICT, EUREKA Programme (September 1994 - August 1996);

Integration of defined chromosomal and physiological strategies for regulated production of pharmaceutical proteins, sponsored by Biotechnology Programme, DGXII, EC (November 1994 - December 1996);

Development of anti-HIV vaccine by Baculovirus expression system, sponsored by JNICT, EUREKA Programme (January 1995 - December 1996);

Mass production of Endothelial cells for the production of a veterinary vaccine, sponsored by VALUE Programme, DGXIII-EC (February 1995 - August 1996);

Controlled growth and production in mammalian cell culture, sponsored by BIOTECH II Programme, DGXII-EC (January 1996 - December 1998), *Project Coordinator*;¹

Production of antibody-cytokine fusion protein for tumor therapy, sponsored by BIOTECH II Programme, DGXII-EC (September 1996 - August 1999);

Baculovirus for VLP's production, sponsored by BIOTECH II Programme, DGXII-EC (September 1998- September 2000), *Project Coordinator*;

Integrated process for achieving high titers of retroviruses for gene therapy, sponsored by BIOTECH II Programme, DGXII-EC (October 1998-October 2000);

Production of complexes of ligand binding domains and agonists, funded by Schering AG, Berlin (March 1998-March 2000), *Co-Leader Prof. Maria Arménia Carrondo*;

Methodology & Design Criteria for Soil and Water Resource Management and Policy Formulation in Peri-Urban Farming Systems in Southern Africa, sponsored by INCO-DG XII (October 1997 - September 2001), *Project Coordinator*;

Development of Immunological Products for Portugal, sponsored by Veterinary company and Portuguese Min. Economy (October 1996 - September 2000);

¹ In Eur. Com. sponsored projects different teams and workpackages leaders have a project Coordinator, responsible for the whole project.

Inactivated Heartwater Vaccine, DG VIII, Eur. Com. (March 1999- October 2002);

Bionose detection for Animal Cells Biofermentation, DG XII, Eur. Com. (February 2000 – January 2003);

Control of rinderpest (RP) and peste des petits ruminants (RPR) infections: development of oral vaccine, role of wildlife in the maintenance of these diseases, DG XII, Eur. Com. (March 2000 – February 2003);

Production, field application and evaluation of inactivated *Cowdria ruminantium* vaccine to protect livestock against heartwater in different African farming systems, DG XVI, Eur. Com. (2001-2003);

Integrated strategy for efficient therapeutic retrovirus production based on modular cell lines, Insertagene, DG Res., Eur. Com. (2002-2005), *Project Coordinator*;

Novel strategies for a safe rotavirus vaccine, DG Res., Eur. Com. (2002-2006);

Integrated Project for Cell Programming by Nanoscaled Devices, Cellprom, DG Res, Eur. Com (2004-2008), *Co-Leader Dr. Paula Alves*;

Theravect, Fundação para a Ciência e Tecnologia, 010.6/A003/2005 (2005-2007);

Development of Marker Vaccines, Companion Diagnostic Tests and Improvement of Epidemiological Knowledge to Facilitate Control of Rinderpest and Peste des Petits Ruminants Viruses”, DG Eur. Com (2005-2007)

Genética Estequiometria e cinética do empacotamento múltiplo de proteínas de partícula idêntica a Rotavirus, Fundação para a Ciência e Tecnologia, POCI/BIO/55975/2004 (2005-2008), *Co-Leader Dr. Paula Alves*;

Cell Cryothera, Fundação para a Ciência e Tecnologia, 010.6/A006/2005 (2005-2008);

Epidemiology and New Generation Vaccines for Ehrlichia and Anaplasma Infections of Ruminants, DG Res, Eur. Com. (2005-2009), *Co-Leader Dr. Paula Alves*;

VITROCELLOMICS - Reducing Animal Experimentation in Preclinical Predictive Drug Testing by Human Hepatic *In Vitro* Models Derived from Embryonic Stem Cells, DG Res, Eur. Com. (2006-2009), *Co-Leader Dr. Paula Alves*;

CLINIGENE - European Network for the Advancement of Clinical Gene Transfer and Therapy, Eur. Com. (2006-2011), *Co-Leader Dr. Paula Alves*;

BACULOGES - Use of Baculovirus as a Vector for Gene Therapy, DG Res, Eur. Com (2007-2010), *Co-leader Dr. Paula Alves*;

Global HIV Vaccine Criorepository, IBMT+Bill & Melinda Gates Foundation (2009-2011), *Co-leader Dr. Paula Alves*;

BRAINCAV - Nonhuman adenovirus vectors for gene transfer to the brain, Eur. Com. (2009-2012), *Co-Leader Dr. Paula Alves*;

HYPERLAB - High Yield and Performance Stem Cell Lab, Eur-Com. (2009-2012) *Co-leader Dr. Paula Alves*;

Hepatitis C retroviral like particles, Fundação para a Ciência e Tecnologia, PTDC/EBB-BIO/102649/2008 (2010-2013);

BACULOME - Metabolic modeling in vaccine production, Fundação para a Ciência e Tecnologia, EBI/103359/2008 (2010-2013);

CARE-MI - Cardio Repair European Multidisciplinary Initiative, DG Res, Eur-Com. (2010-2014), *Co-leader Dr. Paula Alves*;

COMPLEX-INC - New Technologies and Production Tools for Complex Protein Biologics, DG Res, Eur-Com. (2011-2015), *Co-leader Dr. Paula Alves*;

SADEL - Development and production of new, high-affinity protein scaffolds for therapeutic use, DG Res, Eur-Com. (2012-2016);

BRAINVECTORS - From Brain Gene Transfer Towards Gene Therapy: Pharmacological Assessment of AAV, CAV and LVV, DG Res, Eur-Com. (2012-2016);

DIVINE - Sustainable downstream processing of vaccines through incorporation of nanobiotechnologies: novel affinity ligands and biomimetic membranes, H2020-LEIT-BIO-2014-1-635770, Eur-Com. (2015-2020).

PUBLICATIONS

Refereed Journals:

- [1] Carrondo MJT, Perry R, Lester JN (1979) "Comparison of a rapid flameless atomic absorption procedure for the analysis of the metallic content of sewages and sewage effluents with flame atomic absorption methods" *Science of Total Environmental* **12**: 1-12.
- [2] Carrondo MJT, Perry R, Lester JN (1979) "Comparison of electrothermal atomic absorption spectrometry of the metal content of sewage sludge with flame atomic absorption spectrometry in conjunction with different pretreatment methods" *Analytica Chimica Acta* **106**: 309-317.
- [3] Carrondo MJT, Lester JN, Perry R (1979) "The analysis of aluminium, calcium, iron and magnesium in sewage sludge by a rapid flameless atomic absorption method" *Talanta* **26**: 929-933.
- [4] Carrondo MJT, Lester JN, Perry R (1979) "The analysis of aluminium, calcium, iron and magnesium in sewages and sewage effluent by a rapid flameless atomic absorption method" *The Analyst* **104**: 831-836.
- [5] Carrondo MJT, Perry R, Lester JN (1979) "The influence of conditioning agents on the determination of the metallic content of sewage sludge by flameless atomic absorption spectrophotometry" *The Analyst* **104**: 937-943.
- [6] Carrondo MJT, Lester JN, Perry R (1979) "Flameless atomic absorption analysis of the total aluminium content (including zeolite type A) of water and waste water samples" *Analytica Chimica Acta* **111**: 291-225.
- [7] Carrondo MJT, Perry R, Lester JN (1980) "Behaviour of zeolite type A in the activated sludge process I. Influence on treatment parameters" *Journal Water Pollution Control Federation* **52**: 2796-2806.
- [8] Carrondo MJT, Perry R, Lester JN (1981) "Behaviour of zeolite type A in the activated sludge process II. Influence on heavy metal removals" *Journal Water Pollution Control Federation* **53**: 344-351.
- [9] Obeng LA, Carrondo MJT, Perry R, Lester JN (1981) "The influence of Zeolite type A on metal concentration in water and waste water", *Journal of the American Oil Chemists Society* **58**: 81-85.
- [10] Carrondo MJT, Perry R, Lester JN (1981) "Sedimentation of Zeolite type A in Water and Wastewater" *Canadian Journal of Civil Engineering* **8**: 206-217.
- [11] Carrondo MJT, Lester JN, Perry R (1983) "Sedimentation of Zeolite type A in Water and Waste Water" *Effluent and Water Treatment Journal* **23**: 271-280.
- [12] Carrondo MJT, Silva JMC, Figueira MII, Ganho RMB, Oliveira JFS (1983) "Anaerobic Filter Treatment of Molasses Fermentation Wastewater", *Water Science and Technology* **15**: 117- 126.
- [13] Campbell JR, Luthy RG, Carrondo MJT (1983) "Measurement and Prediction of Distribution Coefficients for Wastewater Aromatic Solutes", *Environmental Science & Technology* **17**: 582-590.

- [14] Carrondo MJT, Reboredo F, Ganho RMB, Oliveira JFS (1984) "Heavy metal analysis of sediments using a rapid electrothermal atomic absorption procedure" *Talanta* **31**: 561-564.
- [15] Carrondo MJT, Crespo JPSG, Moura MJ (1988) "Production of propionic acid using a xylose utilising *Propionibacterium*" *Applied Biochemistry and Biotechnology* **17**:295-312.
- [16] Reis MAM, Gonçalves LMD, Carrondo MJT (1988) "Sulfate removal in acidogenic phase anaerobic digestion" *Environmental Technology Letters* **9**: 775-784.
- [17] Reis MAM, Gonçalves LMD, Carrondo MJT (1988) "Sulfate reduction in acidogenic phase anaerobic digestion" *Water Science and Technology* **20**:11/12, 345-351.
- [18] Barreto MTO, Melo EP, Carrondo MJT (1988) "Starter culture production in fluidized bed reactor with a flocculent strain of *L. plantarum*" *Biotechnology Letters* **11**:337- 342
- [19] Bartolomeu F, Chambino T, Carrondo MJT (1989) "Applicability of Filtration Tests for Extreme Industrial Sludges" *Filtration and Separation* **26** July-Aug: 288-291.
- [20] Matos HA, Azevedo EJSG, Simões PC, Carrondo MJT, Nunes Da Ponte M (1989) "Phase Equilibria of Natural Flavours and Supercritical Solvents" *Fluid Phase Equilibria* **52**:357-364.
- [21] Reis MAM, Lemos PC, Almeida JS, Carrondo MJT (1990) "Influence of produced acetic acid on growth of sulfate reducing bacteria" *Biotechnology Letters* **12**: 145-148.
- [22] Crespo JPSG, Moura MJ, Carrondo MJT (1990) "Some engineering parameters for the propionic fermentation coupled with ultrafiltration" *Applied Biochemistry and Biotechnology* **24**: 613-625
- [23] Crespo JPSG, Almeida JS, Moura MJ, Carrondo MJT (1990) "Modelling of immobilized cell reactor for propionic acid fermentation" *Biotechnology and Bioengineering* **36**: 705-716.
- [24] Barreto MTO, Melo EP, Almeida JS, Moreira JL, Carrondo MJT (1991) "High Cell Density Reactors for the Production of *Lactobacillus Plantarum*" *Journal of Industrial Microbiology* **7**: 63-70.
- [25] Gonçalves LMD, Xavier AMRB, Almeida JS, Carrondo MJT (1991) "Concomitant Substrate and Product Inhibition Kinetics in Lactic Acid Production" *Enzyme and Microbial Technology* **13**: 314-319.
- [26] Barreto MTO, Melo EP, Almeida JS, Xavier AMRB, Carrondo MJT (1991) "A kinetic method for calculating the viability of lactic starter culture" *Applied Microbiology and Biotechnology* **34**: 648-652.
- [27] Reis MAM, Lemos PC, Martins MJ, Costa PC, Gonçalves LMD, Carrondo MJT (1991) "Influence of sulfate and operational parameters on volatile fatty acids concentration profile in acidogenic phase" *Bioprocess Engineering* **6**: 145-151.
- [28] Crespo JPSG, Moura MJ, Almeida JS, Carrondo MJT (1991) "UF membrane cell recycle for continuous culture of *Propionibacterium*" *Journal of Membrane Science* **61**: 303-314.
- [29] Xavier AMRB, Gonçalves LMD, Sobreiro ACCJ, Carrondo MJT (1991) "Extraction coupled high cell density Bioreactor for lactic acid production in Reuss M *et al* (Ed.) "Biochemical Engineering" Gustav Fischer, Stuttgart, pp:2 50-253.
- [30] Reis MAM, Lemos PC, Almeida JS, Carrondo MJT (1991) "Evidence for the intrinsic toxicity of H₂S to sulphate- reducing bacteria" *Applied Microbiology and Biotechnology* **36**: 145-147.
- [31] Crespo JPSG, Xavier AMRB, Barreto MTO, Gonçalves LMD, Almeida JS, Carrondo MJT (1992) "Tangential flow filtration for continous cell recycle culture of acidogenic bacteria" *Chemical Engineering Science* **47** No.1: 205-214.
- [32] Reis MAM, Lemos PC, Almeida JS, Carrondo MJT (1992) "Effect of hydrogen sulfide on growth of sulfate reducing bacteria" *Biotechnology and Bioengineering* **40**: 593-600.

- [33] **Gonçalves LMD, Barreto MTO, Xavier AMRB, Carrondo MJT, Klein J** (1992) "Inert Supports for Lactic Acid Fermentation - a Technological Assessment" *Applied Microbiology and Biotechnology* **38**: 305-311.
- [34] **Partidário PJ, Carrondo MJT** (1993) "Mass transfer and reaction of Trimethylamine in a three phase biological reactor" *Journal of Chemical Technology and Biotechnology* **57**: 299-307.
- [35] **Barreto Crespo MT, Carrondo MJT** (1994) "Influence of operational parameters in the flocculation and production of *Lactobacillus plantarum*" *Journal of Industrial Microbiology* **13**: 63-69.
- [36] **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 mammalian cells Influence of cell line and culture system upon kinetics" *Applied Microbiology and Biotechnology* **40**: 851-856.
- [37] **Moreira JL, Feliciano AS, Santana PC, Cruz PE, Aunins JG, Carrondo MJT** (1994) "Repeated-batch cultures of baby hamster kidney cell aggregates in stirred vessels" *Cytotechnology* **15**: 337-349.
- [38] **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.
- [39] **Xavier AMRB, Gonçalves LMD, Moreira JL, Carrondo MJT** (1995) "Operational patterns affecting lactic acid production in ultrafiltration cell recycle bioreactor - effect of dilution rate and start-up mode during *Lactobacillus rhamnosus* fermentation" *Biotechnology and Bioengineering* **45**: 320-327.
- [40] **Moreira JL, Cruz PE, Santana PC, Feliciano AS, Lehmann J, Carrondo MJT** (1995) "Influence of Power Input and Aeration Method on Mass Transfer in a Laboratory Animal Cell Culture Vessel" *Journal of Chemical Technology and Biotechnology* **62**: 118-131.
- [41] **Almeida JS, Júlio SM, Reis MAM, Carrondo MJT** (1995) "Nitrite Inhibition by *Pseudomonas fluorescens*" *Biotechnology and Bioengineering* **46**: 194-201.
- [42] **Moreira JL, Feliciano AS, Alves PM, Aunins JG, Carrondo MJT** (1995) "Serum-free and serum-containing media for growth of suspended BHK aggregates in stirred vessels" *Enzyme and Microbial Technology* **17**: 437-444.
- [43] **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.
- [44] **Moreira JL, Cruz PE, Santana P, Aunins JG, Carrondo MJT** (1995) "Formation and Disruption of Animal Cell Aggregates in Stirred Vessels: Mechanisms and Kinetic Studies" *Chemical Engineering Science* **17**: 2747-2764.
- [45] **Almeida JS, Reis MAM, Carrondo MJT** (1995) "Competition between nitrate and nitrite reduction in denitrification by *Pseudomonas fluorescens*" *Biotechnology and Bioengineering* **46**: 476-484.
- [46] **Moreira JL, Santana PS, Feliciano AS, Cruz PE, Racher AJ, Griffiths JB, Carrondo MJT** (1995) "Effect of Viscosity upon Hydrodynamically Controlled Natural Aggregates Grown in Stirred Vessels" *Biotechnology Progress* **11**: 575-583.
- [47] **Coelhoso IM, Moura TF, Crespo JPSG, Carrondo MJT** (1995) "Transport Mechanisms in Liquid Membranes with Ion Exchange Carriers" *Journal of Membrane Science* **108**: 231-244.
- [48] **Coelhoso IM, Crespo JPSG, Carrondo MJT** (1996) "Modelling of Ion-Pairing Extraction of Lactate with Quaternary Amines" *Separation Science and Technology* **31(4)**: 491-511.
- [49] **Pereira H, Lemos PC, Reis MAM, Crespo JPSG, Carrondo MJT, Santos H** (1996) "Model for Carbon Metabolism in Biological Phosphorus Removal Processes based on *In vivo* ¹³C-NMR Labelling Experiments" *Water Research* **30(9)**: 2128-2138.

- [50] **Alves PM, Moreira JL, Rodrigues JM, Aunins JG, Carrondo MJT** (1996) "Two-Dimensional Versus Three-Dimensional Culture Systems: Effects on Growth and Productivity of BHK Cells" *Biotechnology and Bioengineering* **52**: 429-432.
- [51] **Alves PM, Flögel U, Brand A, Leibfritz D, Carrondo MJT, Santos H, Sonnewald U** (1996) "Immobilization of Primary Astrocytes and Neurons for On-Line Monitoring of Biochemical Processes by NMR" *Development Neuroscience* **18**: 478-483.
- [52] **Cruz PE, Moreira JL, Carrondo MJT** (1997) "Insect cell growth evaluation during serum-free adaptation in stirred suspension cultures", *Biotechnology Techniques* **11(2)**: 117-120.
- [53] **Xavier AMRB, Crespo JPSG, Carrondo MJT** (1997) "Effect of cell purge on the stability of microfiltration cell recycle fermentation systems" *Journal of Chemical Technology and Biotechnology* **69**: 203-208.
- [54] **Almeida JS, Reis MAM, Carrondo MJT** (1997) "A Unifying Kinetic Model of Denitrification" *Journal of Theoretical Biology* **186**: 241-249.
- [55] **Cruz HJ, Dias EM, Moreira JL, Carrondo MJT** (1997) "Cell Dislodging Methods under Serum-Free Conditions" *Applied Microbiology and Biotechnology* **47**: 482-488.
- [56] **Gonçalves LMD, Ramos A, Almeida JS, Xavier AMRB, Carrondo MJT** (1997) "Elucidation on the mechanism of lactic acid growth inhibition and production in batch cultures of *Lactobacillus rhamnosus*" *Applied Microbiology and Biotechnology* **48**: 346-350.
- [57] **Coelhoso IM, Crespo JPSG, Carrondo MJT** (1997) "Kinetics of Liquid Membrane Extraction in Systems with Variable Distribution Coefficients" *Journal of Membrane Science* **127**: 141-152.
- [58] **Coelhoso IM, Silvestre P, Viegas RMC, Crespo JPSG, Carrondo MJT** (1997) "Membrane-based solvent extraction and stripping of lactate in hollow-fibre contactors" *Journal of Membrane Science* **134**: 19-32.
- [59] **Cruz HJ, Moreira JL, Stacey G, Dias EM, Hayes K, Looby D, Griffiths B, Carrondo MJT** (1998) "Adaptation of BHK cells producing a recombinant protein to serum-free media and protein-free medium" *Cytotechnology* **26**: 59-64.
- [60] **Gonçalves LMD, Lopes T, Sousa ACC, Carrondo MJT** (1998) "Aquatic pollutants tested *in vitro* with established fish cell lines" *Ecotoxicology and Environmental Safety* **1(2)**: 55-60.
- [61] **Cruz PE, Peixoto CC, Moreira JL, Carrondo MJT** (1998) "Production and Quality Analysis of Pr55gag Particles Produced in Baculovirus-Infected Insect Cells" *Journal of Chemical Technology and Biotechnology* **72**: 149-158.
- [62] **Cruz PE, Cunha AE, Peixoto CC, Clemente JJ, Moreira JL; Carrondo MJT** (1998) "Optimisation of the Production of Virus-Like Particles in Insect Cells" *Biotechnology and Bioengineering* **60(4)**: 408-418.
- [63] **Cardoso MM, Barradas MJ, Kroner KH, Carrondo MJT, Crespo JPSG** (1998) "Mechanisms of Amino Acid Partitioning in Cationic Reserved Micelles" *Bioseparation* **7**: 65-78.
- [64] **Silva Lopes MF, Cunha AE, Clemente JJ, Carrondo MJT, Barreto Crespo MT** (1999) "Influence of environmental factors on lipase production by *Lactobacillus plantarum*" *Applied Microbiology and Biotechnology* **51**: 249-254.
- [65] **Cruz HJ, Ferreira AS, Freitas CM, Moreira JL, Carrondo MJT** (1999) "Metabolic Responses to Different Glucose and Glutamine Levels in BHK Cell Culture" *Applied Microbiology and Biotechnology* **51**: 579-585.
- [66] **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.

- [67] **Burger C, Carrondo MJT, Cruz HJ, Cuffe U, Dias E, Griffiths JB, Hayes K, Hauser H, Looby D, Mielke C, Moreira JL, Rieke E, Savage A, Stacey G, Weldge T** (1999) "An Integrated Strategy for the Process Development of a Recombinant Antibody-cytokine Fusion Protein" *Applied Microbiology and Biotechnology* **52(3)**: 345-353.
- [68] **Silva MFS, Leitão AL, Figueiredo Marques JJ, Carrondo MJT, Barreto Crespo MT** (1999) "Processing of extracellular lipase of *Lactobacillus plantarum*: involvement of a metalloprotease" *FEMS Microbiology Letters* **176**: 483-487.
- [69] **Cruz HJ, Freitas C, Moreira JL, Carrondo MJT** (1999) "Metabolic shifts by nutrient manipulation in continuous cultures of BHK cells" *Biotechnology and Bioengineering* **66(2)**: 104-113.
- [70] **Cruz PE, Peixoto CC, Devos K, Moreira JL, Saman E, Carrondo MJT** (2000) "Characterisation and downstream processing of HIV-1 core and virus-like particles produced in serum free medium" *Enzyme Microbial Technology* **26**:61-70.
- [71] **Carvalho AV, Moreira JL, Mueller PP, Hauser H, Carrondo MJT** (2000) "Manipulation of culture conditions for BHK cell growth inhibition by IRF-1 activation", *Cytotechnology* **32(2)**: 135-145.
- [72] **Cruz HJ, Dias EM, Peixoto CM, Moreira JL, Carrondo MJT** (2000) "Product quality of a recombinant fusion protein expressed in immobilised BHK cells grown in protein-free medium", *Biotechnology Letters* **22(8)**: 677-682.
- [73] **Cruz PE, Almeida JS, Murphy PN, Moreira JL, Carrondo MJT** (2000) "Modeling retrovirus production for gene therapy I: determination of optimal operation mode and harvest strategy", *Biotechnology Progress* **16(2)**: 213-221.
- [74] **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(2)**: 129-139.
- [75] **Araújo CSA, Marques SAF, Carrondo MJT, Gonçalves LMD** (2000) "In vitro response of the brown bullhead catfish (BB) and rainbow trout (RTG-2) cell lines to benzo[a] pyrene", *The Science of Total Environment* **247**: 127-135.
- [76] **Cruz HJ, Freitas CM, Moreira JL, Carrondo MJT** (2000) "Effects of ammonia and lactate on growth, metabolism and productivity of BHK cells", *Enzyme Microbial Technology* **27**: 43-52.
- [77] **Cruz HJ, Moreira JL, Carrondo MJT** (2000) "Metabolically optimised BHK cell fed-batch cultures", *Journal of Biotechnology* **80**: 109-118.
- [78] **Cruz PE, Gonçalves D, Almeida JS, Moreira JL, Carrondo MJT** (2000) "Modeling retrovirus production for gene therapy II: integrating bioreaction and downstream processing", *Biotechnology Progress* **16**: 350-357.
- [79] **Alves PM, Fonseca LL, Peixoto CC, Almeida AC, Carrondo MJT, Santos H** (2000) "NMR Studies on Energy Metabolism of Immobilised Primary Neurons and Astrocytes during Hypoxia, Ischemia and Hypoglycemia", *NMR in Biomedicine* **13**: 438-448.
- [80] **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.
- [81] **Merten O-M, Cruz PE, Rochette C, Fiamma-Geny C, Bouquet C, Gonçalves D, Danos O, Carrondo MJT** (2001) "Comparison of different bioreactor systems for the production of high titer retroviral vectors", *Biotechnology Progress* **17(2)**: 326-35.
- [82] **Carvalho AV, Moreira JL, Carrondo MJT** (2001) "Strategies to Modulate BHK Cell Proliferation by the Regulation of IRF-1 Expression", *Journal of Biotechnology* **92(1)**:47-59.

- [83] **Fonseca LL, Alves PM, Carrondo MJT, Santos H** (2001) "Ethanol effects on the metabolism of primary astrocyte culture studied by multinuclear NMR spectroscopy", *Journal of Neuroscience Research* **66**(5): 803-811.
- [84] **Carvalho AV, Coroadinha AS, Alves PM, Moreira JL, Hauser H, Carrondo MJT** (2002) "Metabolic Changes during Cell Growth Inhibition by the IRF-1 system", *Enzyme Microbial Technology* **30**:95-109.
- [85] **Maranga L, Cruz PE, Aunins JG, Carrondo MJT** (2002) "Production of core and virus-like particles with baculovirus infected insect cells" in *Tools and Applications of Biochemical Engineering, Advances in Biochemical Engineering and Biotechnology* **74**:183-206.
- [86] **Cruz HJ, Dunker R, Cunha AE, Peixoto CM, Thomaz M, Burger C, Dias E, Clemente A, Moreira JL, Rieke E, Carrondo MJT** (2002) "Process development of a recombinant antibody-cytokine fusion protein expressed in protein free medium by BHK cells", *Journal of Biotechnology* **96**: 169-183.
- [87] **Maranga L, Rueda P, Antonis AFG, Vela C, Langeveld JPM, Casal JJ, Carrondo MJT** (2002) "Large scale production and downstream processing of a recombinant porcine parvovirus vaccine" *Applied Microbiology and Biotechnology* **59**: 45-50.
- [88] **Silva MFS, Leitão AL, Regalla M, Figueiredo Marques JJ, Carrondo MJT, Barreto Crespo MT** (2002) "Characterisation of an highly thermostable extracellular lipase from *Lactobacillus plantarum*", *International Journal of Food Microbiology* **76**: 107-115.
- [89] **Maranga L, Coroadinha AS, Carrondo MJT** (2002) "Insect Cell Culture Medium Supplementation with Fetal Bovine Serum and Bovine Serum Albumin: Effects on Baculovirus Adsorption and Infection Kinetics", *Biotechnology Progress* **18**:855-861.
- [90] **Cruz PE, Maranga L, Carrondo MJT** (2002) "Integrated process optimization: lessons from retrovirus and virus like particle production" *Journal of Biotechnology* **99**: 199-214.
- [91] **Maranga L, Mendonça RZ, Bengala A, Peixoto CC, Moraes RHP, Pereira CA, Carrondo MJT** (2003) "Enhancement of Sf-9 cell growth and longevity through supplementation of culture medium with hemolymph", *Biotechnology Progress* **19**(1): 58-63.
- [92] **Carvalho AV, Santos SS, Calado J, Haurry M, Carrondo MJT** (2003) "Cell growth arrest by nucleotides as a tool for improved production of biopharmaceuticals", *Biotechnology Progress* **19**(1): 69-83.
- [93] **Moreira JL, Miranda P, Marcelino I, Alves PM, Carrondo MJT** (2003) "Culture Methods for Mass Production of Endothelial Cells", *Fermentation Process Development*, *ACS Symposium Series* **862**: 124-141.
- [94] **Maranga L, Brazão TF, Carrondo MJT** (2003) "Modeling virus-like particle production at low multiplicities of infection with the baculovirus insect cell system", *Biotechnology and Bioengineering* **84**(2): 245-253.
- [95] **Carvalho AV, Marcelino I, Carrondo MJT** (2003) "Metabolic changes during cell growth arrest by p27 overexpression" *Applied Microbiology and Biotechnology* **63**: 164-173.
- [96] **Maranga L, Cunha AE, Clemente J, Cruz PE, Carrondo MJT** (2004) "Scale-up of virus-like particles production: effects of sparging, agitation and bioreactor scale on cell growth, infection kinetics and productivity", *Journal of Biotechnology* **107**(1): 55-64.
- [97] **Cunha AE, Clemente JJ, Gomes R, Pinto F, Thomaz M, Miranda S, Pinto R, Moosmayer D, Donner P, Carrondo MJT** (2004) "Methanol induction optimisation for scFv antibody fragment production in *Pichia pastoris*", *Biotechnology and Bioengineering* **86**(14): 458-467.
- [98] **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.

- [99] Santos SS, 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.
- [100] Oliveira R, Clemente JJ, Cunha AE, Carrondo MJT (2005) "Adaptive dissolved oxygen control through the glycerol feeding in a recombinant *Pichia pastoris* cultivation in conditions of oxygen transfer limitation", *Journal of Biotechnology* **116**: 35-50.
- [101] Peixoto CC, Marcelino I, Sousa MQ, Vachiéry N, Bensaid A, Martinez D, Carrondo MJT, Alves PM (2005) "Quantification of *Ehrlichia ruminantium* by Real Time PCR", *Veterinary Microbiology* **107**: 273-278.
- [102] 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.
- [103] Teixeira A, Cunha AE, Clemente JJ, Moreira JL, Cruz HJ, Alves PM, Carrondo MJT, Oliveira R (2005) "Modelling and optimisation of a recombinant BHK-21 cultivation process using hybrid grey-box systems", *Journal of Biotechnology* **118**: 290-303.
- [104] Monteiro SM, Clemente JJ, Henriques AO, Gomes RJ, Carrondo MJT, Cunha AE (2005) "A procedure for high-yield spore production by *Bacillus subtilis*", *Biotechnology Progress* **21**: 1026-1031.
- [105] Souza APB, Peixoto CC, Maranga L, Carvalhal AV, Moraes RHP, Pereira CA, Carrondo MJT, Mendonça RZ (2005) "Purification and Characterization of an Anti-Apoptotic Protein Isolated from *Lonomia obliqua* Hemolymph", *Biotechnology Progress* **21**: 99-105.
- [106] Ferreira TB, Ferreira AL, Carrondo MJT, Alves PM (2005) "Effect of refeed strategies and non-ammoniaogenic medium on adenovirus production at high cell densities", *Journal of Biotechnology* **119**: 272-280.
- [107] Vieira HLA, Estevão C, Roldão A, Peixoto C, Sousa M, Cruz PE, Carrondo MJT, Alves PM (2005) "Triple layered rotavirus VLP assembly: kinetics of vector replication, mRNA stability and recombinant protein production", *Journal of Biotechnology* **120**(1):72-82.
- [108] Ferreira TB, Alves PM, Aunins JG, Carrondo MJT (2005) "Use of adenoviral vectors as veterinary vaccines", *Gene Therapy* **12**: S73-S83.
- [109] 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.
- [110] Kreijl K, Mandenius C-F, Clemente JJ, Cunha AE, Monteiro SMS, Carrondo MJT, Hesse F, Molinas MMB, Wagner R, Merten O-W, Fiamma CG, Leger W, Mayr HW, Müller D, Katinger H, Martensson P, Bachinger T, Mitrovics J (2005) "On-line detection of microbial contaminations in animal cell reactor cultures using an electronic nose device", *Cytotechnology* **48**: 41-58.
- [111] Ferreira TB, Ferreira AL, Carrondo MJT, Alves PM (2005) "Two different serum-free media and osmolality effect upon human 293 cell growth and adenovirus production", *Biotechnology Letters* **27**: 1809-1813.
- [112] Cruz PE, Silva AC, Roldão A, Carmo M, Carrondo MJT, Alves PM (2006) "Screening of Novel Excipients for Improving Stability of retroviral and adenoviral vectors", *Biotechnology Progress* **22** (2):568-576.
- [113] 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.

- [114] **Marcelino I, Sousa MFQ, Veríssimo C, Peixoto C, Cunha AE, Carrondo MJT, Alves PM** (2006) "Process development for the mass production of *Ehrlichia ruminantium*", *Vaccine* **24**:1716-1725.
- [115] **Teixeira A, Clemente JJ, Cunha AE, Carrondo MJT, Oliveira R** (2006) "Bioprocess iterative batch-to-batch optimization based on hybrid parametric/nonparametric models", *Biotechnology Progress* **22**:247-258.
- [116] **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.
- [117] **Coroadinha AS, Ribeiro J, 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.
- [118] **Coroadinha AS, Silva AC, Pires E, Coelho A, Alves PM, Carrondo MJT** (2006) "The effect of osmotic pressure on the production of retroviral vectors: enhancement in vector stability", *Biotechnology and Bioengineering* **94**:322-329.
- [119] **Antonis AFG, Bruschke JM, Rueda P, Maranga L, Casal JI, Vela C, Hilgers LAT, Belt BGM, Weerdmeester K, Carrondo MJT, Langeveld JPM** (2006) "A novel recombinant virus-like particle vaccine for prevention of porcine parvovirus-induced reproductive failure" *Vaccine* **24**:5481-5490.
- [120] **Coroadinha AS, Schucht R, Gama-Norton L, Wirth D, Hauser H, Carrondo MJT** (2006) "The use of recombinase Cassette Exchange in retroviral Vector Producer Cell Lines: predictability and efficiency in transgene replacement", *Journal of Biotechnology* **124**:457-468.
- [121] **Rodrigues T, Carvalho A, Roldão A, Carrondo MJT, Alves PM, Cruz PE** (2006) "Screening anion-exchange chromatographic matrices for isolation of onco-retroviral vectors", *Journal of Chromatography B* **837**:59-68.
- [122] **Schucht R, Coroadinha AS, Zanta-Boussif MA, Verhoeven E, Carrondo MJT, Hauser H, Wirth D** (2006) "A new generation of retroviral producer cells: Predictable and stable virus production by Flp mediated site-specific integration of retroviral vectors" *Molecular Therapy* **14**(2): 285-292.
- [123] **Zhang C, Ferreira TB, Cruz PE, Alves PM, Haury M, Carrondo MJT** (2006) "The importance of 293 cell cycle phase on adenovirus vector production" *Enzyme and Microbial Technology* **39**: 1328-1332.
- [124] **Coroadinha AS, Alves PM, Santos SS, Cruz PE, Merten O-W, Carrondo MJT** (2006) "Retrovirus producer cell line metabolism: implications on viral productivity", *Applied Microbiology and Biotechnology* **72**(6): 1125-1135.
- [125] **Vieira HLA, Pereira ACP, Carrondo MJT, Alves PM** (2006) "Catalase effect on apoptosis for the improvement of recombinant protein production in baculovirus-insect cell system", *Bioprocess Biosystems Engineering*, **29**: 409-414.
- [126] **Roldão AM, Vieira HLA, Alves PM, Oliveira R, Carrondo MJT** (2006) "Intracellular dynamics in Rotavirus-like particles production: Evaluation of multigene and monocistronic infection strategies" *Process Biochemistry* **41**:2188-2199.
- [127] **Peixoto C, Sousa MFQ, Silva AC, Carrondo MJT, Alves PM** (2007) "Downstream processing of triple-layered rotavirus like particles" *Journal of Biotechnology* **127**(3):452-461.
- [128] **Rodrigues T, Carrondo MJT, Alves PM, Cruz PE** (2007) "Purification of Retroviral Vectors for Clinical Application: Biological Implications and Technological Challenges" *Journal of Biotechnology* **127**(3): 520-541.
- [129] **Teixeira A, Alves C, Alves PM, Carrondo MJT, Oliveira R** (2007) "Hybrid elementary flux analysis/nonparametric modeling: application for bioprocess control", *BMC Bioinformatics* **8**(1):30.

- [130] **Roldão AM, Vieira HLA, Charpilienne A, Poncet D, Roy P, Carrondo MJT, Alves PM, Oliveira R** (2007) "Modeling Rotavirus-Like Particles production: infection kinetics, baculovirus DNA replication, mRNA synthesis and protein production" *Journal of Biotechnology* **128(4)**:875-894.
- [131] **Rodrigues T, Carvalho A, Carmo M, Carrondo MJT, Alves PM, Cruz PE** (2007) "Scaleable purification process for gene therapy retroviral vectors" *Journal of Gene Medicine* **9**:233-243.
- [132] **Ferreira TB, Carrondo MJT, Alves PM** (2007) "Effect of ammonia production on intracellular pH consequent effect on adenovirus vector production" *Journal of Biotechnology* **129**:433-438.
- [133] **Malpique R, Katsen-Globa A, Carrondo MJT, Zimmermann H, Alves PM** (2007) "Cryopreservation in micro-volumes: impact upon Caco-2 Colon Adenocarcinoma cells proliferation and differentiation" *Biotechnology Bioengineering* **98**:155-166.
- [134] **Peixoto C, Marcelino I, Amaral AI, Carrondo MJT, Alves PM** (2007) "Purification by membrane technology an intracellular *Ehrlichia ruminantium* candidate vaccine against Heartwater" *Process Biochemistry*, **42(7)**: 1084-1089.
- [135] **Marcelino I, Vachier N, Amaral AI, Roldão A, Lefancois T, Carrondo MJT, Alves PM, Martinez D** (2007) "Effect of purification process and the storage conditions on the efficacy of an inactivated vaccines against heartwater" *Vaccine* **25(26)**: 4903-13.
- [136] **Serra M, Leite SB, Brito C, Costa J, Carrondo MJT, Alves PM** (2007) "A Novel Culture Strategy for Human Stem Cell Proliferation and Neuronal Differentiation" *Journal of Neuroscience Research* **85(16)**: 3557-3566.
- [137] **Teixeira AP, Carinhas N, Dias JM, Cruz PE, Alves PM, Carrondo MJT, Oliveira R** (2007) "Hybrid Semi-Parametric Mathematical Systems: Bridging the Gap Between Biology and Process Engineering", *Journal of Biotechnology* **132(4)**:418-25.
- [138] **Sá Santos S, Leite SM, Sonnewald U, Carrondo MJT, Alves PM** (2007) "Stirrer vessel cultures of rat brain cells aggregates: characterization of major metabolic pathways and cell population dynamics", *Journal of Neuroscience Research* **85**:3386-3397.
- [139] **Roldão A, Carrondo MJT, Alves PM, Oliveira R** (2008) "Stochastic simulation of protein expression in the Baculovirus/Insect cell system" *Computers and Chemical Engineering* **32**:68-77.
- [140] **Carrondo MJT, Merten O-W, Haury M, Alves PM, Coroadinha AS** (2008) "Impact of Retroviral Vector Components Stoichiometry on Packaging Cell Lines: effects on productivity and vector quality" *Human Gene Therapy* **19**:199-210.
- [141] **Carmo M, Panet A, Carrondo MJT, Alves PM, Cruz PE** (2008) "From retroviral vector production to gene transfer: spontaneous inactivation is caused by loss of reverse transcription capacity" *Journal of Gene Medicine*, **10(4)**: 383-391.
- [142] **Vicente T, Sousa MQ, Peixoto C, Mota JP, Alves PM, Carrondo MJT** (2008) "Anion exchange membrane chromatography for purification of rotavirus-like particles" *Journal of Membrane Science* **311**: 270-283.
- [143] **Clemente JJ, Monteiro SMS, Carrondo MJT, Cunha AE** (2008) "Predicting sporulation events in a bioreactor using an Electronic Nose" *Biotechnology Bioengineering* **101(3)**: 545-552.
- [144] **Silva A.C, Delgado I, Sousa MFQ, Carrondo MJTC, Alves PM** (2008) "Scalable culture systems using different cell lines for the Production of Peste des Petits Ruminants" *Vaccine* **26**:3305-11.
- [145] **Mellado MC, Cruz PE, Peixoto C, Carrondo MJT, Alves PM** (2008) "Purification of recombinant rotavirus VP7 for the study of in vitro rotavirus-like particles assembly" *Journal of Chromatography B* **874(1-2)**:89-94.
- [146] **Rodrigues T, Alves A, Lopes A, Carrondo MJT, Alves PM, Cruz PE** (2008) "Removal of envelope protein-free retroviral vectors by anion exchange chromatography to improve product quality", *Journal of Separation Science* **31(20)**:3509-3518.

- [147] **Peixoto C, Ferreira TB, Sousa MQ, Carrondo MJT, Alves PM** (2008) "Towards Purification of adenovirus vectors based on membrane technology" *Biotechnology Progress* **24**:1290-1296.
- [148] **Teixeira A, Portugal CAM, Carinhas N, Dias JML, Crespo JPG, Alves PM, Carrondo MJT, Oliveira R** (2009) "In situ 2D fluorometry and chemometric monitoring of mammalian cell cultures" *Biotechnology and Bioengineering* **102**(4): 1098-1106.
- [149] **Ferreira TB, Perdigão R, Silva AC, Zhang C, Aunins JG, Carrondo MJT, Alves PM** (2009) "293 cell cycle synchronization in adenovirus vector production", *Biotechnology Progress* **25**(1): 235-243.
- [150] **Serra M, Carrondo MJT, Schmitt D, Alves PM, Brito AC** (2009) "Stirred bioreactors for the expansion of adult pancreatic stem cells", *Annals of Anatomy* **191**(1): 104-115.
- [151] **Carinhas N, Bernal V, Yokomizo AY, Carrondo MJT, Oliveira R, Alves PM** (2009) "Baculovirus production for gene therapy: the role of cell density, MOI and medium exchange" *Applied Microbiology and Biotechnology* **81**(6): 1041-1049.
- [152] **Roldao A, Oliveira R, Carrondo MJT, Alves PM** (2009) "Error Assessment in Recombinant Baculovirus Titration: Evaluation of Different Methods", *Journal of Virological Methods*, **159**(1): 69-80.
- [153] **Miranda JP, Leite SB, Muller-Vieira U, Rodrigues A, Carrondo MJT, Alves PM** (2009) "Toward Extended Functional Hepatocyte *In vitro* Culture" *Tissue Engineering Part C* **15**:1-11
- [154] **Bernal V., Carinhas N, Yokomizo AY, Carrondo MJT, Oliveira R, Alves PM** (2009) "Cell density effect in the baculovirus-insect cells system: A quantitative analysis of energetic metabolism" *Biotechnology and Bioengineering* **104**, 162-180.
- [155] **Vicente T, Peixoto C, Carrondo MJT, Alves PM** (2009) "Purification of recombinant baculoviruses for gene therapy using membrane processes", *Gene Therapy (Nature)* **16**, 766-775.
- [156] **Teixeira AP, Oliveira R, Alves PM, Carrondo MJT** (2009) "Advances in real-time monitoring and control of mammalian cell cultures: supporting the PAT initiative" *Biotechnology Advances* **27**:726-732.
- [157] **Mellado MC, Mena JA, Lopes A, Ramírez OT, Carrondo MJT, Palomares LA, Alves PM** (2009) "Impact of physicochemical parameters on *in vitro* assembly and disassembly kinetics of recombinant triple-layered rotavirus-like particles" *Biotechnology and Bioengineering* **104**(4):674-686.
- [158] **Malpique R, Ehrhart F, Katsen-Globa A, Zimmermann H, Carrondo MJT, Alves PM**, 2009) "Cryopreservation of Adherent Cells: Strategies to Improve Cell Viability and Function after Thawing", *Tissue Engineering*, **15**(3), 373-386. *Selected for the Issue Cover.*
- [159] **Carmo M, Dias JD, Panet A, Coroadinha AS, Carrondo MJT, Alves PM, Cruz PE** (2009) "Thermosensitivity of the reverse transcription process as an inactivation mechanism of lentiviral vectors", *Human Gene Therapy*, **20**(10):1168-1176.
- [160] **Carmo M, Alves A, Rodrigues AF, Coroadinha AS, Carrondo MJT, Alves PM, Cruz PE** (2009) "Stabilization of gammaretroviral and lentiviral vectors: from production to gene transfer", *The Journal of Gene Medicine*, **11**, 670-678.
- [161] **Carinhas N, Bernal V, Monteiro F, Carrondo MJT, Oliveira R, Alves PM** (2010) "Improving baculovirus production at high cell density through manipulation of energy metabolism" *Metabolic Engineering* **12**, 39-52.
- [162] **Vicente T, Mota JPB, Peixoto C, Alves PM, Carrondo MJT** (2010) "Modeling protein binding and elution over a chromatographic surface probed by surface plasmon resonance", *Journal of Chromatography A* – **1217** 2032–2041.

- [163] Serra M, Brito C, Sousa MFQ, Jensen J, Strehl R, Hyllner J, Carrondo MJT, Alves PM (2010) Improving expansion of pluripotent hESCs in perfused bioreactors through oxygen control, *Journal Biotechnology*, **148**:208–215.
- [164] Vicente T, Peixoto C, Alves PM, Carrondo MJT (2010) “Modeling Electrostatic Interactions of Baculovirus Vectors for Ion-exchange Process Development”, *Journal of Chromatography A* - **1217** 3754–3764.
- [165] Vicente T, Mota JPB, Peixoto C, Alves PM, Carrondo MJT (2010) “Analysis of adsorption of a baculovirus bioreaction bulk on an ion-exchange surface by surface plasmon resonance”, *Journal of Biotechnology*, **148**:171-181.
- [166] Miranda JP, Rodrigues A, Tostões RM, Leite S, Zimmermann H, Carrondo MJT, Alves PM (2010) “Extending Hepatocyte Functionality for Drug Testing Applications using high viscosity alginate-encapsulated Three-Dimensional Cultures in Bioreactors” (2010) *Tissue Engineering Part C*, **16**(6):1223-1232.
- [167] Bernal V, Monteiro F, Carinhas N, Ambrósio R, Alves PM, Carrondo MJT (2010) “Metabolic burden in baculovirus-infected *Spodoptera frugiperda* Sf-9 cells”, *Journal Biotechnology*, **150**(3):332-42.
- [168] Roldão A, Mellado MCM, Castilho LR, Carrondo MJT, Alves PM (2010) Virus-Like Particles in Vaccine Development, *Expert Review of Vaccines*, **9**(10):1149.
- [169] Cohen-Haguénauer O, Creff N, Cruz P, Tunc C, Aïuti A, Baum C, Bosch F, Blomberg P, Cichutek K, Collins M, Danos O, Dehaut F, Federspiel M, Galun E, Garritsen H, Hauser H, Hildebrandt M, Klatzmann D, Merten OW, Montini E, O'Brien T, Panet A, Rasooly L, Scherman D, Schmidt M, Schweitzer M, Tiberghien P, Vandendriessche T, Ziehr H, Ylä-Herttuala S, von Kalle C, Gahrton G, Carrondo MJT (2010), “Relevance of an academic GMP Pan-European vector infrastructure (PEVI)”, *Current Gene Therapy*, **10**(6):414-22.
- [170] Tostões RM, Leite SB, Miranda JP, Sousa MFQ, Carrondo MJT, Alves PM (2011) “Perfusion of 3D encapsulated hepatocytes – a synergistic effect enhancing long term functionality in bioreactors”, *Biotechnology and Bioengineering*, **108**: 41–49.
- [171] Carrondo MJT, Panet A, Wirth, Coroadinha AS, Cruz P, Falk H, Schucht R, Dupont F, Geny-Fiamma C, Merten OW, Hauser H (2011) “Integrated Strategy for the Production of Therapeutic Retroviral Vectors”, *Human Gene Therapy*, **22**(3): 370-379.
- [172] Teixeira AP, Duarte TM, Oliveira R, Carrondo MJT, Alves PM (2011) “High-throughput analysis of animal cell cultures using two-dimensional fluorometry”, *Journal of Biotechnology* **151**: 255-260.
- [173] Vicente T, Peixoto C, Mota JPB, Carrondo MJT, Alves PM (2011) “Optimizing Downstream Processing of Enveloped Viruses”, *Genetic Engineering & Biotechnology News: Bioprocess Tutorial*, 15 2011 (Vol. 31, No. 2).
- [174] Vicente T, Fáber R, Alves PM, Carrondo MJT, Mota JPB (2011) “Impact ligand density on the optimization of ion-exchange membrane chromatography for viral vector purification”, *Biotechnology and Bioengineering*, **108**:6 1347-1359.
- [175] Teixeira AP, Dias JML, Carinhas N, Sousa M, Clemente JJ, Cunha AE, Stosch M, Alves PM, Carrondo MJT, Oliveira R (2011) “Cell functional enviromics: unravelling the function of environmental factors” *BMC Systems Biology*, **5**:92.
- [176] Carinhas N, Bernal V, Teixeira AP, Carrondo MJT, Alves PM, Oliveira R (2011) “Hybrid metabolic flux analysis: combining stoichiometric and statistical constraints to model the formation of complex recombinant product” *BMC Systems Biology*, **5**:34.
- [177] Carinhas N, Robitaille AM, Moes S, Carrondo MJT, Jenoe J, Oliveira R, Alves PM (2011)

- "Quantitative proteomics of *Spodoptera frugiperda* cells during growth and baculovirus infection" *PLoS ONE*, **6(10)**:e26444.
- [178] **Vicente T, Roldão A, Peixoto C, Carrondo MJT, Alves PM** (2011) "Large-scale production and purification of VLP-based vaccines", *Journal of Invertebrate Pathology (Baculovirus in Medicine – Special Issue)*, **107**:S42-48.
- [179] **Roldão A, Peixoto C, Carrondo MJT, Alves PM** (2011) "Quality control for baculovirus-based products", *Journal of Invertebrate Pathology, (Baculovirus in Medicine - Special Issue)*, **107**:S94-105.
- [180] **Lesch HP, Laitinen A, Peixoto C, Vicente T, Makkonen ME, Laitinen L, Pikkarainen JT, Samaranayake H, Alves PM, Carrondo MJT, Ylä-Herttuala S, Airenne K** (2011) "Production and Purification of lentiviral vectors generated in 293T suspension cells with baculoviral vectors", *Gene Therapy*, **18**, 531-538.
- [181] **Teixeira AP, Duarte TM, Carrondo M, Alves PM** (2011) "Synchronous fluorescence spectroscopy as a novel tool to enable PAT applications in bioprocesses", *Biotechnology and Bioengineering*, **108(8)**:1852-61.
- [182] **Leite SB, Teixeira AP, Miranda JP, Tostões RM, Clemente JJ, Sousa MF, Carrondo MJ, Alves PM** (2011) "Merging bioreactor technology with 3D hepatocyte-fibroblast culturing approaches: Improved in vitro models for toxicological applications", *Toxicology in Vitro*, **25(4)**:825-32.
- [183] **Sá Santos S, Sonnewald U, Carrondo MJ, Alves PM** (2011) "The role of glia in neuronal recovery following anoxia: In vitro evidence of neuronal adaptation", *Neurochemistry International*, **58**:665-675.
- [184] **Rodrigues A, Guerreiro M, Santiago V, Alves PM, Dalba C, Klatzmann D, Carrondo MJT, Coroadinha AS** (2011) "Down-regulation of CD81 tetraspanin in human cells producing retroviral-based particles: Tailoring vector composition", *Biotechnology and Bioengineering*, **108**:2623-3.
- [185] **Vicente T, Mota JP, Peixoto C, Alves PM, Carrondo MJT** (2011) "Rational design and optimization of downstream processes of virus particles for biopharmaceutical applications: Current advances", *Biotechnol Advances*, **29**:869-878.
- [186] **Silva AC, Carrondo MJT, Alves PM** (2011) "Strategies for improved stability of Peste des Petits Ruminants Vaccine", *Vaccine*, **29(31)**:4983-91.
- [187] **Serra M, Correia C, Malpique R, Brito C, Jensen J, Bjorquist P, Carrondo MJT, Alves P** (2011) "Microencapsulation technology: a powerful tool to integrate expansion and cryopreservation of human embryonic stem cells", *PLoS ONE*, **6(8)**:e23212.
- [188] **Carvalho AV, Sá Santos S, Carrondo MJT** (2011) "Extracellular purine and pyrimidine catabolism in cell culture", *Biotechnology Progress*, **27(5)**:1373-1382.
- [189] **Tostões RM, Leite SB, Serra M, Jensen J, Bjorquist P, Carrondo MJT, Brito C, Alves PM** (2011) "Human liver cell spheroids in extended perfusion bioreactor culture for repeated dose drug testing", *Hepatology*, hep.24760.
- [190] **Mandenius CF, Andersson TB, Alves PM, Batzl-Hartmann C, Björquist P, Carrondo MJ, Chesne C, Coecke S, Edsbacke J, Fredriksson JM, Gerlach JC, Heinzle E, Ingelman-Sundberg M, Johansson I, Küppers-Munther B, Müller-Vieira U, Noor F, Zeilinger K** (2011) "Toward preclinical predictive drug testing for metabolism and hepatotoxicity by using in vitro models derived from human embryonic stem cells and human cell lines - a report on the Vitrocellomics EU-project", *Altern Lab Anim*, **39(2)**:147-71.
- [191] **Rodrigues AF, Guerreiro RM, Castro R, Tomás HA, Dalba C, Klatzmann D, Alves PM, Carrondo MJT, Coroadinha AS** (2011) "Down-regulation of CD81 in human cells producing HCV-E1/E2 retroVLPs", *BMC*, **5(Suppl 8)**:P72.

- [192] Marcelino I, de Almeida AM, Brito C, Meyer DF, Barreto M, Sheikboudou C, Franco CF, Martinez D, Lefrançois T, Vachiéry N, Carrondo MJT, Coelho AV, Alves PM, (2012) "Proteomic analyses of Ehrlichia ruminantium highlight differential expression of MAP1-family proteins" - *Veterinary Microbiology, Vet Microbiol*, **4**;156(3-4):305-14.
- [193] Jacqueline Corrigan-Curray, et al., (2012) "Challenges in Vector and Trial Design Using Retroviral Vectors for Long-Term Gene Correction in Hematopoietic Stem Cell Gene Therapy", *Molecular Therapy*, **20**-6:1084-1094.
- [194] Carinhas N, Oliveira R, Alves PM, Carrondo MJT, Teixeira AP, (2012) "Systems biotechnology of animal cells: the road to prediction", *Trends in Biotechnology*, **30**(7):377-85.
- [195] Roldão A, Mellado MC, Lima JC, Carrondo MJT, Alves PM, Oliveira R (2012) "On the effect of thermodynamic equilibrium on the assembly efficiency of complex multi-layered virus-like particles (VLP): the case of rotavirus VLP", *PLoS Computational Biology*, **8**(2):e1002367
- [196] Bandeira V, Peixoto C, Rodrigues AF, Cruz PE, Alves PM, Coroadinha AS, Carrondo MJT (2012) "Downstream Processing of Lentiviral Vectors: Releasing Bottlenecks", *Human Gene Therapy Methods*, **23**(4):255-63.
- [197] Monteiro F, Carinhas N, Carrondo MJT, Bernal V, Alves PM (2012) "Towards system-level understanding of baculovirus host cell interactions: from molecular fundamental studies to large-scale proteomics approaches", *Frontiers in Microbiology*, Nov; **3**:391.
- [198] Carrondo MJT, Alves PM, Carinhas N, Glassey J, Hesse F, Merten OW, Micheletti M, Noll T, Oliveira R, Reichl U, Staby A, Teixeira AP, Weichert H, Mandenius CF (2012) "How can measurement, monitoring, modeling and control advance animal cell culture in industrial biotechnology?", *Biotechnology Journal*, **7**(12):1522-9.
- [199] Fernandes F, Teixeira AP, Carinhas N, Carrondo MJT, Alves PM (2013) "Insect cells as production platform of complex VLPs", *Expert Rev. Vaccines*, **12**(2):225-36.
- [200] Carinhas N, Duarte T, Barreiro L, Carrondo MJT, Alves PM, Teixeira AP (2013) "Metabolic signatures of GS-CHO cell clones associated with butyrate treatment and culture phase transition", *Biotechnology and Bioengineering*, **110**(2):3244-57.
- [201] Vidigal J, Dias MM, Fernandes F, Patrone M, Bispo C, Andrade C, Gardner R, Carrondo MJT, Alves PM, Teixeira AP (2013) "A cell sorting protocol for selecting high-producing sub-populations of Sf9 and High FiveTM cells", *Biotechnology Journal*, **168** (2013) 436–439.
- [202] Monteiro F, Bernal V, Saelens X, Lozano AB, Bernal C, Sevilla A, Carrondo MJT, Alves PM (2014) "Metabolic profiling of insect cell lines: Unveiling cell line determinants behind system's Productivity", *Biotechnol Bioeng*, **20**: 131-145.
- [203] Silva AC, Yami M, Libeau G, Carrondo MJ, Alves PM (2014) "Testing a new formulation for Peste des Petits Ruminants vaccine in Ethiopia", *Vaccine*, **32**(24):2878–288.
- [204] Nestola P, Silva R, Peixoto C, Alves PM, Carrondo MJ (2014) "Adenovirus purification by two-column, size-exclusion, simulated countercurrent chromatography", *Journal of Chromatography A*, **1347**:111–121.
- [205] Nestola P, Villian L, Peixoto C, Martins DL, Alves PM, Carrondo MJ, Mota JP (2014) "Impact of grafting on the design of new membrane adsorbers for adenovirus purification" *Biotechnology Journal*, **181**:1-11.
- [206] Pais DAM, Carrondo MJT, Alves PM, Teixeira AP (2014) "Towards real-time monitoring of therapeutic protein quality in mammalian cell processes", *Current Opinion in Biotechnology*, **30**:161–167.
- [207] Duarte TM, Carinhas N, Barreiro LC, Carrondo MJT, Alves PM, Teixeira AP (2014) "Metabolic responses of CHO cells to limitation of key amino acids", *Biotechnol Bioeng*, **111**:10 (2095-2106).

- [208] Nestola P, Villian L, Peixoto C, Martins DL, Alves PM, Carrondo MJ, Mota JP (2014) "Impact of grafting on the design of new membrane adsorbers for adenovirus purification" *Biotechnology Journal*, **181**:1-11.
- [209] Correia C, Serra M, Espinha N, Sousa M, Brito C, Burkert K, Zheng Y, Hescheler J, Carrondo MJT, Sarić T, Alves PM (2014) "Combining Hypoxia and Bioreactor Hydrodynamics Boosts Induced Pluripotent Stem Cell Differentiation Towards Cardiomyocytes", *Stem Cell Reviews and Reports*, **10**(6):786-801.
- [210] Rodrigues AF, Carrondo MJ, Alves PM, Coroadinha AS (2014) "Cellular targets for improved manufacturing of virus-based biopharmaceuticals in animal cells", *Trends in Biotechnology*, **32**(12):602-7.
- [211] Gomes-Alves P, Serra M, Brito C, Borlado L, López JA, Vázquez J, Carrondo MJ, Bernad A, Alves PM (2014) "Exploring analytical proteomics platforms towards the definition of human cardiac stem cells receptome", *Proteomics*, **15**(7):1332-7.
- [212] Nestola P, Martins DL, Peixoto C, Roederstein S, Schleuss T, Alves PM, Mota JPB, Carrondo MJ (2014) "Evaluation of Novel Large Cut-Off Ultrafiltration Membranes for Adenovirus Serotype 5 (Ad5) Concentration", *PLoS ONE*, **9**(12):e115802.
- [213] Monteiro SMA, Clemente JJ, Carrondo MJT, Cunha AE (2014) "Enhanced Spore Production of Bacillus Subtilis Grown in a Chemically Defined Medium", *Advances in Microbiology*, 2014, **4**:444-454.
- [214] Cunha B, Peixoto C, Silva M, Carrondo MJT, Serra M, Alves PM (2015) "Filtration methodologies for the clarification and concentration of human mesenchymal stem cells", *Journal of Membrane Science*, **478**:117-129.
- [215] Nestola P, Peixoto C, Silva RJS, Alves PM, Mota JPB, Carrondo MJT (2015) "Improved virus purification processes for vaccines and gene therapy", *Biotechnology and Bioengineering*, **112**(5):843-57.
- [216] Silva AC, Simão D, Sousa MFQ, Küppers C, Lucas T, Cruz P, Carrondo MJT, Kochanek S, Alves PM (2015) "Human Amniocyte-derived Cells for the Production of Adenoviral Vectors", *Biotechnology Journal*, **10**:760-771.
- [217] Vlaming M, van Duijn E, Dillingh MR, Brands R, Windhorst AD, Hendrikse NH, Bosgra S, Burggraaf J, de Koning MC, Fidler A, Mocking J, Sandman H, de Ligt R, Fabriek BO, Pasman WJ, Seinen W, Alves T, Carrondo MJT, Peixoto C, Peeters P, Vaes W (2015) "Microdosing of a carbon-14 labeled protein in healthy volunteers accurately predicts its pharmacokinetics at therapeutic dosages", *Clinical Pharmacology & Therapeutics*, **98**(2):196-204.
- [218] Nestola P, Silva RJS, Peixoto C, Alves PM, Carrondo MJT, Mota JPB (2015) "Robust design of adenovirus purification by two-column, simulated countercurrent, size-exclusion chromatography", *Journal of Biotechnology*, **213**:109-119.
- [219] Sousa MFQ, Solva MM, Girus D, Hashimura Y, Wesselschmidt R, Lee B, Roldão Carrondo MJT, Alves PM, Serra M (2015), "Production of oncolytic adenovirus and human mesenchymal stem cells in a single-use, vertical-wheel bioreactor system: Impact of bioreactor design on performance of microcarrier-based cell culture processes", *Biotechnology Progress*, **31**(6):1600-12.
- [220] Cunha B, Aguiar T, Silva MM, Silva R, Sousa MF, Peixoto C, Serra M, Carrondo MJT, Alves PM (2015) "Exploring continuous and integrated strategies for the up- and downstream processing of human mesenchymal stem cells", *Journal of Biotechnology*, **213**:97-108.
- [221] Nestola P, Peixoto C, Alves PM, Carrondo MJT, Mota JPB (2015) "Rational development of two flowthrough purification strategies for adenovirus type 5 and retro virus-like particles", *Journal of Chromatography A*, **1426**:91-101.

- [222] Soares HR, Castro R, Tomás H, Rodrigues AF, Gomes-Alves P, Bellier B, Klatzmann D, Carrondo MJT, Alves PM, Coroadinha AS (2016) "Tetraspanins displayed in retrovirus-derived virus-like particles and their immunogenicity", *Vaccine*, **34**(13):1634-1641.
- [223] Cunha B, Silva RJ, Aguiar T, Serra M, Daicic J, Maloisel JL, Clachan J, Åkerblom A, Carrondo MJ, Peixoto C, Alves PM (2016) "Improving washing strategies of human mesenchymal stem cells using negative mode expanded bed chromatography", *Journal of Chromatography A*, **15**;1429:292-303.
- [224] Gomes-Alves P, Serra M, Brito C, Ricardo CP, Cunha R, Sousa MF, Sanchez B, Bernad A, Carrondo MJT, Rodriguez-Borlado L, Alves PM (2016) "In vitro expansion of human cardiac progenitor cells: exploring 'omics tools for characterization of cell-based allogeneic products", *Translational Research*, **171**(5):96-110.
- [225] Carinhas N, Pais DAM, Koshkin A, Fernandes P, Coroadinha AS, Carrondo MJ, Alves PM, Teixeira A (2016) "Metabolic flux profiling of MDCK cells during growth and canine adenovirus vector production", *Scientific Reports*, **6**:23529.
- [226] Carvalho SB, Freire JM, Moleirinho MG, Monteiro F, Gaspar D, Castanho MA, Carrondo MJ, Alves PM, Bernardes GJ, Peixoto C. (2016) Bioorthogonal Strategy for Bioprocessing of Specific-Site-Functionalized Enveloped Influenza-Virus-Like Particles. *Bioconjugate Chemistry*. 2386–2399.
- [227] Cunha B, Aguiar T, Carvalho SB, Silva MM, Gomes RA, Carrondo MJT, Gomes-Alves P, Peixoto C, Serra M, Alves PM (2017) "Bioprocess integration for human mesenchymal stem cells: from up to downstream processing scale-up to cell proteome characterization", *Journal of Biotechnology*, 2017 Apr 20;248:87-98.
- [228] Sequeira DP, Correia R, Carrondo MJT, Roldao A, Teixeira AP, Alves PM. (2017) "Combining stable insect cell lines with baculovirus-mediated expression for multi-HA influenza VLP production". *Vaccine*. pii: S0264-410X(17)30246-3.
- [229] Bandeira VS, Tomas HÁ, Alice E, Carrondo MJT, Coroadinha AS. (2017) "Disclosing the Parameters Leading to High Productivity of Retroviral Producer Cells Lines: Evaluating Random Versus Targeted Integration", *Human Gene Therapy Methods*. **28**, 78-90.
- [230] Carvalho SB, Moleirinho MG, Wheatley D, Welsh J, Gantier R, Alves PM, Peixoto C, Carrondo MJT. (2017) "Universal label-free in-process quantification of influenza virus-like particles." *Biotechnol J*. 2017 Aug; 12(8).
- [231] Carvalho SB, Fortuna AR, Wolff MW, Peixoto C, Alves PM, Reichl U, Carrondo MJT. (2017) "Purification of influenza virus-like particles using sulfated cellulose membrane adsorbers." *SCI* (2017).
- [232] Vidigal J, Fernandes B, Dias MM, Patrone M, Roldão A, Carrondo MJT, Alves PM, Teixeira AP. (2017) "RMCE-based insect cell platform to produce membrane proteins captured on HIV-1 Gag virus-like particles". *Appl Microbiol Biotechnol*. 2017 Nov 16.
- [233] Carvalho SB, Moreira AS, Gomes J, Carrondo MJT, Thornton DJ, Alves PM, Costa J, Peixoto C. (2018) "A detection and quantification label-free tool to speed up downstream processing of model mucins". *PLOS One*. 2018 Jan 9.
- [234] Daniela P. Sequeira, Ricardo Correia, Carrondo MJT, Roldão A, Ana P. Teixeira, Alves PM. (2018) "Combining stable insect cell lines with baculovirus-mediated expression for multi-HA influenza VLP production". *Vaccine* **36** (2018) 3112–3123.
- [235] Charlton Hume HK, Vidigal J, Carrondo MJT, Middelberg APJ, Roldão A, Lua LHL. (2019), "Synthetic biology for bioengineering virus-like particle vaccines". *Biotechnology and Bioengineering* Vol.116, issue 4, p.919-935 (2019).

- [236] Moleirinho MG, Rosa S, Carrondo MJT, Silva RJS, Whirter AH-Mc, Ahlén G, Lundgren M, Alves PM, Peixoto C. "Clinical-Grade Oncolytic Adenovirus Purification Using Polysorbate 20 as an Alternative for Cell Lysis". *Current Gene Therapy*, 2018.
- [237] Koukios E, Monteleone M, Carrondo MJT, Charalambous A, Girio F, Hernández EL, Mannelli S, Parajó JC, Polycarpou P, Zabaniotou A. (2018) "Targeting sustainable bioeconomy: A new development strategy for Southern European countries. The Manifesto of the European Mezzogiorno". *Journal of Cleaner Production* 172 (2018) 3931-3941.
- [238] Hugo R. Soares, Rute Castro, Hélio A. Tomás, Manuel J.T. Carrondo, Paula M. Alves, Ana S. Coroadinha (2019), "Pseudotyping retrovirus like particles vaccine candidates with Hepatitis C virus envelope protein E2 requires the cellular expression of CD81" *AMB Express* vol. 9, issue 1. (2019)
- [239] Sofia B. Carvalho, Ricardo J.S. Silva, Ana Sofia Moreira, Bárbara Cunha, João J. Clemente, Paula M. Alves, Manuel J.T. Carrondo, Alex Xenopoulos, Cristina Peixoto (2019), "Efficient filtration strategies for the clarification of influenza virus-like particles derived from insect cells" *Separation and Purification Technology* vol. 218, p. 81-88. (2019).
- [240] Sousa M, Fenge C, Rupprecht J, Tappe A, Greller G, Alves PM, Carrondo MJT, Roldão A (2019), "Process intensification for Peste des Petites Ruminants Virus vaccine production" *VACCINE*. 2019 Aug 8. (DOI: [10.1016/j.vaccine.2019.07.009](https://doi.org/10.1016/j.vaccine.2019.07.009)).
- [241] Carvalho SB, Silva RJS, Moleirinho MG, Cunha B, Moreira AS, Xenopoulos A, Alves PM, Carrondo MJT, Peixoto C. (2019), "Membrane-based approach for the downstream processing of influenza virus-like particles" *Biotechnology Journal* vol. 14, issue 8 (2019).
- [242] Moleirinho MG, Silva RJS, Carrondo MJT, Alves PM, Peixoto C. (2019), "Exosome-based therapeutics: Purification using semi-continuous multi-column chromatography". *Separation and Purification Technology* vol. 224, p. 515-523 (2019).
- [243] Pais DAM, Portela RMC, Carrondo MJT, Isidro IA, Alves PM. (2019), "Enabling PAT in insect cell bioprocesses: In situ monitoring of recombinant adeno-associated virus production by fluorescence spectroscopy". *Biotechnology and Bioengineering*. 2019 Jul 17.
- [244] Arez F, Rebelo SP, Fontinha D, Simão D, Martins TR, Machado M, Fischli C, Oeuvray C, Badolo L, Carrondo MJT, Rottmann M, Spangenberg T, Brito C, Greco B, Prudêncio M, Alves PM (2019), "Flexible 3D Cell-Based Platforms for the Discovery and Profiling of Novel Drugs Targeting Plasmodium Hepatic Infection". *ACS Infectious Diseases*. 2019.
- [245] Tomás HA, Mestre DA, Rodrigues AF, Guerreiro MR, Carrondo MJT, Coroadinha AS. (2019), "Improved GaLV-TR glycoproteins to pseudotype lentiviral vectors: impact of viral protease activity in the production of LV pseudotypes". *Methods & Clinical Development* vol. 15, p. 1-8 (2019).

Book Chapters:

- [1] Carrondo MJT *et al.* (1986) "Optimization of Bioconversion of solid and liquid residues" in El-Halwagy MM (Ed) *Biogas Technology Transfer and Diffusion* Elsevier, London, pp: 381-391.
- [2] Carrondo MJT, Reis MAM (1987) "Fixed Film Anaerobic Digestion" *Global Bioconversions Vol I*, DLWise (Ed.), CRC Press, Florida, pp:101-130.
- [3] Santos H, Pereira H, Crespo JPSG, Moura MJ, Carrondo MJT, Xavier AV (1990) "In vivo NMR studies of propionic acid fermentation by *Propionibacterium acidipropionici*" in de Bont JAM *et al* (Ed.) "Physiology of Immobilized Cells" Elsevier, Amsterdam, pp:685-687.

- [4] **Crespo JPSG, Carrondo MJT** (1994) "Integration of Fermentation and Membrane Processes" in Crespo JGSP and Boeddeker KW "Membrane Processes_in Separation and Purification", *Kluwer Academic Publishers*, Dordrecht, Holland, pp: 169-193.
- [5] **Moreira JL, Alves PM, Rodrigues JM, Cruz PE, Aunins JG, Carrondo MJT** (1994) "Studies of Baby Hamster Kidney (BHK) Natural Cell Aggregation in Suspended Batch Cultures" *Annals of the New York Academy of Sciences* **745**: 122-133.
- [6] **Cardoso MM, Mendes CM, Carrondo MJT, Kroner KH, Deckwer W-D, Crespo JPSG** (1994) "Determination of Liquid Membrane Resistance to Amino Acid Transport by Ion-Pairing" in Pyle DL (Ed.) "Separations for Biotechnology" *Elsevier Sci Publ Ltd Vol.3*, pp: 93-99.
- [7] **Coelhoso IM, Crespo JPSG, Silvestre P, Loureiro CV, Kroner KH, Deckwer W-D, Carrondo MJT** (1994) "Effect of Solvent Toxicity on Lactic Acid Fermentation Kinetics" in Pyle DL (Ed.) "Separations for Biotechnology" *Elsevier Sci Publ Ltd Vol.3*, pp: 120-126.
- [8] **Mueller PP, Carvalho AV, Moreira JL, Gesebrick C, Schroeder K, Carrondo MJT** (1999) "Development of an IRF-1 Based Proliferation Control System" in Al-Rubeai M (Ed.) "Cell Engineering" *Kluwer Academic Publishers*, pp: 220-238.
- [9] **Alves PM, Carrondo MJT, Cruz PE** (2007) "Introduction to Animal Cell Technology" in Castilho LR, Moraes AM, Augusto EFP, Butler M (Ed.) "Animal Cell Technology: From Biopharmaceuticals to Gene Therapy", *Taylor & Francis*, S.F, pag:1-12.
- [10] **Mello IMVGC, Conceição M, Jorge SAC, Cruz PE, Alves PM, Carrondo MJT, Pereira CA** (2007) Viral vaccines: concepts, principles and bioprocesses" in Castilho LR, Moraes AM, Augusto EFP, Butler M (Ed.) "Animal Cell Technology: From Biopharmaceuticals to Gene Therapy", *Taylor & Francis*, S.F, pag: 435-458.
- [11] **Alves PM, Cruz PE, Carrondo MJT** (2008) "Introdução à Tecnologia de Cultivo de Células Animais" in Moraes, AM, Augusto, EFP, Castilho, LR (Eds.), "*Tecnologia de Cultivo de Células Animais: de Biofármacos a Terapia Gênica*", *Taylor & Francis*, São Paulo, Chapter 1, 2-14.
- [12] **Cruz PE, Alves PM, Carrondo MJT** (2008) "Vacinas virais: Conceitos, princípios e Bioprocessos" in Moraes AM, Augusto EFP, Castilho LR (Eds.), "*Tecnologia do Cultivo de Células Animais: de Biofármacos a Terapia Gênica*", *Taylor & Francis*, S. Paulo, Chapter 18, 427-450.
- [13] **Vicente T, Peixoto C, Carrondo MJT, Alves PM** (2009) "Virus production for clinical gene therapy" in W. Walther and U. Stein (Ed.), "*Methods in Molecular Medicine – Cancer Gene Therapy*", second edition, Humana Press, Totowa, NJ, USA, 447-470.
- [14] **Cruz P, Carrondo MJT** (2010) EDITORS "Production of Viral Vectors", *Current Gene Therapy*, Vol. 10:6, Editorial.
- [15] **Roldão A, Silva AC, Mellado MCM, Alves PM, Carrondo MJT** (2010) "Viruses and virus-like particles in biotechnology: fundamentals and applications", *Comprehensive Biotechnology*, 2nd Edition, *Elsevier*.
- [16] **Coroadinha AS, Wirth D, Rodrigues AF, Gama-Norton L, Duros C, Cohen-Haguenaer O, Alves PM, Cruz PE, Carrondo MJT, Hauser H** (2012) "Modular retroviral producer cell lines", *CliniBook: Clinical transfer*.
- [17] **Bandeiras V, Peixoto C, Coroadinha AS, Cruz PE, Carrondo MJT, Merten OW, Alves PM** (2012) "Facing the challenges of downstream processing of lentiviral vectors", *CliniBook: Clinical transfer*.
- [18] **Roldao A, Cox M, Alves P, Carrondo M, Vicente T.** (2014) **Chapter 10** "Industrial Large Scale of Suspension Culture of Insect Cells", Hans-Peter Meyer and Diego R. Schmidhalter (eds.) *Industrial Scale Suspension Culture of Living Cells*.
- [19] **Fernandes F, Teixeira AP, Carinhas N, Carrondo MJT, Alves PM** (2014) "Production of complex virus-like particles in Insect cells. Future Medicine", *in press*.

- [20] **Sá JV, Tiago M. Duarte TM, Carrondo MJT, Alves PM Teixeira AP** (2015) “Metabolic Flux Analysis: A Powerful Tool in Animal Cell Culture” **Chapter 16**, Animal Cell Culture, Cell Engineering 9.
- [21] **Isidro IA, Pais DAM, Alves PM, Carrondo MJT**, (2019) “Online Control Strategies” Comprehensive Biotechnology, 3rd edition, Volume 2 (<https://doi.org/10.1016/B978-0-444-64046-8.00112-9>) 943–951.