

Catarina Brito
Curriculum Vitae
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PERSONAL DATA

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EDUCATION

Diploma in Biochemistry, Faculdade de Ciências da Universidade de Lisboa, Portugal, October 2001.

Ph.D. in Biochemistry, Instituto de Tecnologia Química e Biológica (ITQB), Universidade Nova de Lisboa, Portugal, October 2007.

SCIENTIFIC ACTIVITY

Previous and Current Positions

2000 - 2001: Undergraduate student, Laboratory of Glycobiology, ITQB, Portugal.

2001 - 2003: Research fellow, Laboratory of Glycobiology, ITQB, Portugal.

2003 - 2007: Ph.D. student, Laboratory of Glycobiology, ITQB, Portugal.

2006: Visiting Ph.D. student, Membrane Traffic in Neuronal & Epithelial Morphogenesis Laboratory, Institut Jacques Monod, Paris, France.

2007 - 2009: Post-doctoral fellow, Animal Cell Technology Unit, iBET, Portugal.

2009 –2014: Research Associate - Investigador Auxiliar Ciência 2008, Head of the Bioassay Development Team, Cell Bioprocesses Laboratory, Animal Cell Technology Unit, iBET and ITQB-UNL, Portugal.

2013: Visiting Researcher, Lieberman Lab, Harvard Medical School, Boston, USA.

Since 2014: Head of the [Advanced Cell Models Laboratory](#), [Animal Cell Technology Unit](#), [iBET](#) and [ITQB-NOVA](#), Portugal.

Since 2015: Senior Researcher, [INOVA4Health](#)

Since 2018: Principal Researcher, [The Discoveries Centre for Regenerative and Precision Medicine](#) (Discoveries CTR)

Research Interests

My research is mostly translational and focused on development of advanced human cell models (employing induced pluripotent stem cells and other patient-derived cells) to study deregulation of cellular microenvironment in disease progression and therapeutic response. Currently, our main research targets are Central Nervous System diseases and Cancer (solid tumours). I also contribute to projects focusing on neural and hepatic toxicology and stem cell-based therapeutic approaches.

Complementary to my research, I have been providing contract research services to the pharmaceutical & biotechnology industry in the areas of drug development and pre-clinical research.

Keywords: disease modelling; cell microenvironment; 3D cell culture; human stem cells.

Other research interests: glycosylation; intracellular trafficking and exocytosis.

Participation in Funded Projects - FCT and EU

As Principal Investigator (Since 2009):

1. 2011-2014: *"3D in vitro models for reducing animal experimentation in pharmaceutical development: integrative approaches for prediction of hepatic drug metabolism and neurotoxicity"*, PTDC/EEB-BIO/112786/2009, funded by FCT, Portugal.
2. 2011-2016: *"PREDECT - New Models for preclinical evaluation of drug efficacy in common solid tumors"*, funded by Innovative Medicines Initiative Joint Undertaking
3. 2012-2015: *"Human central nervous system in vitro models for preclinical research: new tools for studying viral vector-mediated gene delivery in a 3D cellular context"*, PTDC/EBB-BIO/119243/2010, funded by FCT, Portugal.
4. 2016-2018: *"Colorectal Carcinogenesis Pathways - Establishing a link between carcinogenesis & therapeutic response"*, funded by iNOVA4Health, Portugal (co-PI with Isadora Rosa, IPOLFG).
5. 2016-2018: *"Searching for positive markers in triple negative breast cancer"*, funded by iNOVA4Health, Portugal (co-PI with António Jacinto, CEDOC).
6. 2017-2019: *"The effect of dual HER2 blockade on anti-tumor immune cells"*, funded by iNOVA4Health, Portugal (co-PI with Inês Silva, IPOLFG).
7. 2017-2019: *"Targeting monocytes as angiogenesis promoters in cancer- New application for old drugs"*, funded by iNOVA4Health, Portugal (co-PI with Jacinta Serpa, IPOLFG/CEDOC).
8. 2017-2019: *"Do genetic variants in CD2AP increase the risk of developing Alzheimer's disease?"*, funded by iNOVA4Health, Portugal (co-PI with Cláudia Almeida, CEDOC).
9. 2017-2019: *"Effect of topical mesalazine on the formation of adenomas in rectal stumps or ileal pouches of familial adenomatous polyposis or MUTYH associated polyposis patients after colectomy (MAPAF trial)"*, funded by iNOVA4Health, Portugal (co-PI with Isadora Rosa, IPOLFG).
10. 2018-2021: *"AstroReact - Unravelling the role of astrocyte-induced neural microenvironment remodelling in traumatic brain injury pathobiology"*, funded by FCT, Portugal (co-PI with Daniel Simão, iBET).

As Team Member:

1. 1999-2001: *"Glicosilação das mucinas na mucosa gástrica normal, carcinoma gástrico e linhas celulares de carcinoma gástrico: papel da glicosilação e das apomucinas"* PRAXIS/SAU/14111/1998, funded by FCT, Portugal.
2. 2002-2005: *"Identificação e caracterização de proteínas envolvidas na organização do Golgi de células de mamífero"* POCTI/BCI/38631/99, funded by FCT, Portugal.
3. 2003-2005: *"Clinical, Neurophysiological and Neurochemical studies in Amyotrophic Lateral Sclerosis"*, POCTI/CBO/43952/2002, funded by FCT, Portugal.
4. 2004-2007: *"STREP - Signaling and Membrane Trafficking in Transformation and Differentiation"*, LSHG-CT-2004-503228, funded by 6th Framework Programme, EU.
5. 2004-2009: *"CellPROM - Cell Programming by Nanoscaled Devices"*, NMP4-CT-2004-500039, funded by 6th Framework Programme, EU.
6. 2006-2011: *"CLINIGENE - European Network for the Advancement of Clinical Gene Transfer and Therapy"*, LSHB-CT-2006-018933, funded by 6th Framework Programme, EU.
7. 2008-2012: *"BrainCAV - Nonhuman adenovirus vectors for gene delivery to the Brain"*, HEALTH-F5-2008-222992, funded by 7th Framework Programme, EU.
8. 2009-2011: *"Integrated strategy for expansion, neuronal differentiation and cryopreservation of human embryonic stem cells"*, PTDC/BIO/72755/2006, funded by FCT, Portugal.
9. 2009-2012: *"Hyperlab" - High Yield and Performance Stem Cell Lab"*, funded by 7th Framework Programme, EU.
10. 2010-2013: *"2D fluorometry: a powerful tool to improve mammalian cell process development"*, PTDC/EBB-EBI/102750/2008, funded by FCT, Portugal.
11. 2010-2013: *"BACULOME - Engineering cellular energetics for improvement of bioprocesses: metabolic modeling for enhanced vaccines production"*, PTDC/EBB-EBI/103359/2008, funded by FCT, Portugal.
12. 2010-2015: *"CAREMI - Cardio Repair European Multidisciplinary Initiative"*, HEALTH-F5-2010-242038, funded by 7th Framework Programme, EU.

13. 2012-2014: "Transbio Sudoe - The southern European transnational cluster" *SOE3/P1/F498*, funded by Interreg IVB, EU.
14. 2012-2015: "Smart particles for drug delivery to the colon and to the liver", *PTDC/EQU-EPR/119631/2010*, funded by FCT, Portugal.
15. 2012-2016: "*BRAINVECTORS— From Brain Gene Transfer towards Gene Therapy: Pharmacological Assessment of AAV, CAV and LVV*", *FP7-PEOPLE-2011-IAPP*, funded by 7th Framework Programme, EU.
16. 2013-2015: "SpeCCC- Specialised Cell Carrier Components", *FP7-SME-2012-315717-SpeCCC*, funded by 7th Framework Programme, EU.
17. 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.
18. 2014-2015: "Microfluidics light-sheet microscopy for increased throughput analysis of 3D cell models and zebra-fish", *EXPL/BBB-IMG/0363/2013*, funded by FCT, Portugal.
19. 2014-2017: "*CARDIOSTEM- Engineered cardiac tissues and stem cell-based therapies for cardiovascular applications*", *MITP-TB/ECE/0013/2013*, funded by MIT-Portugal Program, FCT, Portugal.
20. 2015-2017: "*CardioRegen: Integrative studies from the embryo to Scalable Multipronged Generation of hESC-derived Myocardial progenitors for heart repair*" *HMSP-ICT/0039/2013*, funded by Harvard medical School-Portugal Program, FCT, Portugal.
21. 2015-2018: "*Ovarian cancer, a suitable model to define metabolic profile as a tool to predict chemoresistance*", Funded by iNOVA4Health, Portugal.
22. 2015-2017: "*Generation of genetically-modified hiPSC cell lines for the development of a new transcriptional program sensor system for diagnoses and therapeutics*", funded by iNOVA4Health, Portugal.
23. 2015-2017: "*Depicting Barrett's esophagus biopathogenesis and its malignant progression in three-dimensional in vitro models*", funded by iNOVA4Health, Portugal.
24. 2015-2017: "*Molecular profiling and novel targeted therapies in thyroid and colorectal cancers*", funded by iNOVA4Health, Portugal.

Participation in Funded Projects - Industry and Companies

As Project Manager (Since 2009):

1. 2009-2010: *Micromet*, Germany, "Development of cell-based assays for assessment of cell-mediated cytotoxicity induced by cancer drugs candidates".
2. 2010-2011: *Tecnimede*, Portugal, "Neuronal cell models for pharmacological development".
3. 2012-2013: *Tecnimede*, Portugal, "Development of complex neural *in vitro* models for pharmacological development".
4. 2013-2015: *Tecnimede*, Portugal, "PROiNEURO".
5. 2014: *MERCK*, Germany, "Cancer Stem Cells".
6. Since 2015: *MERCK*, Germany, "Liver-stage *Plasmodium* infection cell models".
7. Since 2016: *Abbvie*, Chicago, USA "Patient-derived *ex vivo* Cancer Models".

As Team Member:

1. 2008-2009: *CEVEC*, Germany, "Novel expression system for the production of human glycoproteins".
2. 2010: *Centocor*, J&J, USA, "Development of bioprocesses for Stem Cells for Cell Therapy applications".
3. 2011-2012: *MERCK*, Germany, "Novel cell lines based on lentiviral vector technology".

Fellowships

2001- 2002: Fellowship for Initiation to Science (BIC), iBET, Oeiras, Portugal.

2002: Research Fellowship (BI), ITQB, Oeiras, Portugal.

2003 - 2007: Ph.D. Fellowship, Fundação para a Ciência e Tecnologia, Portugal.

2007 - 2009: Post-doctoral Fellowship, Fundação para a Ciência e Tecnologia, Portugal.

Awards

2001: Top Biochemistry degree thesis (final mark of 20/20), Faculdade de Ciências da Universidade de Lisboa.

2004: FEBS Youth Travel Fund Award for participation in the EMBO/FEBS Practical Course “Electron Microscopy and Stereology in Cell Biology”.

2012: EMBL Fellowship for participation in the EMBL Conference “Stem Cells in Cancer and Regenerative Medicine”, Heidelberg, Germany.

2012: Engineering Conferences International (ECI) Travel Award for oral communication in the ECI conference “Cell Culture Engineering XIII”, Arizona, USA.

2012: Travel Award for oral communication in “TERM STEM 2012: Stem Cells and the Future of Regenerative Medicine: From Basic Research, to Translational Aspects and Upcoming Therapies”, Guimarães, Portugal.

2015: *Scientific Merit Award from Santander Totta/ New University of Lisbon*

Professional Societies

- European Association for Cancer Research (EACR)
- International Society for Stem Cell Research (ISSCR)
- European Society for Animal Cell Technology (ESACT)
- Federation of European Biochemical Societies (FEBS)
- Portuguese Association for Cancer Research (ASPIC)
- Portuguese Society for Stem Cells and Cell Therapies (SPCE-TC)
- Portuguese Biochemistry Society (SPB)

ACADEMIC ACTIVITY

Supervision Activity

Supervision of PhD students: Ana Paula Terrasso (April 2018), Marta Estrada (November 2018); Ana Luísa Cartaxo (2016-2020); Maria Teresa Mendes (2017-2020); Ana Sofia Batalha (2018-2021). *Co-supervisions:* Sofia Rebelo (June 2015), Daniel Simão (February 2016), Inês Figueira (December 2017), Ana Catarina Pinto (July 2018), Sofia Abreu (2016-2019), Diana Saraiva (2016-2020), Maria Raquel Moita (2016-2020).

Supervision of Post-Doc Researchers: Telma de Palma (2012), Vítor Espírito Santo (2013-2016), Sofia Rebelo (2015-2016), Daniel Simão (2016-2017), Giacomo Domenici (since April 2018); Ana Paula Terrasso (since June 2018).

Co-supervision: Patrícia Alves (2011 - 2016), Dusica Rados (2016 - 2017).

Supervision of Master Students: Ana Terrasso (2011/12), Ana Catarina Pinto (2011/12), Lorena Ardaya (2013/14), Susana Veloso (2013/14), Francisca Arez (2014/15), Nuno Lopes (2017/18).

Co-supervision: Inês Silva (2012/13), Diana Silva (2015/16), Marta Teixeira (2016/17).

Supervision of Research Grantees and Research Technicians (MSc and PhD): Ana Mendes (2009), Ivette Pacheco (2010), Inês Costa (2010-2011), Antónia Pinto (2010), Daniel Simão (2010-2011), Cristina Pereira (2009-2012), Marta Silva (2011-2012), Marta Estrada (2011-2013), Rita Costa (2013-2014), Carina Silva (2014-2015), Ann-Sophie Frombach (2016), Francisca Arez (2015-2016), Tatiana Martins (2016-2017).

Supervision of MIT-Portugal PhD program Lab Rotations: Eunice Costa (2009); Inês Costa (2011); Daniel Simão (2012), Tânia Vieira (2013), Ana Luísa Cartaxo (2016), Miguel Fuzeta (2017).

Participation in the training and supervision of MSc and PhD students (Since 2005): Armanda Rodrigues, Marcos Sousa, Marta Silva; Eda Machado, Cristina Escrevente, Ricardo Gouveia, Catarina Gomes, António Roldão, Margarida Serra, Rita Malpique, Sofia Leite, Rui Tostões, Ana Amaral, João Sá, Francisca Arez.

Member of PhD Committees: Rita Malpique (2010), Margarida Serra (2011), Rui Tostões (2011), Cláudia Correia (2017), Rita Santos (2018), Bernardo Abecasis (2018), Francisca Arez (2017-2020).

Participation in Juries

MSc Thesis: Ana Rita Almeida de Oliveira, FC-UL, 2011; Graça Susete Costa de Carvalho Marques, FCT-UNL, 2013; Alexandre Miguel Barata Dias, FCT-NOVA, 2017.

PhD Thesis: *As main oponente* - Nuno Oliveira, Minho University, Braga, Portugal, 2017; Ana Catarina Pereira Pinto, i3S, Porto, Portugal, 2018. *As jury member:* Rita Malpique, ITQB-UNL, Portugal, 2010; Fabien Loustalot, University of Montpellier, France, 2015; Fernanda Silva, Nova Medical School, Portugal, 2017.

Teaching Activity:

Since 2008: Assistant Lecturer in Biochemical Engineering, MSc Program in Chemical and Biochemical Engineering, FCT, UNL, Lisbon

Since 2008: Invited Lecturer of several MSc programs in Biotechnology and Biomedicine, the Lisbon area – Faculty of Science, University of Lisbon; Faculty of Science and Technology, NOVA; Institute of Agronomy; CEDOC.

2009/10: Invited Lecturer, Medicine PhD program, Faculdade de Ciências Médicas da Universidade Nova de Lisboa.

2011-2013: Lecturer, ITQB PhD program.

Since 2013: Regular invited Lecturer of several PhD programs in the Lisbon area – Regenerative Medicine, CEDOC; Medicine, New Medical School; Bioengineering – Cell Therapies and Regenerative Medicine (IST, iBET, ITQB, CEDOC, IMM).

Since 2013: Member of the Executive Committee and coordinator of the Biopharmaceutical Technology Profile of [MolBioS: PhD program in Molecular Biosciences](#) (ITQB, IBET, REQUIMTE, CREM and IGC).

Since 2013: Coordinator of the curricular unit “Tools for Discovery and Preclinical Research” of the [MolBioS: PhD program in Molecular Biosciences](#) (ITQB, IBET, REQUIMTE, CREM and IGC).

Since 2013: Lecturer at the MolBioS PhD program and PhD Program in Bioengineering – Cell Therapies and Regenerative Medicine.

PUBLICATIONS

Thesis

Biochemistry Degree Thesis: “Importance of the transmembrane domain of human fucosyltransferase III for its Golgi localization and *in vivo* activity”, 2001, Faculdade de Ciências da Universidade de Lisboa.

Ph.D. Thesis: “[Fucosyltransferase IX: characterization and biological role](#)”, 2007, Instituto de Tecnologia Química e Biológica, Universidade Nova de Lisboa.

Papers in Peer-Reviewed Journals

* Corresponding author

‡ Co-senior author

1. Sousa V, **Brito C**, Costa T, Lanoix J, Nilsson T, Costa J (2003) “Importance of Cys, Gln and Tyr from the transmembrane domain of human (3/4 fucosyltransferase III for its localization and sorting in the Golgi of baby hamster kidney cells”, *Journal of Biological Chemistry* 278, 7624-762. <http://dx.doi.org/10.1074/jbc.M209325200>
2. Sousa V, **Brito C**, Costa J (2004) “Deletion of the cytoplasmic domain of human alpha 3/4 fucosyltransferase III causes the shift of the enzyme to early Golgi compartments”, *Biochimica et Biophysica Acta - General Subjects* 1675, 95-104. <http://dx.doi.org/10.1016/j.bbagen.2004.08.015>
3. Escrevente C/Machado E, **Brito C**, Reis CA, Stoeck A, Runz S, Marmé A, Altevogt P, Costa J (2006) “Different expression levels of (3/4 fucosyltransferases and Lewis determinants in ovarian carcinoma tissues and cell lines”, *International Journal of Oncology* 29, 557-66. <http://dx.doi.org/10.3892/ijo.29.3.557>
4. Morais VA, **Brito C**, Pijak DS, Crystal AS, Fortna RR, Li T, Wong PC, Doms RW, Costa J (2006) “N-glycosylation of human nicastrin is required for interaction with the lectins from the secretory pathway calnexin and ERGIC-53”, *Biochimica et Biophysica Acta - Molecular Basis of Disease* 1762, 802-10. <http://dx.doi.org/10.1016/j.bbadis.2006.06.018>
5. **Brito C**, Escrevente C, Reis CA, Lee VM-Y, Trojanowski, JQ, Costa J (2007) “Increased levels of fucosyltransferase IX and carbohydrate Lewis^x adhesion determinant in human NT2N neurons”, *Journal of Neuroscience Research* 85, 1260-1270. <http://dx.doi.org/10.1002/jnr.21230>
6. 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, 557-66. <http://dx.doi.org/10.1002/jnr.21451>
7. **Brito C**, Gouveia R, Costa J (2007) “Stable expression of an active soluble recombinant form of human fucosyltransferase IX in *Spodoptera frugiperda* Sf9 cells”, *Biotechnology Letters* 11, 1623-1630. <http://dx.doi.org/10.1007/s10529-007-9455-x>

8. Brito C, Kandzia S, Graça T, Conradt H, Costa J (2008) "Human fucosyltransferase IX: Specificity towards N-linked glycoproteins and relevance of the cytoplasmic domain in intra-Golgi localization", *Biochimie* 90, 1279-90. **Chosen by editors as cover image of *Biochimie*, Vol 90, Issue 9.** <http://dx.doi.org/10.1016/j.biochi.2008.03.002>
9. Serra M, Brito C, Leite SB, Gorjup E, von Briesen H, Carrondo MJT, Alves PM (2009) "Stirred bioreactors for the expansion of adult pancreatic stem cells", *Annals of Anatomy* 191, Special Issue - Stem Cell Research, CELLFROM European Project, 104-15. <http://dx.doi.org/10.1016/j.aanat.2008.09.005>
10. Brito C, Danglot L, Galli T, Costa J (2009) "Subcellular localization of the carbohydrate Lewis^x adhesion structure in hippocampus cell cultures", *Brain Research* 1287, 39 – 46. <http://dx.doi.org/10.1016/j.brainres.2009.06.075>
11. Serra M, Brito C, Costa E, Sousa MFQ, Alves PM (2009) "Integrating human stem cell expansion and neuronal differentiation in bioreactors", *BMC Biotechnology* 9:82. **Ranked "highly accessed".** <http://dx.doi.org/10.1186/1472-6750-9-82>
12. Malpique R, Osório L, Ferreira D, Ehrhart F, Katsen-Globa A, Brito C, Zimmermann H, Alves PM (2010) "Alginate encapsulation for cryopreservation of brain cell aggregates", *Tissue Engineering Part C Methods* 16, 965-77. <http://dx.doi.org/10.1089/ten.tec.2009.0660>
13. Serra M, Brito C, Sousa MFQ, Jensen J, Strehl R, Hyllner J, Tostões R, Clemente J, Carrondo MJT, Alves PM (2010) "Improving expansion of pluripotent hESCs in perfused bioreactors through oxygen control", *Journal of Biotechnology* 148, 208-215. <http://dx.doi.org/10.1016/j.jbiotec.2010.06.015>
14. Serra M, Correia C, Malpique R, Brito C, Jensen J, Björquist P, Carrondo MJT, Alves PM (2011) "Microencapsulation technology: a powerful tool to integrate expansion and cryopreservation of pluripotent human embryonic stem cells", *PLoS One* 6, e23212. <http://dx.doi.org/10.1371/journal.pone.0023212>
15. Tostões R, Leite S, Serra M, Jensen J, Björquist P, Carrondo MJT, Brito C, Alves PM (2012) "Human liver cell spheroids in extended perfusion bioreactor culture for repeated dose drug testing", *Hepatology* 55, 1227-1236. <http://dx.doi.org/10.1002/hep.24760>
16. 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* 156, 305-14. <http://dx.doi.org/10.1016/j.vetmic.2011.11.022>
17. Brito C, Simão D, Costa I, Malpique R, Pereira CI, Fernandes P, Serra M, Schwarz S, Schwarz J, Kremer EJ, Alves PM (2012), "3D cultures of human neural progenitor cells: dopaminergic differentiation and genetic modification", *Methods* 56, 452–460. <http://dx.doi.org/10.1016/j.ymeth.2012.03.005>
18. Serra M, Brito C, Correia C, Alves PM (2012) "Process engineering of human pluripotent stem cells for clinical application", *Trends in Biotechnology* 30, 350-9. <http://dx.doi.org/10.1016/j.tibtech.2012.03.003>
19. Malpique R, Tostões RM, Beier A, Serra M, Brito C, Schulz J, Björquist P, Zimmermann H, Alves PM (2012) "Surface-based cryopreservation strategies for human embryonic stem cells: a comparative study", *Biotechnology Progress* 8, 1079-87. <http://dx.doi.org/10.1002/btpr.1572>
20. Gualda EJ, Simão D, Pinto C, Alves PM, Brito C* (2014) "Imaging of human differentiated 3D neural aggregates using Light Sheet Fluorescence Microscopy", *Frontiers in Cellular Neuroscience* 8, 221. <http://dx.doi.org/10.3389/fncel.2014.00221>
21. Correia C, Serra M, Espinha N, Sousa M, Brito C, Burkert K, Zheng Y, Hescheler J, Carrondo MJ, Sarić T, Alves PM (2014) "Combining hypoxia and bioreactor hydrodynamics boosts induced pluripotent stem cell differentiation towards cardiomyocytes", *Stem Cell Reviews and Reports* 10, 786-801. <http://dx.doi.org/10.1007/s12015-014-9533-0>
22. Hickman J, Graeser R, De Hoogt R, Vidic S, Brito C, Gutekunst M, Van der Kuip H (2014) "Capturing tumor complexity in vitro: three dimensional models of cancer for pharmacology and cell biology", *Biotechnology Journal* 9, 1115-28. <http://dx.doi.org/10.1002/biot.201300492>
23. Rebelo SP, Costa R, Estrada M, Shevchenko V, Brito C, Alves PM (2015) "Enhanced xenobiotic and biosynthetic metabolism of HepaRG microencapsulated spheroids in DMSO-free culture", *Archives of Toxicology* 89, 1347-58. <http://dx.doi.org/10.1007/s00204-014-1320-9>
24. Gomes-Alves P, Serra M, Brito C, Borlado LR, López JA, Vázquez J, Carrondo MJ, Bernad A, Alves PM (2015) "Exploring analytical proteomic platforms towards the definition of human Cardiac Stem Cells Receptome", *Proteomics* 7, 1332-37. <http://dx.doi.org/10.1002/pmic.201400318>

25. Simão D, Pinto C, Piersanti S, Weston A, Peddie CJ, Bastos AEP, Licursi V, Schwarz SC, Collison LM, Salinas S, Serra M, Teixeira AP, Saggio I, Lima PA, Kremer EJ, Schiavo G, **Brito C***, Alves PM (2015) "Modelling human neural functionality in vitro: 3D culture for dopaminergic differentiation", *Tissue Engineering – Part A* 21, 654-68. <http://dx.doi.org/10.1089/ten.TEA.2014.0079>
26. Terrasso AP, Pinto C, Serra M, Filipe AE, Almeida S, Ferreira AL, Pedroso P, **Brito C***, Alves PM (2015) "Novel scalable cell based-model for in vitro neurotoxicity testing: combining human differentiated neurospheres with gene expression and functional endpoints", *Journal of Biotechnology – 3D Cultures conquer in vitro testing* (special issue) 205, 82-92. <http://dx.doi.org/10.1016/j.jbiotec.2014.12.011>
27. Suter-Dick L, Alves PM, Blaauboer BJ, Bremm KD, **Brito C**, Coecke S, Flick B, Fowler P, Hescheler J, Ingelman-Sundberg M, Jennings P, Kelm JM, Manou I, Mistry P, Moretto A, Roth A, Stedman D, van de Water B, Beilmann M. (2015) "Stem cell derived (SCD) systems in toxicology assessment", *Stem Cells and Development* 24, 1284-96. <http://dx.doi.org/10.1089/scd.2014.0540>
28. Materne EM, Ramme AP, Terrasso AP, Serra M, Alves PM, **Brito C**, Sakharov DA, Tonevitsky AG, Lauster R, Marx U. (2015) "A multi-organ chip co-culture of neurospheres and liver equivalents for long-term substance testing" *Journal of Biotechnology – 3D Cultures conquer in vitro testing* (special issue) 205, 36-46. <http://dx.doi.org/10.1016/j.jbiotec.2015.02.002>
29. Silva MM, Rodrigues AF, Correia C, Sousa MFQ, **Brito C**, Coroadinha AS, Serra M, Alves PM (2015) "Robust expansion of human pluripotent stem cells: integration of bioprocess design with transcriptomic and metabolomic characterization", *Stem Cells Translational Medicine* 4, 731-42. <http://dx.doi.org/10.5966/sctm.2014-0270>
30. Bohn T, McDougall GJ, Alegría A, Alminger M, Arrigoni E, Aura A-M, **Brito C**, Cilla A, El SF, Karakaya S, Martínez-Cuesta MC, Santos CN (2015) "Mind the gap - deficits in our knowledge of aspects impacting the bioavailability of phytochemicals and their metabolites – a position paper focussing on carotenoids and polyphenols" *Molecular Nutrition & Food Research* 59, 1307-23. <http://dx.doi.org/10.1002/mnfr.201400745>
31. Piersanti S, Burla R, Licursi V, **Brito C**, La Torre M, Alves PM, Simão D, Monttini C, Salinas S, Negri R, Tagliafico E, Kremer EJ, Saggio I (2015) "Transcriptional response of human neurospheres to helper-dependent CAV-2 vectors: activation of DNA damage response, modulation of microtubule motors and centromeric proteins" *Plos One* 10, e0133607 <http://dx.doi.org/10.1371/journal.pone.0133607>
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hypoxia and to escape from carboplatin cytotoxicity", *Scientific Reports* 8, 9513. <https://doi.org/10.1038/s41598-018-27753-y>

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Book Chapters

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‡ Co-senior author

1. Serra M, Correia C, **Brito C** and Alves PM (2013) "Bioprocessing of Human Pluripotent Stem Cells for Cell Therapy Applications". In: Al-Rubeai M., Naciri M. (eds) *Stem Cells and Cell Therapy. Cell Engineering*, vol 8. Springer. https://doi.org/10.1007/978-94-007-7196-3_4.
2. Rebelo SP, Costa R, Sousa MF, **Brito C**, Alves PM (2015) "Establishing liver bioreactors for in vitro research". . In: Vinken M., Rogiers V. (eds) *Protocols in In Vitro Hepatocyte Research. Methods in Molecular Biology (Methods and Protocols)*, vol 1250. Humana Press. https://doi.org/10.1007/978-1-4939-2074-7_13.
3. Rebelo SP, Materne E-M, **Brito C**, Horland R, Alves PM, Marx U (2016) "Validation of bioreactor and human-on-a-chip devices for chemical safety assessment". In: Eskes C., Whelan M. (eds) *Validation of Alternative Methods for Toxicity Testing. Advances in Experimental Medicine and Biology*, vol 856. Springer. https://doi.org/10.1007/978-3-319-33826-2_12.
4. Simão D, Arez F, Terrasso AP, Pinto C, Sousa MFQ, **Brito C***, Alves PM* (2016) "Perfusion Stirred-tank Bioreactors for 3D differentiation of Human Neural Stem Cells". In: Turksen K. (eds) *Bioreactors in Stem Cell Biology. Methods in Molecular Biology*, vol 1502. Humana Press *Bioreactors for Stem Cells Biology: Methods and Protocols - Methods Mol Biol.* 1502, 129-42, Springer Science. https://doi.org/10.1007/7651_2016_333.
5. Vidic S, Estrada MF, Santo VE, Osswald A, Barbier M, Chong Y‡, Sommergruber W‡, de Hoogt‡, **Brito C‡**, Graeser R‡ "PREDECT protocols for complex 2D/3D cultures" *Systems Chemical Biology - Methods Mol Biol.* Springer Science, *in press*

Conference Proceedings

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1. Simão D, Costa I, Serra M, Schwarz J, **Brito C***, Alves PM (2011) "Towards human central nervous system *in vitro* models for preclinical research: strategies for 3D neural cell culture", *BMC Proceedings* 5, P53. <http://dx.doi.org/10.1186/1753-6561-5-S8-P53>
2. Rebelo SP, Estrada M, Costa R, Chesné C, **Brito C**, Alves PM (2013) "Evaluation of the impact of matrix stiffness on encapsulated HepaRG spheroids", *BMC Proceedings* 7, P77. <http://dx.doi.org/10.1186/1753-6561-7-S6-P77>
3. Simão D, Pinto C, Teixeira AP, Alves PM, **Brito C*** (2013) "¹H-NMR spectroscopy for human 3D neural stem cell cultures metabolic profiling", *BMC Proceedings* 7, O8. <http://dx.doi.org/10.1186/1753-6561-7-S6-O8>
4. Espírito Santo V, Estrada M, Veloso S, Sousa MFQ, Van der Kuip H, Oren M, Boghaert ER, Alves PM, **Brito C*** (2014) "Recapitulation of non-small-cell lung carcinoma microenvironment in perfusion bioreactor cultures: the impact of hypoxia on tumour-stroma crosstalk, *European Journal of Cancer* 50, S83. [http://dx.doi.org/10.1016/S0959-8049\(14\)50311-5](http://dx.doi.org/10.1016/S0959-8049(14)50311-5)
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Science dissemination

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1. Serra M, **Brito C** and Alves PM (2010) "Bioengineering strategies for stem cell expansion and differentiation" *Canal Bioquímica* 7, 30-38. http://canalbq.spb.pt/docs/canalBQ_0007-30-37.pdf
2. Correia C, Espinha N, **Brito C**, Serra M, Alves PM (2013) "Bioengenharia de células estaminais pluripotentes humanas para aplicação clínica" *Boletim Biotecnologia* 4, 31-33. <http://www.spbt.pt/getfile.aspx?tipo=pub&fileid=36>
3. Simão D, Pinto C, Serra M, **Brito C***, Alves PM (2013) "Sistemas de cultura 3D para diferenciação neural de células estaminais humanas" *Boletim Biotecnologia* 4, 17-20. <http://www.spbt.pt/getfile.aspx?tipo=pub&fileid=36>

PATENTS

- Co-Inventor in the patent "*Infected Cell Cultures*", submitted by MERCK (Germany) to the European Patent Office: Provisional filed on 10.03.2017; filled on 08.03.2018 (PCT application number PCT/EP2018/055717).

OTHER CV HIGHLIGHTS

- *Scientific outputs*, as in September, 2018 (*Scopus*) - articles in international peer-reviewed journals: 50; reviews: 4; book chapters: 3. Total citations: 1163; *h-index*: 19.
- Invited lectures in conference cycles and international courses, academic and industrial (20); Invited lecturer in international conferences (13), of a total of over 80 oral communications and more than 150 poster communications.
- Co-coordinator of the [ESACT "Drug Development Course 2018, 3rd Edition](#)", Costa Brava, Spain, October 2018.
- Member of the Scientific Committee of [iNOVA4Health](#), since 2018.
- Member of the thematic taskforce of [NOVASaúde](#), NOVA University of Lisbon, since 2018.
- Chair of the Scientific Board of the [Analytical Services Unit](#), iBET, since 2015.
- Member of the Board of the General Assembly of the [SPCE-TC - Portuguese Society for Stem Cells and Cell Therapy](#), since 2013.
- Member of the Workgroup for definition of "Laboratório Associado de Oeiras" Strategic Areas, 2012.
- Member of the Executive Committee and Coordinator of the Biopharmaceutical Technology Profile of [MolBioS](#): PhD program in Molecular Biosciences (ITQB, IBET, REQUIMTE, CREM and IGC), since 2013.
- Member of the Admission Committee of PhD Program in Bioengineering – Cell Therapies and Regenerative Medicine (IST, IBET, ITQB, CEDOC, IMM, RPI), since 2013.
- Invited expert of European Partnership for Alternative Approaches for Animal Testing (EPAA) workgroup on Stem Cell-derived organ-like models for analysing mid and long-term dosing dynamic studies, since 2013.
- Expert project reviewer for the calls: - "Equipment of Excellence 2011" (Labex 2011), French National Research Agency (ANR); Joint trans-national call for multinational research projects for pathway analysis (Pathways 2017), EU Joint Programme – Neurodegenerative Disease Research (JPND).
- Regular project reviewer: Research Foundation Flanders (FWO), Belgium; Research Councils UK (RCUK); Technology Foundation STW, Netherlands; Breast Cancer Now, UK; ANR, France.
- Regular reviewer for Biomaterials, Scientific Reports, Biotechnology Journal, Journal of Biotechnology, Journal of Neurochemistry, Journal of Neuroscience, etc.
- *Science and Society*: Participation in the "Ciência Aberta" initiatives (organized by Ministério da Ciência and Tecnologia, Fundação para a Ciência e Tecnologia); participation in ITQB Open Day; participation in several TV and radio shows; participation in the initiative "A researcher in your school" within the "Science and Technology Week"; lectures and debates about ethical issues associated to the application of Stem Cells and about the "Three Rs Principle" (Replacement, Reduction and Refinement of Animal Experimentation) and the tools available for its implementation.