

CURRICULUM VITAE

DIANA S NASCIMENTO

NEWTherapies Group

INEB - Instituto de Engenharia Biomédica

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PRESENT POSITIONS

- Since 2013: Postdoctoral Research fellow in the framework of the Integrated Project on Biomedical Engineering for Regenerative Therapies and Cancer (NORTE-07-0124-FEDER-000005)
- Since 2012: Coordinator at INEB of the program “Universidade Júnior - Escola de Ciências da Vida e da Saúde”
- Since 2012: Co-coordinator at INEB of the program “Ciência Viva - Ocupação de Jovens nas Férias”

EDUCATION

- 2003-2008: PhD in Molecular Immunology, University of Aberdeen, Scotland, UK. Supervised by Professor Chris Secombes (University of Aberdeen, Scotland) and Dr. Nuno dos Santos (IBMC, Porto), (April 2008).
- 1998-2003: Biology degree (Scientific Branch), Universidade do Porto, Porto (June 2003).

AREA OF SCIENTIFIC ACTIVITY

NOVEL STRATEGIES TO IMPROVE CARDIAC REGENERATION

The adult mammalian heart is generally considered as one of the least regenerative organs. Conversely, the neonatal mammalian heart (Day1-Day7) and hearts of teleost fish and other lower vertebrates display a hyperplastic response to injury. My **broad research interest** is on the ontogenic and phylogenetic boundaries of the heart regenerative response. **The premise of my work** is that the dissection of the cardiac microenvironment on a regenerative stage (fetus-neonate mice / adult zebrafish) will provide new molecular insights crucial for the development of novel therapies to replace the damaged myocardium. At present, I am integrated in the *Stem Cell Biology Team*, led by P. Pinto-do-Ó, of the Instituto Nacional de Engenharia Biomédica (INEB). The main interest of the Team is the identification and the characterization of cellular/molecular mechanisms implicated in regeneration and repair in adult-tissues. In this regard I am engaged on the identification of extracellular matrix (ECM) / ECM-associated component(s) that enable and/or promote (fetal heart) and restrain and/or inhibit (adult heart) cardiac-tissue regeneration following injury. Over the last five years I have steadily contributed to develop the means that are now set for the next step: the usage of the *in vitro* and *in vivo* tools we established in the Team for a more translational kind of research.

ACADEMIC AND PROFESSIONAL EXPERIENCE

- 2013 (Jun): Postdoctoral Research fellow in the framework of the Integrated Project on Biomedical Engineering for Regenerative Therapies and Cancer (NORTE-07-0124-FEDER-000005)
- 2008 (April) - 2013 (May): Postdoctoral researcher at INEB – Instituto de Engenharia Biomédica, Porto, Portugal. This period was interrupted during 9 months for two maternity leaves.
- 2008-2012: Post-doctoral researcher at INEB – Instituto de Engenharia Biomédica, Porto, Portugal.

- 2008 (Nov-Dec)-2009 (Jan): Visiting Researcher at the Keck Graduate Institute of Applied life science (Claremont, USA) in collaboration with Dr. Y. Tang.
- 2008 (March): Visiting Researcher at the Experimental Cardiology, Thoraxcenter, Cardiovascular Research Institute COEUR, Erasmus MC, University Medical Center Rotterdam, (Rotterdam, The Netherlands) in collaboration with Professor Dirk Jan Duncker.
- 2007-2008: Research Assistant at INEB – Instituto de Engenharia Biomédica, Porto, Portugal.
- 2003-2007: PhD in Molecular Immunology at the University of Aberdeen, Scotland, UK .
- 2002-2003: Research trainee at IBMC – Instituto de Biologia Molecular e Celular (Porto, Portugal) in collaboration with Dr. Nuno dos Santos.
- 2001: Research trainee at Department of Applied Biology at the Instituto de Genética Médica Jacinto Magalhães, Porto, Portugal.
- 1998-2003: Biology degree (Scientific Branch). Universidade do Porto, Porto. June 2003.
- by INEB (Porto, Portugal), IPATIMUP (Porto, Portugal) and IBEC (Barcelona, Spain).

PARTICIPATION IN SCIENTIFIC PROJECTS

- *MatriCard - Dissecção e Reconstrução de Matriz Extracelular: Nicho de Regeneração Cardíaca.* FCT, Grant PTDC/SAU-ORG/118297/2010. PI: Pinto-do-Ó P. 2012-2015
- Co-responsible investigator in an industrial contract between ECBio and the INEB for the *Assessment of the role of human UC-derived ECBio cells-transplantation into the myocardial-infarcted C57BL/6 mouse heart.* 2011
- *Towards the establishment of cell-based therapy for repairing cardiac-injury:* characterization, purification and functional analysis of potential therapeutic-beneficial *cell-subsets.* FCT, Grant PTDC/SAU-OSM/68473/2006. PI: Pinto-do-Ó P. 2007- 2011
- *Production of important markers for monitoring the immune response in sea bass (Dicentrarchus labrax).* FCT, Grant POCTI/CVT/44925/2002. PI: dos Santos NMS. 2003-2006.

SUPERVISION OF SCIENTIFIC WORK

Supervision/co-supervision of 1 PhD student, 4 MSc students and 8 research trainees.

ORGANIZATION OF SCIENTIFIC EVENTS

- Bioimaging2013 – International Symposium in Applied Bioimaging Bridging Development and Application. Porto, to be held on Oct 2013, Organizing Committee, Coordinator of Laboratory Sessions, Chair of oral sessions.
- Bioimaging2012 – International Symposium in Applied Bioimaging Bridging Development and Application. Porto, Sep 2012. Organizing Committee, Coordinator of Laboratory Sessions, Chair of oral sessions.
- 3rd I³S Scientific retreat. Póvoa de Varzim, May 2012. Chair of poster sessions
- 7th Annual International Meeting of the Portuguese Society for Stem Cells and Cell Therapies. Porto, April 2012. Organizing Committee and Chair of oral sessions
- 10th Advanced Summer Course in Cell-Materials Interactions – Self-Assembly: From Nature to Clinics. Porto, 22-26/06/09). Organizer of laboratory session and chair of oral sessions.

PATENTS

Santos JM, Filipe E, Filipe M, Teixeira M, Cipriano M, Barcia R, Cruz P, Mosqueira D, **Nascimento DS**, Pinto-do-O P, Cruz H, Castro M, Miranda JP. 2013. Method for priming umbilical cord tissue-derived

mesenchymal stromal cells (UC-MSCs) towards a higher therapeutic potential and applications thereof. Portugal: ECBio; [INPI, Provisional Patent: PPP47907/13]

PUBLICATIONS

DS Nascimento has 13 peer-reviewed papers published in international journals

THESIS

- “*Study of Sea Bass Cytokines: Molecular Characterization and Expression Analysis in Response to Photobacterium damsela* ssp. *piscicida* Exposure”, University of Aberdeen, Scotland, UK. Supervised by Professor Chris Secombes (University of Aberdeen, Scotland, UK) and Dr. Nuno dos Santos (IBMC, Porto, Portugal). April, 2008.

ARTICLES IN INTERNATIONAL REFEREED JOURNALS (***h index=7, 167 citations***)

SELECTED PUBLICATIONS

- Nascimento DS, *Mosqueira D, Sousa LM, Valente M, Resende TP, Almeida J, Martins JP, Santos JM, Barcia RN, Cruz P, Cruz H, Pinto-do-Ó P. Human umbilical cord tissue-derived MSCs (UCX[®]) attenuate remodeling following myocardial infarction by pro-angiogenic, anti-apoptotic and endogenous cell activation mechanisms. *Stem Cell Research and Therapies*, pub ahead of print.
- Freire A*, **Nascimento DS***, Forte G*, Valente M, Resende TP, Pagliari S, Abreu C, Carvalho I, Di Nardo P and Pinto-do-Ó P. Stable phenotype and function of immortalized Lin⁻Sca-1⁺ cardiac progenitors (iCPC^{Sca-1}) in long-term culture: a step closer to standardization. **2013**. *Stem Cells and Development*, **pub ahead of print**.
- Esteves R, Valente M, **Nascimento DS**, Pinto-do O P, and Quelhas P. Automatic Myocardial Infarction Size Extraction in an Experimental Murine Model using an Anatomical Model. *ISBI*, pages 1–4, **2012**.
- **Nascimento DS***, Valente M*, Esteves T, Pina MF, Guedes J, Freire A, Quelhas P and Pinto-do-Ó P. MIQuant – semi-automation of infarct size assessment in models of cardiac ischemic injury. *PLoS ONE*, **2011**, *PLoS ONE* 6(9): e25045. doi:10.1371/journal.pone.0025045
- Esteves T, Valente M, **Nascimento DS**, Pinto-do-Ó P and Quelhas P. Automatic and Semi-automatic Analysis of the Extension of Myocardial Infarction in an Experimental Murine Model. *Proceedings on IbPRIA, LNCS 6669*, pp:151-158, **2011**.
- **Nascimento D.S.**, Pereira P.J.B., Reis M.I.R., do Vale A., Zou J., Silva M.T., Secombes C.J., dos Santos N.M.S., **2007**. Molecular cloning and expression analysis of sea bass (*Dicentrarchus labrax* L.) tumor necrosis factor- α (TNF- α). *Fish and Shellfish Immunology*, 23(3), 701-710.
- **Nascimento D.S.**, do Vale A., Tomás A., Zou J., Secombes C.J., dos Santos N.M.S., **2007**. Cloning, promoter analysis and expression in response to bacterial exposure of sea bass (*Dicentrarchus labrax* L.) interleukin-12 p40 and p35 subunits. *Molecular Immunology*. 44(9), 2277-2291
- Pinto R.D., **Nascimento D.S.**, Reis M.I.R., do Vale A., dos Santos N.M.S., **2007**. Molecular characterization, 3D modelling and expression analysis of sea bass (*Dicentrarchus labrax* L.) interleukin-10. *Molecular Immunology*. 44(8), 2056-2065
- do Vale A., Silva M.T., dos Santos N.M.S., **Nascimento D.S.**, Reis-Rodrigues P., Costa-Ramos C., Ellis A.E., Azevedo J.E., **2005**. AIP56, a novel plasmid-encoded virulence factor of *Photobacterium damsela* subsp. *piscicida* with apoptogenic activity against sea bass macrophages and neutrophils. *Molecular Microbiology*. 58(4), 1025–1038.

COMMUNICATIONS

DS Nascimento work has been presented in 4 oral communications by invitation, 11 other oral communications and over 20 posters in international conferences



Fev, 2014.