



marcos.sande-melon@petermac.org



0406893575

ORCID: 0000-0003-3844-0143

Dr. Marcos Sande-Melon

SNSF Postdoctoral fellow at the Peter MacCallum Cancer Centre

EDUCATION

- January 2016-September 2019** **PhD in Biomedical Sciences (GCB)**
University of Bern
- November 2014-December 2015** **PhD Program in Molecular Biosciences**
Autonomous University of Madrid
- September 2013-July 2014** **Master's degree in Molecular and Cellular Biology**
Autonomous University of Madrid
- September 2009-July 2013** **University degree in Biology**
University of Salamanca

RESEARCH EXPERIENCE

- May 2020-Present** **Liver regeneration in the zebrafish**
Andrew G Cox's Laboratory. Peter MacCallum Cancer Research Center. Melbourne, Australia
- November 2014-September 2019** **Heart regeneration in the zebrafish**
Nadia Mercader's Laboratory. Institute of Anatomy, University of Bern and Spanish National Center for Cardiovascular Research (CNIC)
- January-March 2018** **RNA-Seq Preparation and Bioinformatic Analysis**
GeneCore Facility. EMBL Heidelberg, Germany
- September 2013- July 2014** **Searching for nuclear-mitochondrial genes by Gene Trap**
Dr. José Antonio Enriquez's Laboratory. Spanish National Center for Cardiovascular Research (CNIC), Spain
- September 2010-July 2013** **Astrocytes in the optic nerve head: Axonal guidance and regeneration**
José Aijon Noguera and Rosario Arévalo's Laboratory. Institute of Neuroscience of Castilla y León (INCyL), Spain
- June 2012-August 2012** **Internship in Microbiology, Biochemistry, Genetics and Pathology Department**
Pilar Reyes Ramirez. University Hospital of Salamanca, Spain

PUBLICATIONS

Development of a hepatic cryoinjury model to study liver regeneration

Marcos Sande-Melón, David Bergemann, Juan Manuel Gonzalez-Rosa, Andrew G Cox. **BioRxiv 2023.**

Contribution: Experimentation design, experiments, imaging, bioinformatic analysis, figure design, and manuscript writing.

Adult *sox10*⁺ cells contribute to myocardial regeneration in the zebrafish

Marcos Sande-Melón, Inês J. Marques, María Pérez-López, María Galardi-Castilla, Xavier Langa, Gabriela Guzmán-Martínez, David Miguel Ferreira-Francisco, Dinko Pavlinic, Vladimir Benes, Remy Bruggmann, Nadia Mercader. **Cell reports 2019.**

Contribution: All the figures in the manuscript have been performed by myself. Including paraffin-cryosection IHC, whole-mount IHC in hearts, in situ hybridisation, RNA-Seq library, bioinformatics analysis, light-sheet and confocal microscopy, image analysis.

VLP-based vaccine against aggregated amylin in Type 2 diabetes Mellitus patients.

Elisa S. Roesti, **Marcos Sande-Melón**, C. Boyle, Federico L. Storni, T. Lutz, Martin F. Bachmann.

Vaccines 2020.

Contribution: Histology staining and in vivo confocal imaging.

Adaptation mechanism of the adult zebrafish respiratory organ to endurance training

Matthias Messerli, Dea Aaldijk, David Haberth, Helena Ross, Carolina Garcia Poyatos, **Marcos Sande-Melón**, Oleksiy-Yakhar Khoma, Fluri Wieland, Sarya Fark, Valentin Djonov.

PLoS ONE 2020.

Contribution: Confocal microscopy, proliferation assays, 3D analysis, immunofluorescence.

Vaccination with nanoparticles combined with micro-adjuvants protects against cancer

Mona O. Mohsen, Matthew D. Heath, Gustavo Cabrel-Miranda, **Marcos Sande-Melón**, Elisa S. Roesti, Martin F. Bachmann. **Journal for Immunotherapy of Cancer 2019.**

Contribution: Light-sheet microscopy and clearing of lymphatic nodes.

ADDITIONAL ACADEMIC TRAINING

November 2018

scRNA-Seq Analysis

University of Bern

July 2018

Storytelling and Filmmaking at Locarno Festival

Swiss Academy of Science

October 2017

Principles in Transgenesis Mouse Technology

University of Bern

August 2017

Introduction to RNA-Seq

Swiss Institute of Bioinformatics

PRIZES, AWARDS, FELLOWSHIPS, MEMBERSHIPS

EMBO travel grant. **Melbourne, Australia 2022.**

10X Genomics Grant. **Melbourne, Australia 2022.**

Harold Mitchell Prize. **Melbourne, Australia 2021.**

SNSF Postdoctoral Fellowship **Bern, Switzerland 2021.** Swiss National Foundation.

Christian Boullin Fellowship **Heidelberg, Germany 2018.** EMBL Heidelberg.

Best Poster Prize Award **Bern, Switzerland 2017.** University of Bern.

Best Logo Design for SwissZebra Conference **Bern, Switzerland 2017.** University of Bern.

Best Poster Prize Award **Salamanca, Spain 2015.** FEBS and University of Salamanca.

Master Excellence Fellowship Programme **Madrid, Spain 2014.** Autonomous University of Madrid

Santander Bank Companies Internship Programme **Salamanca, Spain 2013.** AQUIMISA LABS

Life Science Switzerland membership **since 2018.**

European Cardiology Society membership **since 2017.**

CONFERENCES

ANZebrafish meeting

Development of a hepatic cryoinjury model to study liver regeneration

Oral Presentation. **Brisbane, Australia 2023**

GRC Tissue Repair and Regeneration

Adult sox10⁺ cells contribute to myocardial regeneration in the zebrafish

Oral Presentation. New London, United States 2019

Swiss Cardiovascular Research Meeting

Adult sox10⁺ cells contribute to myocardial regeneration in the zebrafish

Oral Presentation. Fribourg, Switzerland 2019

SwissZebra Meeting

Role of sox10-derived cells during cardiac regeneration in zebrafish

Best Poster Prize. Bern 2017

EMBO Conference The Molecular and Cellular Basis of Regeneration and Tissue Repair

Role of sox10-derived cells during cardiac regeneration in zebrafish

Poster Presentation . Salerno 2016

SwissZebra Meeting

Role of sox10-derived cells during cardiac regeneration in zebrafish

Oral Presentation. Basel 2016

SwissZebra Meeting

sox10-derived cells during cardiac regeneration in zebrafish

Oral Presentation. Fribourg 2015

Young Life Scientist's Symposium: Cell cycle: The Challenge to coordinate genome

sox10-derived cells during cardiac regeneration in zebrafish

Award best poster. Salamanca 2015

RESEARCH SKILLS

Microscopy Techniques

Light-Sheet Microscopy

Confocal Microscopy

Brightfield Microscopy

Fixed and *in vivo* acquisition

3D Imaging of cleared whole organs

Molecular Imaging Techniques

Section-Immunofluorescence

WM-Immunofluorescence

CUBIC-Clarity Clearing Organ Protocols

in situ hybridization

Histology

Histological stainings

Microtome and Cryostat

Zebrafish and Mouse techniques

Microinjection

Cryoinjury in the heart

Resection in the heart

Bone-Marrow Extraction

Transplantation

Resection Optic Nerve

Limb Dissection

Sequencing Techniques

Bulk and scRNA-Seq Libraries

ChIP-Seq Libraries

General Techniques

Flow Cytometry

PCR

qPCR

Western Blot

ELISA

Whole mount and sections *in situ* hybridization

Mass Spectrometry

Proteomics (RIME-Protein Complexes)

CRISPR/Cas9

Bioinformatic Languages and Statistical analysis

R Language Programming

Python Language Programming

Java Language Programming

GraphPad Prism

3D and 2D Image Analysis

Imaris Software

Arivis Software

Fiji Software

Ilastik Software

Matlab

Animal Models

Zebrafish

Medaka

Mouse

TEACHING AND SUPERVISION

Beth Longan supervisor during her honours in Biochemistry
[University of Melbourne](#)

Teaching assistant of the Master's Program Biomedical Engineering 2017-2018
[University of Bern](#)

Teaching assistant of the medicine and veterinary bachelor for histology lectures at 2016-2019
[University of Bern](#)

Chantal Bachmann's supervisor during bachelor
[University of Bern](#)

INFORMATICS SKILLS

Graphic Design

Adobe Illustrator
Adobe Photoshop
Adobe InDesign

Movie Design

Adobe Premiere Pro

Statistical Analysis

R Language Programming
GraphPad Prism
Python Language

LANGUAGES

Spanish **Native Speaker**

English **Full Working Proficiency**

German **Limited Working Proficiency**

Italian **Limited Working Proficiency**

SCIENTIFIC INTEREST

Cardiovascular and liver regenerative biology, development, bioinformatics, epigenetics, single cell technologies.

REFERENCES

Andrew G. Cox

Professor at the University of Melbourne and PI at Peter MacCallum Cancer Research Center
andrew.cox@petermac.org

Rosario Arevalo Arevalo

Professor at University of Salamanca and Dean of Biology Faculty at University of Salamanca
mraa@usal.es

Nadia Mercader Huber

Professor at University of Bern and PI at Spanish National Centre for Cardiovascular Research (CNIC)
nadia.mercader@ana.unibe.ch

Joan Isern Marin

Senior researcher at the Spanish National Centre for Cardiovascular Research (CNIC)
jisern@cnic.es

Vladimir Benes

Head of GeneCore Facility at EMBL Heidelberg
benes@embl.de

Ruth Lyck

Professor at University of Bern
ruth.lyck@tki.unibe.ch