



APPOINTMENTS

Sir Norman Gregg Fellow, Research Officer, RO3, Embryology Unit, CMRI.

Conjoint Lecturer, School of Medical Science, Sydney University.

CMRI undergraduate students' coordinator

CONTACT

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HOBBIES

Drum
Writing
Photo
Travels

PIERRE OSTEIL

Research Officer

EDUCATION

PhD

December 16th, 2013

"Generation of rabbit embryonic stem cell lines suitable for the generation of somatic chimeras"

School: UCBL Lyon 1

Supervisors: Thierry Joly and Marielle Afanassieff

Master

October 5th, 2010

"Derivation of embryonic stem cell lines in rabbit, monkey and Human"

School: Ecole Pratique des Hautes Etudes (EPHE)

Supervisors: Pierre Savatier, Thierry Joly and Marielle Afanassieff

Technical degree in biology

June 2006

Diplôme Universitaire de Technologie (DUT), UCBL Lyon 1

WORK EXPERIENCE

CMRI Postdoctoral Fellow

July 2014 to Present

Since 2014, I oversee several projects aiming at understanding molecular regulation of early cell fate decision into mouse embryo and human pluripotent stem cells.

Inserm PhD candidates

January 2011 to December 2013

My PhD project was focused on deciphering molecular regulation of pluripotency maintenance in rabbit ESC. This project requires the use of more than one thousand rabbit embryos.

Kunming Institute of Zoology Master student

October to December 2008

"Derivation of ES cell lines from NT (Nuclear Transferred) blastocysts in the rhesus macaque."

Under the direction of Prof. Weizhi Ji and Prof. Qi Zhou

Master Internship at Inserm U846 Master student

September 2007 to December 2010

"Derivation of ES cell lines from NT (Nuclear Transferred) blastocysts in the rhesus macaque."

Under the direction of Prof. Weizhi Ji and Prof. Qi Zhou

SKILLS

Tissue Culture:

- Embryo culture: mouse, monkey, Human and rabbit
- Pluripotent stem cell derivation and culture: mouse (ESC + EpiSC), monkey (ESC), Human (ESC and iPSC) and rabbit (ESC and iPSC)
- Fibroblast derivation and culture: mouse, monkey, Human and rabbit
- Gut organoids

Animal work:

- Species: rabbit, mouse
- Euthanasia and anesthesia
- Embryo collection, microinjection, uterine transfer and teratoma production
- Animal Experimentation Degree (Level 1 obtained in France - 2009)

Cellular characterization:

- Immunostaining
- Flow cytometry (use of Diva and FlowJo softwares)
- Karyotyping
- Microscopy: Time-Lapse Video-microscopy, confocal and lightsheet microscopy.

Molecular Biology:

- Quantitative PCR
- Western Blot
- Protein purification
- Fluidigm instruments: Single-Cell Autoprep C1 system and Biomark.
- High throughput Sequencing: ChIP-sequencing and RNA-sequencing (Sample and Library preparation)

Bioinformatics

- NGS analysis: R, Matlab, Java
- Network analysis: String, Cytoscape
- Imaging analysis: Fiji (Image J) and Imaris

LIST OF PUBLICATIONS (PUBMED)

Click [Here](#)

ORCID

<https://orcid.org/0000-0002-5832-6703>

RESEARCH OUTPUTS

I) Refereed journal articles (per year)

2020

Gavin-Plagne L, Perold F, **Osteil P**, Voisin S, Moreira SC, Combourieu Q, Saïdou V, Mure M, Louis G, Baudot A, Buff S, Joly T, Afanassieff M.

Insights into Species Preservation: Cryobanking of Rabbit Somatic and Pluripotent Stem Cells. *Int J Mol Sci.* 2;21(19):E7285. doi: 10.3390/ijms21197285

Fan X, Waardenberg AJ, Demuth M, **Osteil P**, Sun JQJ, Loebel DAF, Graham M, Tam PPL, Fossat N.

TWIST1 Homodimers and Heterodimers Orchestrate Lineage-Specific Differentiation.

Mol Cell Biol. 14;40(11):e00663-19. doi: 10.1128/MCB.00663-19.

Kim HJ, **Osteil P**, Humphrey SJ, Cinghu S, Oldfield AJ, Patrick E, Wilkie EE, Peng G, Suo S, Jothi R, Tam PPL, Yang P.

Transcriptional network dynamics during the progression of pluripotency revealed by integrative statistical learning.

Nucleic Acids Res. 28;48(4):1828-1842. doi: 10.1093/nar/gkz1179.

Salehin N, Tam PPL, **Osteil P***

Prenet: Predictive network from ATAC-SEQ data.

J Bioinform Comput Biol. 18(1):2040003. doi: 10.1142/S021972002040003X

**Corresponding author*

2019

McMahon R, Sibbritt T, Salehin N, **Osteil P**, Tam PPL.

Mechanistic insights from the LHX1-driven molecular network in building the embryonic head. *Development, Growth and Differentiation.* doi: 10.1111/dgd.12609. **Review**

Osteil P*, Studdert JB, Goh HN, Wilkie EE, Fan X, Khoo PL, Peng G, Salehin N, Knowles H, Han JJ, Jing N, Fossat N, Tam PPL.

Dynamics of Wnt activity on the acquisition of ectoderm potency in epiblast stem cells. *Development.* doi: 10.1242/dev.172858.

**Corresponding author*

Sibbritt T, **Osteil P**, Fan X, Sun J, Salehin N, Knowles H, Shen J, Tam PPL.

Gene Editing of Mouse Embryonic and Epiblast Stem Cells. *Methods in Molecular Biology* doi: 10.1007/978-1-4939-9086-3_6.

2018

Friedman CE, Nguyen Q, Lukowski SW, Chiu HS, Helfer A, Miklas J, Suo Suo S, Han JDJ, **Osteil P**, Peng G, Jing N, Baillie GJ, Senabouth A, Christ AN, Bruxner TJ, Murry CE, Wong ES, Ding J, Wang Y, Hudson J, Ruohola-Baker H, Bar-Joseph Z, Tam PPL, Powell JE, and Palpant NJ.

Analysis of cardiac differentiation at single cell resolution reveals a requirement of hypertrophic signaling for HOPX transcription. *Cell Stem Cell.* doi: 10.1016/j.stem.2018.09.009.

Sibbritt T, Ip CK, Khoo PL, Wilkie E, Jones V, Sun JQJ, Shen JX, Peng G, Han JJ, Jing N, **Osteil P**, Ramialison M, Tam PPL, Fossat N.

A gene regulatory network anchored by LIM homeobox 1 (LHX1) for embryonic head development. *Genesis.* doi: 10.1002/dvg.23246

Liu C, Wang R, He Z, **Osteil P**, Wilkie E, Yang X, Chen J, Cui G, Guo W, Chen Y, Peng G, Tam PPL, Jing N.

INTERNATIONAL SCIENTIFIC COMMUNITIES (since 2018)

ISSCR abstract review committee: reviewing abstracts for the annual meeting.

Prelights: our goal is to help scientists navigating the large amount of preprint manuscripts from multiple platforms by selecting preprints of interest and writing a one-page long summary of the findings. I have experienced good feedback from authors that I generally email before posting my highlights on their work to ask them further questions on their work.

<https://prelights.biologists.com/profile/s/pierre-osteil/>

F1000: this community aims at highlighting good quality paper by writing a short paragraph and marking the quality of the work. This allows the scientific communities to obtain another opinion on the published work.

<https://f1000.com/prime/thefaculty/member/1030000>

ROLE AT CMRI (since 2017)

Undergraduate student coordinator

This position involves organising internship of undergraduate students every summer, organising and chairing the local Dean Prize competition for Sydney University summer research students' program.

Grant Advisory Committee

The goal of this committee is to select grants available to students, ECRs, MCRs and PIs and allocate them to the right person. We believe this becomes essential to gather funding necessary to retain scientists within the institute.

PhD committee

This role involves conducting potential PhD student interviews, organising recruitment of new students and other minor tasks.

Bioresources committee

This committee discusses problems and improvements related to the animal house facility.

Suppressing Nodal Signaling Activity Predisposes Ectodermal Differentiation of Epiblast Stem Cells. Stem Cell Report. doi: 10.1016/j.stemcr.2018.05.019.

2017

Tapponnier Y, Afanassieff A, Aksoy I, Aubry M, Moulin A, Medjani L, Bouchereau W, Mayère C, **Osteil P**, Nurse-Francis J, Oikonomakos I, Joly T, Jouneau L, Archilla C, Schmaltz-Panneau B, Peynot N, Brasc H, Pinton A, Lecardonnel J, Gocza E, Beaujean N, Duranthon and Savatier P. **Reprogramming of rabbit induced pluripotent stem cells toward epiblast and chimeric competency using Krüppel-like factors.** Stem Cell Research 24:106-117 doi: 10.1016/j.scr.2017.09.001

Savatier P, **Osteil P** and Tam PPL.

Pluripotency of embryo-derived stem cells from rodents, lagomorphs, and primates: Slippery slope, terrace and cliff. Stem Cell Research. doi: 10.1016/j.scr.2017.01.008. **Review.**

2016:

Osteil P, Moulin A, Aubry M, Joly T, Jouneau L, Santamaria C, Tapponnier Y, Archilla C, Schmaltz-Panneau B, Lecardonnel J, Barasc H, Mouney-Bonne, N, Genthon C, Roulet A, Donnadiou C, Acloque H, Gocza E, Duranthon V, Afanassieff M and Savatier P.

A panel of embryonic stem cell lines reveals the variety and dynamic of pluripotent states in rabbits. Stem Cell Reports. doi: 10.1016/j.stemcr.2016.07.022

2015:

Osteil P, Studdert J, Wilkie E, Fossat N and Tam PPL.

Generation of genome-edited mouse epiblast stem cells via a detour through ES cell-chimeras. Differentiation. doi: 10.1016/j.diff.2015.10.004

Chen H, Aksoy I, Gonnot F, **Osteil P**, Aubry M, Hamela C, Rognard C, Hochard A, Voisin S, Fontaine E, Mure M, Afanassieff M, Cleroux E, Guibert S, Chen J, Vallot C, Acloque H, Genthon C, Donnadiou C, De Vos J, Sanlaville D, Guérin JF, Weber M, Stanton L, Rougeulle C, Pain B, Bourillot PY, and Savatier P.

Reinforcement of STAT3 activity reprograms human embryonic stem cells towards naïve-like pluripotency. Nature Communication. doi: 10.1038/ncomms8095

Afanassieff M, **Osteil P** and Savatier P.

Generation of Embryonic Stem Cells in Rabbits. Methods Molecular Biology. doi: 10.1007/7651_2015_209

2014

Schmaltz-Panneau B, Jouneau L, **Osteil P**, Tapponnier Y, Afanassieff M, Moroldo M, Jouneau A, Daniel N, Archilla C, Savatier P and Duranthon V. 2014. Contrasting transcriptome landscapes of rabbit pluripotent stem cells in vitro and in vivo. Animal Reproduction Science. doi: 10.1016/j.anireprosci.2014.05.014

2013

Osteil P, Tapponnier Y, Markossian S, Godet M, Schmaltz-Panneau B, Jouneau L, Cabau C, Joly T, Blachère T, Gocza E, Bernat A, Yerle M, Acloque H, Hiddot S, Bösze Z, Duranthon V, Savatier P, Afanassieff M. **Induced pluripotent stem cells derived from rabbits exhibit some characteristics of naïve pluripotency.** Biology Open. doi: 10.1242/bio.20134242

II) Refereed conference papers

2017

Osteil P, Wilkie E, Rawson R, Studdert J, Tam P.

Modulation of Epiblast Stem Cell fates by WNT-Mixl1 activity. Mechanisms of Development. doi: 10.1016/j.mod.2017.04.592

III) Preprint (BioRxiv)

2020

Xiaochen Fan, V. Pragathi Masamsetti, Jane Q. J. Sun, Kasper Engholm-Keller, **Pierre Osteil**, Joshua Studdert, Mark E. Graham, Nicolas Fossat, Patrick P.L. Tam

TWIST1 and chromatin regulatory proteins interact to guide neural crest cell differentiation

bioRxiv 2020.09.06.285387; <https://doi.org/10.1101/2020.09.06.285387>

IV) International conference attendance (10)

2019: June: ISSCR Meeting (Los Angeles): **ORAL PRESENTATION + ISSCR Travel Award**

2018: September: EMBO: Engineering Multicellular Self organisation III (Cambridge, UK). **Travel award**

June: ISSCR Meeting (Melbourne): Poster (Presenter)

2017: June: 18th ISDB Meeting (Singapore): **ORAL PRESENTATION + Welcome Trust Travel Award**

May: ASMR NSW Annual Meeting (Sydney): Poster (Presenter)

2016: June: ISSCR Meeting (San Francisco): Poster (Presenter) + **ISSCR Travel Award**

March: ANZSCDB (Sydney): **ORAL PRESENTATION**

2015: March: ANZSCDB (Sydney): Poster (Presenter)

2014: October: ADBW (Tangalooma): Poster (Presenter)

2013: June: ISSCR Meeting (Boston): Poster (Presenter and Co-writer of a second poster)

GRANT & AWARDS

2019

ARC (DP190102793) "Capturing tissue-specific progenitors from embryos and stem cells".

2016

NHMRC (GNT1127976) "(Re)wiring a stem cell: Deciphering the molecular mechanism underpinning lineage propensity"

2015

ARC (DP160103651) "Controlling the first step of differentiation of embryonic cells"

2014

I received an FRM (Medical Research Foundation – France) fellowship of 1-year postdoctoral salary for the "Study of epigenome and transcriptome of murine EpiSCs" at CMRI (SPE20140129375). This fellowship allowed me to commence my post-doctoral study in the Embryology Unit.

REFEREES

Prof. Patrick P.L. TAM, PhD FAA FAHMS
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LEADERSHIP

I) Teaching experiences

2018 to 2020: Showcase at CMRI for Dalyell Program (former known as TSP) supervision.

6h Practical supervision each semester

2016 to 2020: Lecturer: Cells and Development HSTO3003: "Mouse as a model" at Sydney University (Frank Lovicu) – 4h Lecture

2017: Lecturer: Reproduction, Development and Disease PHSI3010: "Endoderm Development" at Sydney University (Stuart Fraser) – 3h Lecture

II) Students supervision (15: 2 PhD, 5 Honours, 2 Masters, 1 TSP, 5 Summer students)

2020: Sydney University (Nazmus Salehin, Hani Kim) / Honours: Sydney University (Jiayi Su, Puja Thapa) / Dalyell: Sydney University (Xiuchen Bella Li, 3rd year)

2019: PhD: Sydney University (Nazmus Salehin) / Honours: Sydney University (Annie Qin) > First class Honours (85) / Summer: Sydney University (Xiuchen Bella Li, 2nd year)

2018: PhD: Sydney University (Nazmus Salehin) / Honours: Sydney University (Hilary Knowles) > First class Honours (86) / TSP: Sydney University (Jasneil Singh, 3rd year) / Summer: Wollongong University (Mitchell Acev, 2nd year)

2017: Honours: Sydney University (Nazmus Salehin) > First class Honours (88) / Summer: Wollongong University (Michelle Newbery, 2nd year)

2016: Summer: Sydney University (Charley-Lea Pollard, 3rd year) / Summer: Wollongong University (Grady Smith, 2nd year)

2014: Master: EPHE University, France (Anais Moulin)

2013: Master: UCBL1 University, France (Claire Santamaria)

III) Staff supervision (8: 6 Research Assistants and 2 ECR)

2019 to 2020: Research Assistant x4 (Nicole Santucci, Hilary Knowles, Jane Sun, Simon Cai) and Early Career Researchers x2 (Pragathi Masamsetti, Nader Aryamanesh)

2018: Research Assistant x2 (Nicole Santucci, Emilie Wilkie)

2017: Research Assistant x3 (Nicole Santucci, Emilie Wilkie, Renee Rawson)

2016: Research Assistant x2 (Renee Rawson, Emilie Wilkie)