

Dr. CHRISTOPHE RAYNAUD

Senior Staff Scientist



Contact

Phone:

+974 5522 60 72

Email:

raynaud.chris@gmail.com

WWW:

<https://raynaudchris.wixsite.com/christopheraynaud>

D.O.B: 03 - Sept – 1980

Nationality : French

Main Scientific skills

- CRISPR genomic edition
- Cancer research
- Immunology – immuno-oncology
- Stem cells research
- Flow cytometry
- Microscopy
- Molecular biology

Summary

Multidisciplinary senior staff scientist with expertise in oncology, CRISPR, cancer immuno-modulation, stem cell research, and strong background in flow cytometry, microscopy and molecular biology.

I thrive on innovation and relish the challenge of developing pioneering technologies to tackle tomorrow's obstacles.

Work History

- | | |
|-------------------|---|
| 2020 -
Current | Senior Staff Scientist
<i>Sidra Medicine, Doha, Qatar</i>
<i>Tumor Biology laboratory</i> <ul style="list-style-type: none">• CRISPR-Cas9 validation of candidate genes for cancer immunomodulation, (activation, inhibition, Knock-Out, Knock-In, tagging)• Spheroids immune infiltration 3D model• CAR-T and TCR T cell derivation from cord blood and genomic edition• Setup of new tools for molecular diagnostic for cancer patients with pathology laboratory |
| 2015 -
2020 | Senior Staff Scientist / Stem cell - CRISPR Core lead
<i>Sidra Medicine, Doha, Qatar</i> <ul style="list-style-type: none">• Manager of the Stem Cell/CRISPR core facility, and member of flow cytometry and microscopy core in Sidra Medicine• IPS derivation and characterization, CRISPR genome editing (Knock Out, Knock-In, activation), pluripotent stem cell single-cell sorting• High dimensional flow cytometry and sorting• Confocal imaging |
| 2013 -
2015 | Staff Scientist
<i>Qatar Cardiovascular research center, Doha, Qatar</i> <ul style="list-style-type: none">• Direct and indirect reprogramming of fibroblasts into cardiomyocytes for tissue regeneration and cardiomyocytes maturation• Manager of the flow cytometry for cell sorting and flow analysis• Modification of valve scaffold for cellular implants |
| 2009 -
2013 | Research associate / Flow core manager
<i>Weill Cornell Medicine, Doha, Qatar</i>
<i>Stem cell and microenvironment laboratory</i> <ul style="list-style-type: none">• Interaction of Hematopoietic stem cells with Mesenchymal and Endothelial cells |

Other skills

University teaching

Teaching experience of various courses for master's degrees in University Paris XI (oncology), Qatar University, and HBKU (stem cells).

Project & Budget Management

Autonomous management of scientific projects with budget management

Laboratory management and student mentoring

Bioinformatics tools:

Flow cytometry software: Diva, FlowJo, Spectroflow, Histogram, FCS express
Graphpad Prism
Vector NTI, Image J, Imaris.
Genomic analysis with Partek, IPA ingenuity suite, David suite...

Language

French – Native

English – Fluent

Spanish – Basic

Other

Associate editor of Journal of translational medicine

Hobbies

Family bike ride

Rugby

Fresh water aquarium keeping

Work History

- Ovarian cancer interaction with its micro-environment
- Derivation of cardiomyocytes from Human Embryonic Stem Cells
- Manager of the flow cytometry core for cell sorting and flow analysis

New York stem cell foundation fellow

2008 - **Postdoctoral Research Associate**

2009 *Institut Cochin, Paris, France*

Dendritic cell antigen presentation laboratory

Study of NK and dendritic cells interaction in the spleen during acute HIV infection

2005 - **PhD Candidate**

2008 *Atomic Energy Center in the Laboratory of Oncology and Radiobiology / Institut Gustave Roussy, Paris, France*

Study of telomeres, telomeric proteins, genomic instability, and DDR response role across multistep carcinogenesis in lung, colon, and breast cancer

2005 - **Research engineer**

2005 *Novartis, Basel, Switzerland*

Molecular biology laboratory.

Vector production for expression in E.Coli, HEK, and Baculovirus: multisite Gateway, In Phusion, Gene Soeing and vector design

Education

2005 - **PhD**

2008 *University of Paris XI, Paris, France*

Oncology and physiology

2003 - **Biotechnology Engineer**

2005 *Polytech Marseille (ESIL), Marseille, France*

Biotechnology, and Applied Microbiology

2004 **University Diploma- Communication**

University of Aix-Marseille II, Marseille, France

2001 - **Master of science**

2003 *University of Aix-Marseille II, Marseille, France*

Cellular biology and physiology, speciality microbiology

Pre-publication

1. **Christophe Michel Raynaud**, Eiman Ibrahim Ahmed, Ayesha Jabeen, et al. *Modulation of SLFN11 induces changes in DNA Damage response.* *bioRxiv* 2023.04.02.535254; doi: <https://doi.org/10.1101/2023.04.02.535254>

Peer-reviewed publications

1. Roelands J., Kuppen P. J.K., Ahmed E.I., Mall R., Masoodi T., Singh P, Monaco G, **Raynaud C.**, et al. Integrated tumor, immune and microbiome atlas of colon cancer. *Nature Medicine* (2023). doi: 10.1038/s41591-023-02324-5
2. Sherif, S.; Roelands, J.; Mifsud, W.; Ahmed, E.I.; **Raynaud, C.M.**; et al. The immune landscape of solid pediatric tumors. *Journal of experimental & clinical cancer research* : CR 2022, 41, 199, doi:10.1186/s13046-022-02397-z
3. Gabriel, M.; Bollensdorff, C.; **Raynaud, C.M.** Surface Modification of Polytetrafluoroethylene and Polycaprolactone Promoting Cell-Selective Adhesion and Growth of Valvular Interstitial Cells. *Journal of functional biomaterials* 2022, 13, doi:10.3390/jfb13020070
4. S C Voss, M Yassin, J C Grivel, S Al Hmissi, N Allahverdi, A Nashwan, Z Merenkov, M Abdulla, A Al Malki, **C Raynaud**, et al. (2021). Red blood cell derived extracellular vesicles during the process of autologous blood doping. *Drug test Anal*: 34453778.
5. Hubrack, S., M. A. Al-Nesf, N. Agrebi, **C. Raynaud**, et al. (2021). "In vitro Interleukin-7 treatment partially rescues MAIT cell dysfunction caused by SARS-CoV-2 infection." *Sci Rep* 11(1): 14090
6. M. Gabriel, C. Bollensdorff and **C.M. Raynaud**, Manipulation of cellular behaviour on surface-modified polyvinylidene difluoride using wet chemistry. *Biomed. Phys. Eng. Express* 6 065006
7. M. Elnaggar, A. Al-Mohannadi, D. Kizhakayil, **C.M. Raynaud**, et al., Flow-Cytometry Platform for Intracellular Detection of FVIII in Blood Cells: A New Tool to Assess Gene Therapy Efficiency for Hemophilia A, *Molecular therapy. Methods & clinical development* 17 (2020) 1-12.
8. Gabriel, M., D. Strand, C.F. Vahl and **C.M. Raynaud** (2018). "Conjugation of peptides and PEG onto PMMA surfaces via mild aminolysis reaction." *Biomater Med Appl* 3(1): 10.4172/2577-0268.1000122
9. Abou-Saleh, H., F. A. Zouein, A. El-Yazbi, D. Sanoudou, **C. Raynaud**, C. Rao, G. Pintus, H. Dehaini and A. H. Eid (2018). "The march of pluripotent stem cells in cardiovascular regenerative medicine." *Stem Cell Res Ther* 9(1): 201.
10. Voss, S. C., M. Jaganjac, A. M. Al-Thani, J. C. Grivel, **C. Raynaud**, H. Al-Jaber, A. S. Al-Menhali, Z. A. Merenkov, M. Alsayrafi, A. Latiff and C. Georgakopoulos (2017). "Analysis of RBC-Microparticles in stored whole blood bags - a promising marker to detect blood doping in sports?" *Drug Test Anal* 9(11-12): 1794-1798.
11. Idil Aigha, **C. M. Raynaud**. (2016). "Maturation of pluripotent stem cell derived cardiomyocytes: The new challenge." *global cardiology science & practice* 2016(1): 14.
12. Liberski, A. R., **C. M. Raynaud**, N. Ayad, D. Wojciechowska and A. Sathappan (2016). "Valve Tissue Engineering with Living Absorbable Threads." *Macromol Biosci* 17(5).
13. Gabriel, M., K. Niederer, M. Becker, **C. M. Raynaud**, C. F. Vahl and H. Frey (2016). "Tailoring Novel PTFE Surface Properties: Promoting Cell Adhesion and Antifouling Properties via a Wet Chemical Approach." *Bioconjug Chem* 27(5): 1216-1221.
14. **Raynaud C.M.**, Faizzan Syed Ahmad, Mona Allouba, Haissam Abou-Saleh, Kathy O. Lui, Magdi Yacoub. Reprogramming for cardiac regeneration. *Glob Cardiol Sci Pract.* 2014 Oct 1;2014(3)
15. **Raynaud C.M.**, Yacoub MH. Clinical trials of bone marrow derived cells for ischemic heart failure. Time to move on? *TIME, SWISS-AMI, CELLWAVE, POSEIDON and C-CURE.* *Glob Cardiol Sci Pract.* 2013 Nov 1;2013(3):207-11. doi: 10.5339/gcsp.2013.28. eCollection 2013. No abstract available. PMID:24689022
16. **Raynaud, C.M.**, et al., Endothelial cells provide a niche for placental hematopoietic stem/progenitor cell expansion through broad transcriptomic modification. *Stem Cell Research*, 2013. 11(3): p. 1074-1090.

Publications

17. **Raynaud, C.M.** and A. Rafii, The Necessity of a Systematic Approach for the Use of MSCs in the Clinical Setting. *Stem Cells Int*, 2013. 2013: p. 892340.
18. Liberski AR, Al-Noubi MN, Rahman ZH, Halabi NM, Dib SS, Al-Mismar R, Billing AM, Krishnankutty R, Ahmad FS, **Raynaud CM**, Rafii A, Engholm-Keller K, Graumann J. Adaptation of a commonly used, chemically defined medium for human embryonic stem cells to stable isotope labeling with amino acids in cell culture. *J Proteome Res*, 2013. 12(7): p. 3233-45.
19. **Raynaud CM**, Halabi N, Elliott DA, Pasquier J, Elefanty AG, Stanley EG, Rafii A. Human embryonic stem cell derived mesenchymal progenitors express cardiac markers but do not form contractile cardiomyocytes. *PLoS One*. 2013;8(1):e54524. doi: 10.1371/journal.pone.0054524. Epub 2013 Jan 16. PMID:23342164
20. **Raynaud CM**, Maleki M., Lis R., Ahmed B., Al-Azwani I., Malek J., Safadi F. and Rafii A. Comprehensive characterization of Mesenchymal stem cells from human placenta and fetal membrane. *Stem Cells Int*. 2012;2012:658356. Epub 2012 Jun 4.
21. Malek JA, Martinez A, Mery E, Ferron G, Huang R, **Raynaud C**, Jouve E, Thiery JP, Querleu D, Rafii A. Gene expression analysis of matched ovarian primary tumors and peritoneal metastasis. *J Transl Med*. 2012 Jun 11;10(1):121.
22. Touboul C, Lis R, Al Farsi H, **Raynaud CM**, Warfa M, Althawadi H, Mery E, Mirshahi M, Rafii A. Mesenchymal stem cells enhance ovarian cancer cell infiltration through IL6 secretion in an amniochorionic membrane based 3D model. *J Transl Med*. 2013 Jan 31;11:28. doi: 10.1186/1479-5876-11-28. PMID:23369187
23. Lis R.; Touboul C.; **Raynaud CM.**; Malek J; Suhre K.; Mirshahi M.; Rafii A. Mesenchymal cell interaction with ovarian cancer cells triggers pro-metastatic properties. *Plos One*. 2012;7(5):e38340. Epub 2012 May 30.
24. Lis R, Touboul C, Mirshahi P, Ali F, Mathew S, Nolan DJ, Maleki TM, Abdalla SA, **Raynaud CM**, Querleu D, Al-Azwani E, Malek J, Mirshahi M, Rafii A. Tumor associated mesenchymal stem cells protects ovarian cancer cells from hyperthermia through CXCL12. *Int J Cancer*. Aug 2010 E pub ahead of print
25. Lantuejoul S, **Raynaud C**, Salameire D, Gazzeri S, Moro-Sibilot D, Soria JC, et al. Telomere maintenance and DNA damage responses during lung carcinogenesis. *Clin Cancer Res*. 2010 Jun 1 ;16(11):2979-88.
26. **Raynaud CM**, Mercier O, Darteville P, Commo F, Olaussen KA, de Montpreville V, et al. Expression of chemokine receptor CCR6 as a molecular determinant of adrenal metastatic relapse in patients with primary lung cancer. *Clin Lung Cancer*. 2010 May;11 (3):187-91.
27. **Raynaud CM**, Mercier O, Commo F, Darteville P, Gomez-Roca C, de Montpreville V, et al. Telomere length, telomeric proteins and DNA damage repair proteins are differentially expressed between primary lung tumors and their adrenal metastases. *Lung Cancer*. 2009 Aug;65(2):144-9. York stem cell foundation fellow
28. **Raynaud CM**, Hernandez J, Llorca FP, Nuciforo P, Mathieu MC, Commo F, et al. DNA damage repair and telomere length in normal breast, preneoplastic lesions, and invasive cancer. *Am J Clin Oncol*. 2009 Oct 30.
29. Gomez-Roca C, **Raynaud CM**, Penault-Llorca F, Mercier O, Commo F, Morat L, et al. Differential expression of biomarkers in primary non-small cell lung cancer and metastatic sites. *J Thorac Oncol*. 2009 Oct;4(10):1212-20.
30. **Raynaud CM**, Sabatier L, Philipot O, Olaussen KA, Soria JC. Telomere length, telomeric proteins and genomic instability during the multistep carcinogenic process. *Crit Rev Oncol Hematol*. 2008 May;66(2):99-117.
31. **Raynaud CM**, Jang SJ, Nuciforo P, Lantuejoul S, Brambilla E, Mounier N, et al. Telomere shortening is correlated with the DNA damage response and telomeric protein down-regulation in colorectal preneoplastic lesions. *Ann Oncol*. 2008 Nov;19(11):1875-81.
32. Ayouaz A, **Raynaud C**, Heride C, Revaud D, Sabatier L. Telomeres: hallmarks of radiosensitivity. *Biochimie*. 2008 Jan;90(1):60-72.

References

Dr. Wouter Hendrickx

Principal Investigator

Sidra Medicine

Email: wouterhendrickx79@gmail.com

Phone: +974 66307877

Dr. Davide Bedognetti

Director Translational Medicine

Sidra Medicine

Email: davidebedognetti@gmail.com

Phone: +974 74782879

Dr. William Misfud

Attending physician

Sidra Medicine

Email: wmifsud@sidra.org

Phone: +974 70488512

Dr. Christian Bollensdorff

Principal Investigator

Qatar Cardiovascular Research Center

Email: Christian@bollensdorff.de

Phone: +41 779421465

Dr. Arash Rafii

Principal Investigator

Weill Cornell Medicine in Qatar

Email: rafii.arash@gmail.com

Phone: +974 3313 5828

Dr. Anne Hosmalin

Principal Investigator

Institut Cochin

Email: anne.hosmalin@inserm.fr

Phone: +33 63066 8192

Dr. Jean-Charles Soria

SVP & Amgen's Oncology

Therapeutic Area Head

Email: soriajeancharles@gmail.com

Phone: +33 14211 4291