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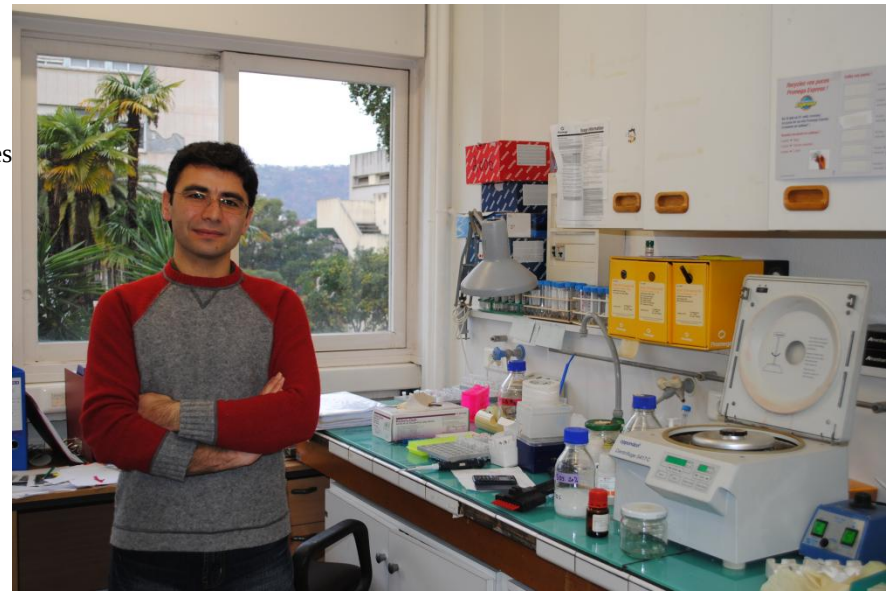

Areas of Research

RNA-mediated Cell Reprogramming, Directed Stem Cell Differentiation, Noncoding RNA, Epigenetic and Familial Disease

Our research aims to understand the role of non-coding RNAs (ncRNAs) in cell reprogramming, establishing the distinct epigenetic states of adult and embryonic stem cells and the misregulation of ncRNAs in diseases such as cancer, diabetes and obesity. To further explore how ncRNAs may define and or drive cell fate decisions in normal development and disease we developed a new RNA injection method.

We are also interested in generating induced pluripotent stem cells (iPSC) from Iranian patients with rare genetic diseases for in vitro disease modeling and genome editing.

Ongoing projects

1- **The functional roles of non-coding RNAs in cell-fate programming and reprogramming.**
2- **The functional roles of non-coding RNAs in cancer therapy.**
3- **The involvement of microRNAs in obesity and type 2 diabetes.**

EDUCATIOIN

- Postdoc: Université de Nice Sophia Antipolis, Inserm U1091, Nice, FRANCE, 5/2010-3/2011. Project: RNA-directed epigenetic controls in pluripotent stem cells.

- PhD: Molecular Cell Biology, Université de Nice Sophia Antipolis, Inserm U1091, Nice, FRANCE, 2006-2010. PhD thesis: RNA-directed epigenetic controls from Mice to ES cells: induction cardiac hypertrophy.

- MSC: Medical Biotechnology, Tarbiat Modares University, Tehran, IRAN, 2001- 2003: Master thesis: The expression of Human Granulocyte Macrophage Colony Stimulating Factor by Heat-induction in *Escherichia coli.*

HONOR

- Iranian ministry of health and medical education fellowship for 4 years in Inserm U1091, Nice, FRANCE.

- Top educator in Shahid Beheshti University of medical sciences, 2012

PUBLICATIONS

- **Ghanbarian H**., Wagner K.D., Wagner N., Cuzin F., Rassoulzadegan M. (2017). "RNA-directed epigenetic programming of embryonic stem cell cardiac differentiation." **Scientific Reports**,7

- Mozhgan Abasi, Fatemeh Kohram, Parviz Fallah, Arash Arashkia, Masoud Soleimani, Nosratollah Zarghami[1]*, **Hossein Ghanbarian*. (2017).** "**Differential maturation of miR-17~92 cluster members in human cancer cell lines**" **Applied Biochemistry and Biotechnology,**1-8

- Zahra Shokati Eshkiki, Mohammad Hossein Ghahremani, Parisa Shabani, Sattar Gorgani Firuzjaee, Asie Sadeghi, **Hossein Ghanbarian**, Reza Meshkani (2017)**.** " Protein tyrosine phosphatase 1B (PTP1B) is required for cardiac lineage differentiation of mouse embryonic stem cells" **Molecular and cellular biochemistry** ,425 (1-2), 95-102

- M. Daneshpour, K. Omidfar, **H. Ghanbarian***. (2016)**.** " A novel electrochemical nanobiosensor for the ultrasensitive and specific detection of femtomolar-level gastric cancer biomarker miRNA-106a" **Beilstein Journal of Nanotechnology**, 7 (1), 2023-2036

- **Ghanbarian H.,** Wagner N., Baudouy D., Kiani J., Michiels J.F.,Cuzin F., Rassoulzadegan M., Wagner K.D. (2016). " Dnmt2/Trdmt1 as Mediator of RNA Polymerase II Transcriptional Activity in Cardiac Growth" **Plos One,** 11 (6), e0156953

- Mozhgan Abasi, Zahra Bazi, Samira Mohammadi-Yeganeh, Masoud Soleimani, Vahid Haghpanah, Nosratollah Zargami, **Hossein Ghanbarian***. (2016)**.** "7SK small nuclear RNA transcription level down-regulates in human tumors and stem cells**.**" **Medical Oncology,** 33 (11), 128

- Somayeh Mohammadi, Mehrangiz Ebrahimi-Mameghani, Seyed Rafie Arefhosseini, Parviz Fallah, Mohammad Asghari Jafarabadi, Sepideh Zununi, Masoud Soleimani, Mehdi Banitalebi Dehkordi, **Hossein Ghanbarian*.** (2016). "Dietary Regulation of miR-33b and miR-29a in Relationship to Metabolic Biomarkers of Glucose and Lipids in Obese Diabetic Women: A Randomized Clinical Controlled Study" **Iranian Red Crescent Medical Journal**, In press

- S. Mohammadi-Yeganeh, M. Paryan, E. Arefian, M. Vasei, **H. Ghanbarian**, R Mahdian, M Karimipoor, M Soleimani. (2016), "MicroRNA-340 inhibits the migration, invasion, and metastasis of breast cancer cells by targeting Wnt pathway" **Tumor Biology**, 1-8

- Gholipourmalekabadi M., Mozafari M., Salehi M., Seifalian A., Bandehpour M., **Ghanbarian H.**, Urbanska A.M., Sameni M., Samadikuchaksaraei A., Seifalian A.M. (2015). "Development of a Cost-Effective and Simple Protocol for Decellularization and Preservation of Human Amniotic Membrane as a Soft Tissue Replacement and Delivery System for Bone Marrow Stromal Cells." **Advanced Healthcare Materials**, 4 (6), 918-926

- M Gholipourmalekabadi, M Bandehpour, M Mozafari, A Hashemi, **H Ghanbarian**, M Sameni, M Salimi, M Gholami, A Samadikuchaksaraei. (2015). "Decellularized human amniotic membrane: more is needed for an efficient dressing for protection of burns against antibiotic-resistant bacteria isolated from burn patients." **Burns**, 41(7), 1488-1497

- Mazaher Gholipourmalekabadi, Masoud Mozafari, Mojgan Bandehpour, Marzieh Sameni, **Hossein Ghanbarian,** (2015). "How ethanol treatment affects the physico-chemical and biological characteristics of silk fibroin nanofibrous scaffolds." **Adv. Mater. Lett.** **6**(5), 391-394

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- Keramati F., Seyedjafari E., Fallah P., Soleimani M., **Ghanbarian H*.**, (2014). "7SK small nuclear RNA inhibits cancer cell proliferation through apoptosis induction." **Tumor Biology** , 36 (4), 2809-2814

- Kiani J., Grandjean V., Liebers R., Tuorto F., **Ghanbarian H.**, Lyko F., Cuzin F. and Rassoulzadegan M. (2013). "RNA–Mediated Epigenetic Heredity Requires the Cytosine Methyltransferase Dnmt2." **Plos Genetics** 9(5): 1-9.

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- Wagner K.D., Wagner N., **Ghanbarian H**., Grandjean V., Gounon P., Cuzin F., et Rassoulzadegan M. (2008). "RNA induction and inheritance of epigenetic cardiac hypertrophy in the mouse." **Dev Cell** **14**(6): 962-9.

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- **Ghanbarian H**, Zomorodipour A, Ataei F, Shojai S, and Yakhchali B. The expression of Human Granulocyte Macrophage Colony Stimulating Factor by Heat-induction in *Escherichia coli*. Journal of Sciences, Islamic Republic of Iran, 15(3): 203-210. 2004.

PATENTS

1. Iranian patent number 30177 on development of recombinant bacteria for expression of human interleukin-2, 2005.

2. Iranian patent number 30178 on development of prokaryotic expression vector for expression of human interleukin-2, 2005.

REFRENCES

- ✓ **Prof. Francois Cuzin**, Inserm U1091, University of Nice, France, Email: francois.cuzin@unice.fr

- ✓ **Dr. Minoo Rassoulzadegan**, Inserm U1091, University of Nice, France, Email: minoo@unice.fr

- ✓ **Dr. Kay-Dietrich Wagner**, Université de Nice - Sophia Antipolis, Faculté de Médecine, Franc kay.wagner@unice.fr