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*Royan  
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## **Education:**

- 1988-92, Biology diploma, Kamal high school, Tehran, Iran
- The entrance exam for public universities, ranking: 15<sup>th</sup> out of > 700K in the country
- 1993-2001, MD, Tehran University of Medical Science (TUMS)
- 2002-2004, National commitment service for general practitioners
- Examination for national PhD scholarship, ranking: 1<sup>st</sup> grade in medical biotech group
- 2008-2013, PhD, Medical biotechnology, Pasteur Institute of Iran and Royan Institute, Department of stem cells and developmental biology, Tehran, Iran,  
Main Supervisor: Prof. Hossein Baharvand
- 2009-2013, Research assistant, Differentiation lab, Royan Institute
- 2010-2013, Department of Regenerative Medicine, Cell therapy center, Coordinator for clinical studies in Gastrointestinal and Liver disorders
- 2011-2013, Cell therapy center, Royan Institute, Lab and QC manager
- 2013-May 2016, Postdoctoral Research Fellow at Karolinska Institute, Cell transplantation and regenerative medicine, Supervisor: Professor Stephen Strom.
- 2014-May 2016 Stem cell lab manager, LABMED department, Karolinska Institute
- 2015 January-March, FELECA-B&C, Laboratory Animal course, Karolinska Institute.
- 2015 April- July, Advanced Regenerative Medicine course, Karolinska Institute, and the Mayo Clinic, US.

- 2015 December- present, assistant professor, Royan institute for stem cell biology and regenerative medicine
- 2015 December- present, Head of liver and Gastrointestin research program, Royan institute for stem cell biology.

## **PhD thesis:**

- Suspension differentiation of hPSCs into Hepatocyte-like cells in stirrer flask and functional characterization.

## **Special interest:**

- Pluripotent stem cells, (iPS & ES cells), Reprogramming of somatic cells, Differentiation to Hepatocytes in 2D and 3D,
- Adult stem cells, potential application in clinic particularly mesenchymal stem cells, MSCs and hematopoietic stem cells, HSCs
- Hepatocyte isolation techniques and culture, QC methods for human primary hepatocytes,
- Liver regeneration, Cellular and Molecular mechanisms,
- Cell-based therapy for metabolic liver diseases,
- GMP methods to produce ATMPs, Advanced Therapy Medicinal Products in regenerative medicine.
- Amnion Epithelial Stem Cells, AESCs, isolation and culture,

## **Publication:**

- What should physicians know regarding cell-based therapies for liver disorders?  
H Baharvand, R Malekzadeh, M Vosough, Archives Iranian Medicine, 2010

- Cell based therapeutics for liver disorders, M Vosough, M Moslem, B Pournasr, H Baharvand, British Medical Bulletin, 2011
- Surveillance for Hepatocellular Carcinoma after Autologous Stem Cell transplantation in Cirrhosis, M Mohamadnejad, M Vosough, R Malekzadeh, Middle East Journal of Digestive Diseases, 2012
- Generation of Functional Hepatocyte-like Cells from Human Pluripotent Stem Cells in a Scalable Culture, M Vosough, H Baharvand, Stem cells and Development, 2013
- Differentiation of human embryonic stem cells to hepatocyte-like cells on a new developed xeno-free extracellular matrix, Z Farzaneh, M Pakzad, M Vosough, B Pournasr, H Baharvand, Histochemistry and cell biology, 2014
- Rapid-and-Sensitive Assessment of Human Hepatocyte Functions, R Gramignoli, V Tahan, K Dorko, R Venkataramanan, IJ Fox, EC Ellis, M Vosough, SC Strom, Cell transplantation, 2014
- Clinical Hepatocyte Transplantation: Practical Limits and Possible Solutions, R. Gramignoli, M Vosough, K Kannisto, R C. Srinivasan, S.C. Strom, European J Surgery, 2015
- Intraportal Infusion of Bone Marrow Mononuclear or CD133+ Cells in Patients with Decompensated Cirrhosis: A Double-Blind Randomized Controlled Trial, M Mohamadnejad M Vosough, S Moossavi, S Nikfam M.D.1,3, S Mardpour M.Sc.2, S Akhlaghpour, M Ashrafi, V Azimian, N Jarughi, S E Hosseini, F Moeinia, M Bagheri, M Sharafkhah, N Aghdami, R Malekzadeh, H Baharvand, Stem cells translational medicine, 2015
- The Use of Induced Pluripotent Stem Cells for the Study and Treatment of Liver Diseases. Hansel MC, Davila JC, Vosough M, Gramignoli R, Skvorak KJ, Dorko K, Marongiu F, Blake W, Strom SC, 2016 Current protocols
- Repeated Intraportal Injection of Mesenchymal Stem Cells in Combination with Pioglitazone in Patients with Compensated Cirrhosis: A Clinical Report of Two Cases. Vosough M, Moossavi S, Mardpour S, Akhlaghpour S, Azimian V, Jarughi N, Hosseini SE, Ashrafi M, Nikfam S, Aghdami N, Malekzadeh R, Mohamadnejad M, Baharvand H. 2016, Archives Iranian medicine
- In vitro Generated Hepatocyte-Like Cells: a Novel Tool in Regenerative Medicine and Drug Discovery. K Zakikhan, B Pournasr, M Vosough, M Nassiri-Asl, The cell journal, 2017

- Three-Dimensional Liver-derived Extracellular Matrix Hydrogel Promotes Liver Organoids Function. M Saheli, M Sepantafar, B Pournasr, Z Farzaneh, M Vosough, A Piryaeei, H Baharvand. 2017, Journal of cellular biochemistry
- Extracellular Vesicles Derived from Human Embryonic Stem Cell-MSCs Ameliorate Cirrhosis in Thioacetamide-Induced Chronic Liver Injury. S Mardpour, S-N Hassani, S Mardpour, F Sayahpour, M Vosough, J Ai, N Aghdami, A-A Hamidieh, H Baharvand. 2017, Journal of cellular physiology
- A Quick update from the Past to Current Status of Human Pluripotent Stem Cell-derived Hepatocyte culture systems. E Zahmatkesh, M Vosough. 2017, Modern Medical Laboratory Journal
- New Platforms For Drug Screening And Toxicology: Necessity Or Need? Z Heydari, M Vosough. 2017, Modern Medical Laboratory Journal
- Efficient and Cost-effective Generation of Hepatocyte-like Cells Through Microparticle-mediated Delivery of Growth Factors in a 3D Culture of Human Pluripotent Stem Cells, Z Heidariyan, M-H Ghanian, M Ashjari, Z Farzaneh, M Najarasl, M Rezaei Larijani, A Piryaeei, M Vosough, H Baharvand. 2018, Biomaterials
- Developing a Cost-Effective and Scalable Production of Human Hepatic Competent Endoderm from Size-Controlled Pluripotent Stem Cell Aggregates, Z Farzaneh, M Najarasl, S Abbasalizadeh, M Vosough, H Baharvand. 2018, Stem cells and development

## Projects:

- Liver organoids in lab, liver chip
- Differentiation therapy for HCC
- Early biomarkers for gastric cancer

## Books

- Simple explanation of stem cells, 2011, Book (in Persian)
- Effective communication skills in scientific communities, 2012, Book (in Persian)
- Principals of Scientific writing, 2013, Book (in Persian)

- Stem cells and regenerative medicine, two chapters, stem cell technology and cell therapy in liver and gut, in press, 2016, Book, in press (in Persian)

## Clinical Trials

- Transplantation of Autologous mesenchymal stem cells in Decompensate Cirrhotic Patients with Pioglitazone. Supervised by: Prof. Malekzadeh, Prof. Baharvand
- Autologous Bone Marrow derived stem cells in Decompensate Cirrhotic Patients, Supervised by: Prof. Baharvand, Prof. Malekzadeh
- Autologous transplantation of bone marrow derived mesenchymal stem cells in patients with refractory fistulizing crohn's disease, Supervised by: Prof. Malekzadeh, Prof. Baharvand

## Presentations

- Direct Differentiation of Suspended Spheroid Form of hiPSCs to Endoderm Progeny” , 2010, Toronto, Canada
- Application of Stem Cells in Liver Disorders, Far or Near, Hype or Hope”, 2011. Mashhad, Iran
- Mass production of HLCs from hiPSCs in stirrer bioreactor and their functional characterization in CCl4 injured mice model, 2012”, Yokohama, Japan
- Suspension differentiation of hiPSCs into Hepatocyte – Like Cells in Stirrer flask and their Functional Characterization”, 2012, Amsterdam, Netherlands
- Generation of Functional Hepatocyte-Like Cells from hPSCs in bioreactor, 2013 Royan International congress, Tehran, Iran
- Efficient reprogramming of centenarian’s somatic cells, personalized medicine in geriatric medicine, 2014, Bologna, Italy

## Honors and grants

- Executive secretary of national symposium, Application of stem cells in Gastroenterology and Hepatology, Tehran, Iran, 16th January 2011
- Travel award for selected abstract in the 17th International Society for Differentiation conference in Amsterdam, the Netherlands
- Featured article and cover page of Stem Cell and Development, Vol. 20/22.2013
- Fellowship program in EU-funded research project, HUMAN - health and the understanding of metabolism, aging and nutrition, October 2013 – present
- Scientific chair of 12<sup>th</sup> Royan international congress in stem cell biology and technology, September 2016, Tehran
- National grant from Pars-Isotope for new radioisotope in HCC treatment
- National grant from Cancer institute for differentiation therapy in HCC

## References

- Hossein Baharvand, PhD Professor of Stem cell Biology, Royan Institute, Tehran, IRAN,  
Baharvand@RoyanInstitute.org
- Stephen Strom, PhD Professor of Cell Transplantation and Regenerative Medicine Karolinska University Hospital, Huddinge, Stockholm, Sweden  
Stephen.Strom@ki.se
- Andreas Nussler, PhD Professor of Biology, Tübingen Medical University, BG Clinic, Tübingen, Germany  
Andreas.Nussler@med.uni-tuebingen.de