

Massoud Vosough, MD, PhD

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➤ Associate Professor of Medicine, since September 2022
Cell Therapy Center, Royan Institute for Stem Cell Biology and Regenerative Medicine,

➤ Head of Regenerative Medicine Department, since June 2019
Royan Institute for Stem Cell Biology and Regenerative Medicine,

➤ Chairman, National Board in Applied Cell Science, since October 2023
Ministry of Health and Medical Education, Medical Basic Science Secretary,

➤ Senior Associated Researcher, since September, 2013
Experimental Cancer Medicine, Institution for Laboratory Medicine, Karolinska Institute, Stockholm, Sweden

➤ Visiting Professor since January 2019
Institute Regenerative Medicine, Moscow Medical University, Russia

➤ International Course Organizer since March 2020
Principles of Regenerative Medicine, Soft Skills such as, Time management, Communication and Teaching Skills, etc. in Russia, Sweden, Germany, Indonesia,

➤ Visiting Professor since January 2024
Maranatha Christian University, Faculty of Medicine, Bandung, Indonesia

➤ Adjunct Professor since January 2025
Tehran University of Medical Sciences, School of advanced technologies, Biotech Dept.

➤ Member of National Medical Council, Since 2001
Tehran University of Medical Science, member of Alumni club

Education:

- 2013-2016, Postdoctoral Research Fellow I & II, “Cell Transplantation and Regenerative Medicine”, Supervisor: Prof. Stephen Strom; Karolinska Institute, Stockholm, Sweden,
- 2008-2013, Joint PhD Program, Pasteur Institute, and Department of Stem Cells and Regenerative Medicine, Royan institute, Tehran, Iran,
- 1993-2001, Fully funded MD program, School of Medicine, Tehran University of Medical Science (TUMS),

Workshops Organized:

- 2025 May; How to develop your ATMP? Moscow, Russia
- 2018-2019, GLP, GMP, GCP courses, Tehran University of Medical Sciences
- 2016-2017; Instructor for “CBRM Fellowship Program” Royan Institute, Iran.

Workshops:

- 2015 April-July, Advanced Regenerative Medicine Course, joint program, Karolinska Institute, Stockholm, Sweden; Mayo Clinic, Rochester, USA.
- 2015 January-March, Advanced and Practical Laboratory Animal Courses, FELECA- B & C, Karolinska Institute, Stockholm, Sweden.

Professional activities:

- 2016-Present, Course organizer for Master and PhD students in regenerative Medicine, Royan Institute, Tehran University, TUMS, and SBUM,
- 2016-Present, Supervising national and international Master and PhD students,

- 2016-2025, Deputy of Quality and Regulatory affairs manager, Cell Tech Pharmed Company,
- 2011-2013, Cell therapy center, Royan Institute, Lab facility and QC manager
- 2009-Present, Project Supervisor, Clinical studies in Gastrointestinal and Liver disorders, Regenerative Medicine Department, Cell Therapy Center, Royan Institute.
- 2016-Present, "Differentiation Therapy Program in Cancer", (**DTPC**); Royan Institute for Stem Cell Biology and Regenerative Medicine

Professional interests:

- Liver Regenerative Medicine; Application of Bio-engineered Liver Organoids in Drug Screening/Disease Modeling, and Toxicology.
- Innovative Stem/Progenitor Cell-Based Therapies in Liver Fibrosis/Cirrhosis; Clinical studies
- "Differentiation Therapy" approach in GI & Liver Cancers, Using Advanced Molecular/targeted-based Approaches.
- Regenerative Medicine in IBDs, (UC & CD), PSC-IBD and Refractory Crohn's Disease.
- Biology of Pluripotent stem cells (iPSCs & ESCs), Reprogramming of somatic cells, Differentiation to Hepatocytes in 2D and 3D, Scale-up production of ATMPs.

Recent and Featured Publications:

1. Mitochondrial dysfunction in hepatocellular carcinoma: from metabolism to targeted therapies, Faezeh Sharafi, Elham Rismani, Mohamad Rhmanian, Arezoo Khosravi, Ali Zarrabi, **Massoud Vosough**, 2025/8; Molecular and Cellular Biochemistry

2. Cancer stem cell enrichment in in vitro models: Techniques, insights, and applications, Fazeleh Ranjbar, Maryam Barisam, Arezoo Khosravi, Navid Kashani, Ali Zarrabi, **Massoud Vosough**; 2025/11, Cancer Letters
3. M2 Macrophages-Based Immunotherapy: A New Therapeutic Approach in Liver Fibrosis; Wahyu Widowati, Adilah Hafizha Nur Sabrina, Annisa Firdaus Sutendi, Teresa Liliana Wargasetia, Elham Rismani, **Massoud Vosough**; 2025/6; Advanced Pharmaceutical Bulletin
4. Revisiting Treatment Strategies: Addressing Epithelial-to-Mesenchymal Transition-Induced Resistance in Hepatocellular Carcinoma, Roghayeh Naserkhaki, Yaser Tahamtani, Arezoo Khosravi, Siavash Iravani, Ali Zarrabi, **Massoud Vosough**, 2025/6/24; BME frontiers
5. Functional Liver Cell-Based Platforms in Biomedical Research; Zohreh Hashemian, Sara Taleahmad, Bahare Shokouhian, Mustapha Najimi, **Massoud Vosough**, 2025/6, Pharmacology Research & Perspectives
6. Turmerone-loaded nanocarriers effectively induced apoptosis and attenuated cancerous phenotype in *in vitro* and *in vivo* HCC models; Roghayeh Naserkhaki, Alireza Fotouhi, Abbas Piryaee, Yaser Tahamtani, **Massoud Vosough**; 2025/5/27; Colloids and Surfaces B: Biointerfaces
7. Role of mitogens in normal and pathological liver regeneration; **Massoud Vosough**, Bahare Shokouhian, Zahra Heidari, Homeyra Seydi, Moustapha Hassan, Mustapha Najimi; 2025; Hepatology Communications
8. Mechanobiological Reprogramming in Liver Cancer: Conjugated Linoleic Acid Disrupts EMT and Cytoskeletal Dynamics, Ibrahim Ghoytasi, Mohammad Kazemi, Abbas Piryaee, Ali Zarrabi, **Massoud Vosough**, 2025; Colloids and Surfaces A: Physicochemical and Engineering Aspects
9. Targeting glypican 3 by Immunotoxins; the promise of immunotherapy in hepatocellular carcinoma, Rismani, Moustapha Hassan, Elahe Shams, Mustapha Najimi, **Massoud Vosough**, 2025/2/24, Expert Opinion on Therapeutic Targets
10. Standard Protocols for Characterising Primary and In Vitro-Generated Human Hepatocytes, Zahra Heydari, Roberto Gramignoli, Andreas Nussler, Dagmara Szkolnicka, Mustapha Najimi, David C Hay, **Massoud Vosough**, 2025/2, Journal of Cellular and Molecular Medicine

11. c-FLIP/Ku70 complex; A potential molecular target for apoptosis induction in hepatocellular carcinoma, Yasamin Haghir-Sharif-Zamini, Ali Zarrabi, **Massoud Vosough**, 2025/1/14, Archives of Biochemistry and Biophysics
12. GPC-3 in Hepatocellular Carcinoma; A Novel Biomarker and Molecular Target, Mobina Fathi, Kimia Vakili, Moustapha Hassan, Elham Rismani, **Massoud Vosough**, 2024/12/24, Experimental Cell Research
13. Novel biomarkers for monitoring and management of hepatocellular carcinoma, Roya Solhi, Ali Zarrabi, Moustapha Hassan, Hamed Mirzaei, **Massoud Vosough**, 2024/12/24, Cancer Cell International
14. AI-Based solutions for current challenges in regenerative medicine, Pedram Asadi Sarabi, Mahshid Shabanpouremam, Amir Reza Eghtedari, Mahsa Barat, Behzad Moshiri, Ali Zarrabi, **Massoud Vosough**, 2024/10/24; European Journal of Pharmacology
15. MiR-29a-laden extracellular vesicles efficiently induced apoptosis through autophagy blockage in HCC cells, Homeyra Seydi, Kosar Nouri, Bahare Shokouhian, Ali Zarrabi, Faezeh Shekari, **Massoud Vosough**, 2024/10/1; European Journal of Pharmaceutics and Biopharmaceutics
16. Fibrotic liver extracellular matrix induces cancerous phenotype in biomimetic micro-tissues of hepatocellular carcinoma model, Kosar Nouri, Abbas Piryaee, Homeyra Seydi, Mustapha Najimi, **Massoud Vosough**, 2024/9/7, Hepatobiliary & Pancreatic Diseases International
17. Wharton's Jelly mesenchymal stem cell-derived extracellular vesicles induce liver fibrosis-resolving phenotype in alternatively activated macrophages, Shukoofeh Torabi, Faezeh Shekari, Roberto Gramignoli, Mustapha Najimi, **Massoud Vosough**, 2024/9; Journal of Cellular and Molecular Medicine
18. Establishment of a human 3D in vitro liver-bone model as a potential system for drug toxicity screening, Guanqiao Chen, Sabrina Ehnert, Fabian Springer, **Massoud Vosough**, Ashok Kumar, Andreas K Nüssler, Romina Aspera-Werz; 2024/11/6, Archives of Toxicology
19. Immune regulation and therapeutic application of T regulatory cells in liver diseases; Ananya Ajith, Makram Merimi, Mandana Kazem Arki, Nikoo

Hosseini-Khannazer, Mehdi Najari, **Massoud Vosough**, Etienne Marc Sokal, Mustapha Najimi; 2024/3/20; *Frontiers in Immunology*

20. Bioengineering scalable and drug-responsive in vitro human multicellular non-alcoholic fatty liver disease microtissues encapsulated in the liver extracellular matrix-derived hydrogel; Negar Asadollahi, Mohammad Hajari, Mahmoud Alipour, Mohammad Ajoudanian, **Massoud Vosough**, Abbas Piryaee; 2024/3/25; *EXCLI journal*
21. Bioengineering vascularized liver tissue for biomedical research and application; Parsa Davoodi, Moustapha Hassan, David Hay, **Massoud Vosough**; 2024/2/3; *Scandinavian Journal of Gastroenterology*
22. Immunomodulatory performance of GMP-compliant, clinical-grade mesenchymal stromal cells from four different sources; Mandana Arki, Nikoo Hosseini-Khannazer, **Massoud Vosough**; 2024/1/19; *Heliyon*
23. XBP1 as a novel molecular target to attenuate drug resistance in hepatocellular carcinoma, Zahra Hendi, Pedram Asadi Sarabi, David Hay, **Massoud Vosough**, 2023/12/13, *Expert Opinion on Therapeutic Targets*
24. Enhanced intracellular accumulation and cytotoxicity of bortezomib against liver cancer cells using N-stearyl lactobionamide surface modified solid lipid nanoparticles, Farid Mostafaei, Shukoofeh Torabi, Behzad Baradaran, **Massoud Vosough**, Parvin Zakeri-Milani; 2023/11/23; *International Journal of Pharmaceutics*
25. Autophagy orchestrates resistance in hepatocellular carcinoma cells, Homeyra Seydi, Kosar Nouri, Niloufar Rezaei, Atena Tamimi, Moustapha Hassan, Hamed Mirzaei, **Massoud Vosough**, 2023/5/1, *Biomedicine & Pharmacotherapy*
26. Co-delivery of doxorubicin and paclitaxel via noisome nanocarriers attenuates cancerous phenotypes in gastric cancer cells, Niloufar Rezaei, Nikoo Hosseini-Khannazer, **Massoud Vosough**; 2023/7/1, *European Journal of Pharmaceutics and Biopharmaceutics*
27. Epigallocatechin-3-gallate induced apoptosis by dissociation of c-FLIP/Ku70 complex in gastric cancer cells, Mahtab Shahriari Felordi, Mehdi Alikhani, Hamidreza Aboulkheyr, Abbas Piryaee, Mustapha Najimi, **Massoud Vosough**; 2023/9; *Journal of Cellular and Molecular Medicine*

28. Immunotherapeutic approaches in Hepatocellular carcinoma: Building blocks of hope in near future, Neda Minaei, **Massoud Vosough**, 2022/12/17; *European Journal of Cell Biology*
29. HNF4 α is Possibly the Missing Link between Epithelial-Mesenchymal Transition and Warburg Effect during Hepatocarcinogenesis; Bahare Shokouhian, **Massoud Vosough**; 2022/12/7, *Cancer Science*
30. Mimicking the liver function in micro-patterned units: Challenges and perspectives in 3D-Bioprinting; Zahra Heydari, **Massoud Vosough**; 2022/4/26; *Bioprinting*
31. In vitro modeling of liver fibrosis in 3D microtissues using scalable micropatterning system; Ensieh Zahmatkesh, **Massoud Vosough**, Andreas Nussler; 2022/4/2; *Archives of Toxicology*
32. Natural Scaffolds Used for Liver Regeneration: A Narrative Update; Masoud Vazirzadeh, **Massoud Vosough**, Kamran Ghaedi; 2022/3/23; *Stem Cell Reviews and Reports*
33. Extraembryonic Mesenchymal Stromal/Stem Cells in Liver Diseases: A Critical Revision of Promising Advanced Therapy Medicinal Products; Mohammad Amin Shahrbafe, **Massoud Vosough**; 2022/3/23; *Cells*
34. Mesenchymal stromal cell therapy improves refractory perianal fistula in Crohn's disease: case series clinical interventional study; **Massoud Vosough**, Mehdi Mohamadnejad; 2022/2; *Cell Journal*
35. PSC associated inflammatory bowel disease: A distinct entity; Alireza Beheshti-Maal, **Massoud Vosough**; 2022/2/1; *Expert Review of Gastroenterology & Hepatology*
36. Hepatic stellate cell activation by TGF β induces hedgehog signaling and endoplasmic reticulum stress simultaneously; Roya Solhi, **Massoud Vosough**; 2022/1/18; *Toxicology in Vitro*
37. Rhenium Perrhenate (188ReO₄) Induced Apoptosis and Reduced Cancerous Phenotype in Liver Cancer Cells; Samieh Asadian,, **Massoud Vosough**; 2022/1; *Cells*

38. The role of non-coding RNAs in chemotherapy for gastrointestinal cancers; Fatemeh Dashti, **Massoud Vosough**, Neda Rahimian, Michael R Hamblin, Hamed Mirzaei; 2021/12/3; *Molecular Therapy-Nucleic Acids*
39. Autophagy and gastrointestinal cancers: the behind the scenes role of long non-coding RNAs in initiation, progression, and treatment resistance; Rana Shafabakhsh, **Massoud Vosough**, Hamed Mirzaei; 2021/12; *Cancer Gene Therapy*
40. Advanced therapeutic modalities in hepatocellular carcinoma: Novel insights; Bahare Shokoohian, **Massoud Vosough**; 2021/9; *Journal of cellular and molecular medicine*
41. Metabolic hallmarks of liver regeneration; Roya Solhi, **Massoud Vosough**; 2021/9/1; *Trends in Endocrinology & Metabolism*
42. Tissue-specific microparticles improve organoid microenvironment for efficient maturation of pluripotent stem-cell-derived hepatocytes; Ensieh Zahmatkesh, **Massoud Vosough**; 2021/6; *Cells*
43. Evolution of organoid technology: Lessons learnt in Co-Culture systems from developmental biology; Ensieh Zahmatkesh, **Massoud Vosough**; 2021/7/1; *Developmental Biology*

Honors, Awards, and Grants

- 2025 August 14-17, Invited speaker and chairman, IUIS 2025, Vienna, Austria.
- 2025 May 3-4, Scientific chairman of the 4th WANA international congress in Regenerative Medicine, Kish island.
- 2021-2025, Supervisor, Joint international PhD program, Royan Institute and KU Leuven, Belgium
- 2024, Featured article and the cover page of *Cell Journal*
- July 2023; The 1st market authorization record for the ATMP-based commercial products in Iran,
- 2023, Featured article and the cover page of *Journal of Molecular Medicine*
- 2022, Featured article and the cover page of *Cell Journal*

- 2021, Featured article and the cover page of *Trends in Endocrinology & Metabolism*
- 2021, Featured article and the cover page of *Bio-Design and Manufacturing*
- 2021, International grant, Iran-Russia joint research program,
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- 2020, Featured article and the cover page of *Journal of Molecular Medicine*
- 2020, International grant, DAAD, NIMAD, Germany-Iran exchange program
- 2019, National grant from Academy of Science,
- 2018, National grant from Cancer foundation charity,
- 2017, National grant from Cancer institute for differentiation therapy in HCC
- 2016, National grant from Pars-Isotope for new radioisotope in HCC treatment
- 2016, Scientific chairman of the 12th Royan international congress in stem cell biology and technology, Tehran
- 2013-2016 Fellowship program in EU-funded research project, HUMAN - health and the understanding of metabolism, aging and nutrition,
- 2013, Featured article and cover page of *Stem Cell and Development*,
- 2012, Awarded for the best abstract in the 17th International Society for Differentiation conference in Amsterdam, the Netherlands,
- 2008, National Full-Funded PhD scholarship, Iranian MOH