

Massoud Vosough, MD, PhD

(ORCID: 0000-0001-5924-4366, Scopus ID: 52718546104)



Email: Massoud.Vosough@ki.se , Massoud.Vosough@gmail.com |



Phone: +98-21-22518388



Post box: 19395-4644, Tehran, Iran



[Scholar Google](#)



[LinkedIn](#)



[R^G Researchgate](#)

- 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, Basic Science Secretary,
- Adjunct Professor, TUMS since January 2025
Tehran University of Medical Sciences, School of advanced technologies, Biotech Dept.
- Senior Associated Researcher, since September, 2013
Experimental Cancer Medicine, Laboratory Medicine Dept., Karolinska Institute, Sweden
- Editor-in-Chief, *Cell Journal*, Since February 2026
Royan Institute for Stem Cell Biology and Regenerative Medicine, Tehran, Iran
- Visiting Professor since January 2019
Institute Regenerative Medicine, Moscow Medical University, Russia
- Visiting Professor since January 2024
Maranatha Christian University, Faculty of Medicine, Bandung, Indonesia
- International Course Organizer since March 2020
Principles of Regenerative Medicine, Soft Skills (Time management, Business Correspondence, Communication and Teaching Skills, etc.) in Russia, Sweden, Germany, Indonesia,

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

✚ Education:

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

✚ Courses:

- 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.

✚ Workshops:

- 2025 August, Future Direction and Opportunities in Stem Cell Innovation for Clinical Application and the Health Industry: Keeping Up with Emerging Trends, Future Research Direction, and Further Potentials, Indonesia
- 2025 May; How to develop your ATMPs? IRM, Moscow, Russia
- 2018-2019, GLP, GMP, GCP courses, Tehran University of Medical Sciences, Tehran, Iran

- 2016-2017; Instructor for “CBRM Fellowship Program” Royan Institute, Iran.

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-Present, “Differentiation Therapy Program in Cancer”, Royan Institute for Stem Cell Biology and Regenerative Medicine
- 2016-2025, Deputy of Quality and Regulatory affairs manager, Cell Tech Pharmed Company, Tehran, Iran
- 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.

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.

Featured Publications:

1. Standard Methods for Quality Control in Cell-Based Medicinal Products and their Validation for Clinical Applications. E Mahmoodi, A Samadian, E Hajizadeh-Saffar, **M Vosough**. *Advanced Biomedical Research*. **2026**
2. Cord-blood-PRP attenuates fibrogenic features of TGF β -activated hepatic stellate cells in in vitro and animal models. M Tavaf, S Abroun, A Piryaei, A Zarrabi, **M Vosough**. *Bioorganic Chemistry*. **2026**
3. Liver-on-a-Chip: Searching for a Balance Between Biomimetics and Functionality. A Murashko, D Golubchikov, O Smirnova, A Nesterova, **M Vosough**, A Shpichka, P Timashev. *Biosensors*. **2026**
4. Mitochondrial dysfunction in hepatocellular carcinoma: from metabolism to targeted therapies. F Sharafi, E Rismani, M Rhmanian, A Khosravi, A Zarrabi, **M Vosough**. *Molecular and Cellular Biochemistry*. **2025**.
5. Cancer stem cell enrichment in in vitro models: Techniques, insights, and applications. F Ranjbar, M Barisam, A Khosravi, N Kashani, A Zarrabi, **M Vosough**. *Cancer Letters*. **2025**.
6. M2 Macrophages-Based Immunotherapy: A New Therapeutic Approach in Liver Fibrosis. W Widowati, A Hafizha Nur Sabrina, A Firdaus Sutendi, T Liliana Wargasetia, E Rismani, **M Vosough**. *Advanced Pharmaceutical Bulletin*. **2025**.
7. Revisiting Treatment Strategies: Addressing Epithelial-to-Mesenchymal Transition-Induced Resistance in Hepatocellular Carcinoma. R Naserkhaki, Y Tahamtani, A Khosravi, S Iravani, A Zarrabi, **M Vosough**. *BME frontiers*. **2025**.
8. Functional Liver Cell-Based Platforms in Biomedical Research. Z Hashemian, S Taleahmad, B Shokouhian, M Najimi, **M Vosough**. *Pharmacology Research & Perspectives*. **2025**.
9. Turmerone-loaded nanocarriers effectively induced apoptosis and attenuated cancerous phenotype in *in vitro* and *in vivo* HCC models. R

Naserkhaki, A Fotouhi, A Piryaeei, Y Tahamtani, **M Vosough**. *Colloids and Surfaces B: Biointerfaces*. **2025**.

10. Role of mitogens in normal and pathological liver regeneration. **M Vosough**, B Shokouhian, Z Heidari, H Seydi, M Hassan, M Najimi. *Hepatology Communications*. **2025**.
11. Mechanobiological Reprogramming in Liver Cancer: Conjugated Linoleic Acid Disrupts EMT and Cytoskeletal Dynamics. I Ghoytasi, M Kazemi, A Piryaeei, A Zarrabi, **M Vosough**. *Colloids and Surfaces A: Physicochemical and Engineering Aspects*. **2025**.
12. Targeting glypican 3 by Immunotoxins; the promise of immunotherapy in hepatocellular carcinoma. E Rismani, M Hassan, E Shams, M Najimi, **M Vosough**. *Expert Opinion on Therapeutic Targets*. **2025**.
13. Standard Protocols for Characterising Primary and In Vitro-Generated Human Hepatocytes. Z Heydari, R Gramignoli, A Nussler, D Szkolnicka, M Najimi, DC Hay, **M Vosough**. *Journal of Cellular and Molecular Medicine*. **2025**.
14. c-FLIP/Ku70 complex; A potential molecular target for apoptosis induction in hepatocellular carcinoma. Y Haghiri-Sharif-Zamini, A Zarrabi, **M Vosough**. *Archives of Biochemistry and Biophysics*. **2025**.
15. GPC-3 in Hepatocellular Carcinoma; A Novel Biomarker and Molecular Target. M Fathi, K Vakili, M Hassan, E Rismani, **M Vosough**. *Experimental Cell Research*. **2024**.
16. Novel biomarkers for monitoring and management of hepatocellular carcinoma. R Solhi, A Zarrabi, M Hassan, H Mirzaei, **M Vosough**. *Cancer Cell International*. **2024**.
17. AI-Based solutions for current challenges in regenerative medicine. P Asadi Sarabi, M Shabanpouremam, AR Eghtedari, M Barat, B Moshiri, A Zarrabi, **M Vosough**. *European Journal of Pharmacology*. **2024**.
18. MiR-29a-laden extracellular vesicles efficiently induced apoptosis through autophagy blockage in HCC cells. H Seydi, K Nouri, B Shokouhian, A Zarrabi, F Shekari, **M Vosough**. *European Journal of Pharmaceutics and Biopharmaceutics*. **2024**.

19. Fibrotic liver extracellular matrix induces cancerous phenotype in biomimetic micro-tissues of hepatocellular carcinoma model. K Nouri, A Piryaei, H Seydi, M Najimi, **M Vosough**. *Hepatobiliary & Pancreatic Diseases International*. **2024**.
20. Wharton's Jelly mesenchymal stem cell-derived extracellular vesicles induce liver fibrosis-resolving phenotype in alternatively activated macrophages. S Torabi, F Shekari, R Gramignoli, M Najimi, **M Vosough**. *Journal of Cellular and Molecular Medicine*. **2024**.
21. Establishment of a human 3D in vitro liver-bone model as a potential system for drug toxicity screening. G Chen, S Ehnert, F Springer, **M Vosough**, A Kumar, A K Nüssler, R Aspera-Werz. *Archives of Toxicology*. **2024**.
22. Immune regulation and therapeutic application of T regulatory cells in liver diseases. A Ajith, M Merimi, M Kazem Arki, N Hossein-Khannazer, M Najari, **M Vosough**, E Marc Sokal, M Najimi. *Frontiers in Immunology*. **2024**.
23. Bioengineering scalable and drug-responsive in vitro human multicellular non-alcoholic fatty liver disease microtissues encapsulated in the liver extracellular matrix-derived hydrogel. N Asadollahi, M Hajari, M Alipour, M Ajoudanian, **M Vosough**, A Piryaei. *EXCLI journal*. **2024**.
24. Bioengineering vascularized liver tissue for biomedical research and application. P Davoodi, M Hassan, D Hay, **M Vosough**. *Scandinavian Journal of Gastroenterology*. **2024**.
25. Immunomodulatory performance of GMP-compliant, clinical-grade mesenchymal stromal cells from four different sources. M Arki, N Hossein-Khannazer, **M Vosough**. *Heliyon*. **2024**.
26. XBP1 as a novel molecular target to attenuate drug resistance in hepatocellular carcinoma. Z Hendi, P Asadi Sarabi, D Hay, **M Vosough**. *Expert Opinion on Therapeutic Targets*. **2023**.
27. Enhanced intracellular accumulation and cytotoxicity of bortezomib against liver cancer cells using N-stearyl lactobionamide surface modified solid lipid nanoparticles. F Mostafaei, S Torabi, B Baradaran, **M Vosough**, P Zakeri-Milani. *International Journal of Pharmaceutics*. **2023**.

28. Autophagy orchestrates resistance in hepatocellular carcinoma cells. H Seydi, K Nouri, N Rezaei, A Tamimi, M Hassan, H Mirzaei, **M Vosough**. *Biomedicine & Pharmacotherapy*. **2023**.
29. Co-delivery of doxorubicin and paclitaxel via noisome nanocarriers attenuates cancerous phenotypes in gastric cancer cells. N Rezaei, N Hossein-Khannazer, **M Vosough**. *European Journal of Pharmaceutics and Biopharmaceutics*. **2023**.
30. Epigallocatechin-3-gallate induced apoptosis by dissociation of c-FLIP/Ku70 complex in gastric cancer cells. M Shahriari Felordi, M Alikhani, H Aboulkheyr, A Piryaee, M Najimi, **M Vosough**. *Journal of Cellular and Molecular Medicine*. **2023**.
31. Immunotherapeutic approaches in Hepatocellular carcinoma: Building blocks of hope in near future. N Minaei, **M Vosough**. *European Journal of Cell Biology*. **2022**.
32. HNF4 α is Possibly the Missing Link between Epithelial-Mesenchymal Transition and Warburg Effect during Hepatocarcinogenesis. B Shokouhian, **M Vosough**. *Cancer Science*. **2022**.
33. Mimicking the liver function in micro-patterned units: Challenges and perspectives in 3D-Bioprinting. Z Heydari, **M Vosough**. *Bioprinting*. **2022**.
34. In vitro modeling of liver fibrosis in 3D microtissues using scalable micropatterning system. E Zahmatkesh, **M Vosough**, A Nussler. *Archives of Toxicology*. **2022**.
35. Natural Scaffolds Used for Liver Regeneration: A Narrative Update; M Vazirzadeh, **M Vosough**, K Ghaedi. *Stem Cell Reviews and Reports*. **2022**.
36. Extraembryonic Mesenchymal Stromal/Stem Cells in Liver Diseases: A Critical Revision of Promising Advanced Therapy Medicinal Products. MA Shahrbafe, **M Vosough**. *Cells*. **2022**.
37. Mesenchymal stromal cell therapy improves refractory perianal fistula in Crohn's disease: case series clinical interventional study. **M Vosough**, M Mohamadnejad. *Cell Journal*. **2022**.

38. PSC associated inflammatory bowel disease: A distinct entity. A Beheshti-Maal, **M Vosough**. *Expert Review of Gastroenterology & Hepatology*. **2022**.
39. Hepatic stellate cell activation by TGF β induces hedgehog signaling and endoplasmic reticulum stress simultaneously. R Solhi, **M Vosough**. *Toxicology in Vitro*. **2022**.
40. Rhenium Perrhenate (188ReO₄) Induced Apoptosis and Reduced Cancerous Phenotype in Liver Cancer Cells; Samieh Asadian, ..., **M Vosough**. *Cells*. **2022**.
41. The role of non-coding RNAs in chemotherapy for gastrointestinal cancers. F Dashti, **M Vosough**, N Rahimian, M R Hamblin, H Mirzaei. *Molecular Therapy-Nucleic Acids*. **2021**.
42. Autophagy and gastrointestinal cancers: the behind the scenes role of long non-coding RNAs in initiation, progression, and treatment resistance. R Shafabakhsh, **M Vosough**, H Mirzaei. *Cancer Gene Therapy*. **2021**.
43. Advanced therapeutic modalities in hepatocellular carcinoma: Novel insights. B Shokoohian, **M Vosough**. *Journal of cellular and molecular medicine*. **2021**.
44. Metabolic hallmarks of liver regeneration. R Solhi, **M Vosough**. *Trends in Endocrinology & Metabolism*. **2021**.
45. Tissue-specific microparticles improve organoid microenvironment for efficient maturation of pluripotent stem-cell-derived hepatocytes. E Zahmatkesh, **M Vosough**. *Cells*. **2021**.
46. Evolution of organoid technology: Lessons learnt in Co-Culture systems from developmental biology. E Zahmatkesh, **M Vosough**. *Developmental Biology*. **2021**.

Congress Papers and Oral Presentation

- Invited speaker, IMAC 2025, 2025 December 5-6, Moscow, Russia

- Invited speaker and chairman, IUIS 2025, 2025 August 14-17, Vienna, Austria.
- Innovative Liver Cell-based Platforms: A New Insight in Drug Screening and Toxicology, 20th Royan International Congress on Stem Cell Biology & Technology, 28-30 August 2024, Tehran, Iran
- From Genes to Tumors: Decoding AURKA's Impact on Hepatocellular Carcinoma, 23rd National & 11th International Iranian Congress of Biology, 9-11 September 2024, University of Tehran, Tehran, Iran
- Turmerone-loaded niosomes inhibit proliferation and EMT in hepatocellular carcinoma in vitro models, 20th Royan International Congress on Stem Cell Biology & Technology, 28-30 August 2024, Royan Institute, Tehran, Iran
- Mesenchymal Stromal Cell-Extracellular Vesicles-Loaded MiR-29a Induced Apoptosis in HCC Cell Lines, 20th Royan International Congress on Stem Cell Biology & Technology, 28-30 August 2024, Royan Institute, Tehran, Iran
- Bioinformatics approach for shedding light on controversial information of IGF1/2 expression pattern in hepatocellular carcinoma, 3rd International and 12th National Iranian Conference on Bioinformatics, 28-29 February 2024, University of Science and Technology of Mazandaran, Behshahr, Iran
- HCC Cells Decreased Hepatic Characteristics After Exposing to Fibrotic Liver ECM-Derived Microparticles in 3D Liver Micro-Tissues, 20th Royan International Congress on Stem Cell Biology & Technology, 28-30 August 2024, Royan Institute, Tehran, Iran
- Human Placental Biomaterials Ameliorate Cancerous Phenotype in Hepatocellular Carcinoma, 20th Royan International Congress on Stem Cell Biology & Technology, 28-30 August 2024, Royan Institute, Tehran, Iran
- KDM6A Over-Expression Attenuated Epithelial-Mesenchymal Transition and Induced Mesenchymal-Epithelial Transition in Hepatocellular Carcinoma Cells, 20th Royan International Congress on Stem Cell Biology & Technology, 28-30 August 2024, Royan Institute, Tehran, Iran

Honors, Awards, and Grants

- International grant, INSF, 2026
- 26th Top National Biomedical Researcher Award, Tehran, Ministry of science and education, 2025 December 16th
- Scientific chairman of the 4th WANA international congress in Regenerative Medicine, Kish island, 2025 May 3-4
- Supervisor, Joint international PhD program, Royan Institute and KU Leuven, Belgium, 2021-2025
- Featured article and the cover page of *Cell Journal*, 2024
- The 1st market authorization record for the ATMP-based commercial products in Iran, July 2023
- Featured article and the cover page of *Journal of Molecular Medicine*, 2023
- Featured article and the cover page of *Cell Journal*, 2022
- 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, 2021
- Featured article and the cover page of *Journal of Molecular Medicine*, 2020
- International grant, DAAD, NIMAD, INSF, Germany-Iran exchange program, 2020
- National grant from Academy of Science, 2019
- National grant from Cancer foundation charity, 2018
- National grant from Cancer institute for differentiation therapy in HCC, 2017
- 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, 2016
- Fellowship program in EU-funded research project, HUMAN - health and the understanding of metabolism, aging and nutrition, 2013-2016
- Featured article and cover page of *Stem Cell and Development*, 2013
- Awarded for the best abstract in the 17th International Society for Differentiation conference in Amsterdam, the Netherlands, 2012
- National Full-Funded PhD scholarship, Iranian MOH, 2008