Rouzbeh R. Taghizadeh, Ph.D.
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EXECUTIVE SUMMARY: Scientist, Entrepreneur, & Innovator in the Regenerative Medicine, Cellular & Tissue Therapeutics, and Longevity industries, with a proven track-record of over 20 years of inventing and bringing novel technologies to market by addressing gaps in the therapeutic industries – with the ultimate goal to realize the clinical potential of cell-, tissue-, and protein-based therapies in delivering safe & effective treatments to ailing patients.

EDUCATION

2008 **Boston Biomedical Research Institute (BBRI),** Watertown, Massachusetts, USA
Post-Doctoral Research Fellow, Programs in Regenerative Biology and Cancer
- Focused on pre-clinical transplantation studies of *ex vivo* expanded human hematopoietic stem cells using the Suppression of Asymmetric Cell Kinetic (SACK) method.

2006 – 2008 **Massachusetts Institute of Technology (MIT),** Cambridge, Massachusetts, USA
Post-Doctoral Associate, Biological Engineering Department
- Focused on *in vivo* transplantation studies of *ex vivo* expanded human hematopoietic stem cells and commercialization opportunities for stem cell expansion technology, mainly focused on potential for hematopoietic stem cell therapies.

2001 –2006 **Massachusetts Institute of Technology (MIT),** Cambridge, Massachusetts, USA
Ph.D., Stem Cell Bioengineering, Biological Engineering Department
- Ph.D. Dissertation: "Investigation of a Suppression of Asymmetric Cell Kinetics (SACK) Approach for *ex vivo* Expansion of Human Hematopoietic Stem Cell".

1996 – 2000 **University of Massachusetts, Amherst,** Amherst, Massachusetts, USA
B.S., Chemical Engineering (Honors), Chemical Engineering Department
- Honors Dissertation: "Paclitaxel administration and its effects on clinically relevant human cancer and non-cancer cell lines"
- Minors in Chemistry and Philosophy

WORK & RESEARCH EXPERIENCE

2022 – Present **Kendall Innovations, LLC.,** Cambridge, Massachusetts, USA
Founder & President
- Founded consulting firm dedicated to providing support to ventures in Regenerative Medicine, Longevity, Cellular & Tissue Therapeutics.
- Provided scientific and technical consulting support focused on tissue collection, processing SOPs, GMP manufacturing of therapeutics, QMS, Regulatory, business development, novel tool applications (e.g., potency assays, cryopreservation) and directed R&D, pre-clinical, & clinical studies.
- Delivered business development opportunities to clients in the Regenerative Medicine, Longevity, Cellular & Tissue Therapeutics.
- Offered consulting support in the development & manufacturing of medical devices, cell-, tissue- & protein-based products.

2008 – 2023 **AuxoCell Laboratories, Inc.,** Cambridge, Massachusetts, USA
Co-Founder & Chief Scientific Officer
- Co-founded a biotechnology company in 2008 & served as Chief Scientific Officer.
- Focused on developing novel technologies/platforms for the regenerative medicine and stem cell therapeutics industries.
- Published peer-reviewed manuscripts, book chapters.
- Editor of 'Perinatal Stem Cells'
- Author of 14 issued US Patents & numerous International Patents.

- Identified, structured and executed business development opportunities.
- Lead Business development & Scientific advancements to enable cash-flow positivity for the company within the first 3 years.
- Structured and executed numerous Licensing, Purchase & Sales, Service and Research Agreements.
- Led scientific direction, focusing on novel technologies, banking and therapeutic applications of human mesenchymal stem/stromal cells (MSCs) derived from the umbilical cord tissue and other tissue sources.
- Played multiple critical roles in the company including scientific, regulatory, manufacturing, business development & marketing/sales.
- Developed technologies and methods for procurement, pre-processing, processing, quality control, packaging, cryopreservation, & post-cryopreservation of umbilical cord tissue for public and private cord blood banks.
- Developed first cGMP isolation methods for the extraction of native mesenchymal stem/stromal cells from the Wharton's Jelly of Umbilical Cord Tissue (UCT) via enzymatic digestion in 2008.
- Licensed these novel methodologies to public and private cord blood banks domestically and internationally, including ViaCord® (USA), CordVida (Brazil), Crioestaminal (Portugal), IASO (Greece), Magellan (Australia; Veterinary) from 2009-2012.
- Invented, developed & patented a revolutionary, novel solid tissue processing system (AC:Px®) that standardizes mechanical breakdown of solid tissue (in lieu of standard enzymatic, biochemical means) in a closed, one-time use, disposable system in 2012.
- Developed & validated:
    - First cGMP UCT processing methods to extract native, primary cells for Umbilical Cord Blood (UCB) Banks in 2008.
    - A first-of-kind, novel closed system processing system (AC:Px® System) for the standardized processing of solid tissue without the need for enzymatic digestion.
    - Pre-processing supportive tissue procurement, delivery, and treatment SOPs.
    - Post-processing supportive tissue quality control (QC) for bacteriology & using flow cytometry-based QC for the identification, quantification & viability of isolated products.
    - Cryopreservation and post-cryopreservation SOPs.
    - Methods to *ex vivo* expand MSCs from the derived native, primary UCT MSCs in serum-free, xeno-free medium.
    - Methods to *ex vivo* expand MSCs from the derived UCT explants.
    - Flow cytometry (FACS) based quality control for the identification, quantification & viability of derived native/primary cell populations from solid tissue and *ex vivo* expanded MSCs products.
- Developed methods and techniques to process additional solid tissues, including adipose, amnion, placenta, kidney, heart, liver, pancreas, skin, lung, brain, intestines, and reproductive organs using the AC:Px® System.
- Led business development efforts to identify and on-board new clients, along with providing marketing, regulatory, manufacturing, business development & hands-on technical/scientific support.
- Led & supported numerous academic collaborations (Massachusetts General Hospital, Joslin Diabetes Center, Duke, Wake Forest, UC Davis, Rutgers, University College London, Monash) & industry partnerships (ViaCord/Perkin Elmer, CordVida, Magellan, Crioestaminal, IASO, NJ Sharing Network, among others).
- Designed & conducted research & development studies, along with performing analysis in validating the AC:Px® System.
- Trained and provided technical, scientific, regulatory, marketing and sales support to new customers on the AC:Px® System.
- Trained & managed >250 staff with various backgrounds on these technologies.
- Led laboratory facilities for research & development including:
    - Purchased equipment for company owned laboratories and

- Developed partnerships and collaborations with surrounding universities & companies.
- Taught classes to undergraduates at Brown & Tufts Universities on Regenerative Medicine, Cell & Tissue Engineering, & Stem Cell Biology.
- Responsible for all laboratory operations including supervising scientific staff & safety of laboratory operations.
- Further developed protocols for cell distribution and banking to maximize cell recovery.
- Designed and executed R&D experiments to generate data required for patent applications.
- Envisioned novel technologies and platforms to strengthen Intellectual Property suite.
- Developed and implemented short- & long-range scientific objectives.
- Served as AuxoCell's liaison to scientific community and biotechnology industry via services, publications, presentations, etc.
- Decided overall company's scientific and business strategies, marketing and sales, in addition to product development.
- Helped generate Venture Capital & Angel Investor interest.
- Represented AuxoCell at domestic & international conferences.
- Mentored Ph.D. Candidate at UCL; Mentor for MIT Biotechnology Mentor Program (BMP), MassChallenge & Venture Café.

2013 – 2023 **Perinatal Stem Cell Society,** Cambridge, Massachusetts, USA
Co-Founder & Director

- Co-founded & established a non-profit society to bring together scientists, clinicians, patients & regulators to discuss cell-/non-cell-based products derived from perinatal/afterbirth tissues.
- Led and participated in committees to tackle standardization in the perinatal tissue industry.
- Organizer of the Perinatal Stem Cell Society Annual Meeting.

2008 – 2013 **Tufts Medical Center,** Boston, Massachusetts, USA
Visiting Scientist, Molecular Oncology Research Institute (MORI)

- Conducted research & development studies in support of AuxoCell's scientific & business mission.

2007 – 2008 **Boston Biomedical Research Institute (BBRI),** Watertown, Massachusetts, USA
Post-Doctoral Research Fellow, Programs in Regenerative Biology and Cancer

- Focused on pre-clinical transplantation studies of human hematopoietic stem cells expanded using a Suppression of Asymmetric Cell Kinetic (SACK) method.
- Investigated potential commercialization opportunities for stem cell expansion technology, mainly focused on potential for hematopoietic stem cell therapies.
- Worked to identify exclusive adult stem cell markers, based on asymmetric cell division.

2006 – 2007 **Massachusetts Institute of Technology (MIT),** Cambridge, Massachusetts, USA
Post-Doctoral Associate, Biological Engineering Department

- Continued investigation and development of a novel cell kinetic method based on a p53-dependent pathway to expand human hematopoietic stem cells as pure populations.
- Focused on therapeutic applications of this technology specifically towards realizing efficient bone marrow transplantations and permanently overcoming hematopoietic disorders and cancers (i.e., chronic myelogenous leukemia).
- Validated expansion of *ex vivo* expanded human hematopoietic stem cells by designing and implementing *in vivo* studies, from transplanting to evaluating transplanted cells/tissue in appropriate mouse models.
- Focused on commercialization opportunities for stem cell expansion technology, mainly focused on potential for hematopoietic stem cell therapeutics.

2001 – 2006 **Massachusetts Institute of Technology (MIT),** Cambridge, Massachusetts, USA
Research Assistant, Ph.D. Candidate, Biological Engineering Department

- Investigated and developed novel cell kinetic methods to expand human hematopoietic stem cells *ex vivo* as pure populations.

- Developed adult rat hepatic stem cell lines that expressed cyan- & yellow-fluorescent protein for use in *in vivo* transplantation studies & *ex vivo* characterization in 3D liver bioreactors.
- Investigated commercialization opportunities of expanded human hematopoietic stem cells.
- Participated in 2004 MIT $50K business plan competition & advanced to semifinals.

2003 **Lonza (*formerly Cambrex BioScience*) Walkersville, Inc.,** Walkersville, Maryland, USA
Biotechnology Intern, Research & Development Division
- Gained experience with enriching human cell populations for rare stem cells.
- Studied suppression of cell kinetics (SACK) expansion technology as a method to expand *ex vivo* human hematopoietic stem cells from CD34+ mobilized peripheral blood cells.
- Acquired first-hand experience working in an industrial environment.

2000 – 2001 **Massachusetts Institute of Technology (MIT),** Cambridge, Massachusetts, USA
Research Technician, Division of Bioengineering and Environmental Health
- Investigated novel methods to expand murine hematopoietic stem cells from murine bone marrow.
- Developed and investigated cell kinetic properties of fluorescent adult rat hepatic stem cells.

1999 – 2000 **University of Massachusetts, Amherst,** Amherst, Massachusetts, USA
Undergraduate Researcher, Chemical Engineering Department
- Investigated Paclitaxel administration and its effects on clinically relevant human cancer and non-cancer cell lines as part of undergraduate honors thesis dissertation.

1999 **Massachusetts Institute of Technology (MIT),** Cambridge, Massachusetts, USA
Undergraduate Researcher, Division of Bioengineering and Environmental Health
- Performed analysis and identification of guanine nucleotide pools primarily responsible for p53 gene expression in mammalian cells using NMR spectroscopy.
- Gained experience with NMR spectroscopy, along with aseptic cell culturing techniques.

1999 **University of Massachusetts, Amherst,** Amherst, Massachusetts, USA
Undergraduate Researcher, Porous Characteristics Laboratory, Chemical Engineering Department
- Analyzed & modeled desorption of multiple pollutants from zeolite membranes using conventional heating and microwave radiation.

1997 – 1998 **REC Components,** Enfield, Connecticut, USA
Engineering Intern, Engineering Division
- Optimized protocols for the manufacturing of fly-fishing rod components.
- Programmed equipment used in the manufacturing of fly-fishing rod components.
- Developed new protocols and engineering designs to produce new fly-fishing rod components.

1995 **Massachusetts Institute of Technology (MIT),** Cambridge, Massachusetts, USA
Student Researcher, Chemical Engineering Department
- Analyzed combustion-generated samples using high performance liquid chromatography (HPLC), gas chromatography and mass spectrometry (GC/MS).
- Prepared samples for analysis by using solvent extraction techniques.

LEADERSHIP SKILLS

2017 – Present **MIT Biotechnology Group (BTG),** Cambridge, Massachusetts, USA
Mentor
- Mentor for MIT graduate students in career path, start-ups, IP, business development in biotechnology.

2017 – Present **MassChallenge,** Boston, Massachusetts, USA
Mentor & Judge
- Mentor for new business ventures in the life sciences and healthcare space in the USA & Switzerland.

- Provide support for scientific/technical direction, business development, unmet market need/demand, regulatory, manufacturing, QMS, and fundraising.
- Judged ventures' business plans for MassChallenge's Business Plan Competition.

2002 – 2005 **Massachusetts Institute of Technology (MIT),** Cambridge, Massachusetts, USA
Student Representative, Biotechnology Process Engineering Center (BPEC) Student Leadership Council (SLC)

- Student Representative for BPEC Industrial Consortium Advisory Board (ICAB).
- Organized well-attended monthly seminar series highlighting the research of the BPEC and MIT faculty, as well as the research of BPEC's industrial member representatives.
- Organized STEM opportunities for local elementary school students and teachers to learn about the importance of science and engineering in medicine.

2003 – 2004 **Massachusetts Institute of Technology (MIT),** Cambridge, Massachusetts, USA
President, Persian Students Association (PSA)

- Organized fundraising events to increase MIT PSA endowment.
- Led fundraising campaign to raise over $1000 for 2003 earthquake in Bam, Iran.
- Planned events with student organizations at MIT and in the Boston area.
- Organized monthly events for members of the community.
- Resolved conflicts among officers & members.
- Represented the PSA in graduate student orientation events.

TEACHING EXPERIENCE & MANAGEMENT SKILLS

2008 – Present **AuxoCell Laboratories, Inc.**, Cambridge, Massachusetts, USA

- Trained & managed >250 staff with various backgrounds on aseptic technique & novel technologies for solid tissue processing under cGMP conditions.
- Managed 15 Scientists & Associate Scientists.
- Taught classes to undergraduates at Brown & Tufts Universities on Regenerative Medicine, Cell & Tissue Engineering, & Stem Cell Biology.
- Mentor for Ph.D. Candidate at UCL; Mentor for MIT Biotechnology Program (BMP), MassChallenge & Venture Café.

2003 – 2006 **Massachusetts Institute of Technology (MIT),** Cambridge, Massachusetts, USA
Undergraduate & Graduate Research Supervisor

- Trained & advised graduate & undergraduate students to work on independent research projects.

2004 **Massachusetts Institute of Technology (MIT),** Cambridge, Massachusetts, USA
Teaching Assistant, Chemicals in the Environment: Toxicology & Public Health.

- Organized supplementary study material for students.
- Taught discussion & study sessions for multiple student sections.
- Advised student groups on term projects & presentations.

2003 **Massachusetts Institute of Technology (MIT),** Cambridge, Massachusetts, USA
Co-Founder, Asymmetrix

- Participated in MIT Sloan $50k Business Plan Competition.
- Developed a novel technology to enable manufacturing of universal blood supply based on doctoral thesis research.
- Wrote business plan and pitched plan to potential investors.
- Participated in networking events & added new team members.
- Awarded Semi-Finalist in the 2003 MIT Sloan $50k Business Plan Competition – the highest rank for any biotechnology company in 2003.

INVITED SEMINARS & PRESENTATIONS

"Perinatal Mesenchymal Stem/Stromal Cell Banking Technologies from Umbilical Cord Tissue", 6th Annual Perinatal Stem Cell Society Congress, Salt Lake City, Utah, USA, March 5, 2020.

"Perinatal Mesenchymal Stem/Stromal Cell Banking Technologies from Umbilical Cord Tissue", American Association of Blood Banks (AABB) CT-CET Subsection Webinar: Perinatal and Cord Tissue Products, August 15, 2019.

"Overlooked Realities in Stem Cell Regenerative Medicine: Back to the Basics", LabCentral Chalk Talk, Cambridge, Massachusetts, USA, April 19, 2019.

"Back to the Basics: Overlooked Realities in Stem Cell Regenerative Medicine", 5th Annual Perinatal Stem Cell Society Congress, Salt Lake City, Utah, USA, February 28, 2019.

"Perinatal Mesenchymal Stem/Stromal Cell Banking Technologies from Umbilical Cord Tissue", American Association of Blood Banks (AABB) Webinar: Perinatal and Cord Tissue Products, February 14, 2019.

"Perinatal Mesenchymal Stem/Stromal Cell Banking Technologies from Umbilical Cord Tissue", 4th Annual Perinatal Stem Cell Society Congress, Salt Lake City, Utah, USA, March 1, 2018.

"Perinatal Mesenchymal Stem/Stromal Cell Banking Technologies from Umbilical Cord Tissue", 15th Annual International Cord Blood Symposium, San Diego, California, USA, June 10, 2017.

"Perinatal Mesenchymal Stem/Stromal Cell Banking Technologies for Future Clinical Use", 3rd Annual Perinatal Stem Cell Society Congress, Teaneck, New Jersey, USA, May 21, 2017.

"Perinatal Mesenchymal Stem/Stromal Cell Banking Technologies for Future Clinical Use", BioArchive & AXP User Meeting, Leiden, The Netherlands, May 12, 2017.

"Perinatal Mesenchymal Stem Cell Banking for Umbilical Cord Blood Transplantation", 14th Annual International Cord Blood Symposium, San Francisco, California, USA, June 10, 2016.

"Perinatal Mesenchymal Stem Cell Banking for Umbilical Cord Blood Transplantation", American Association of Blood Banks (AABB) Webinar 'Perinatal Cells and the Landscape of Ancillary Cord Blood Banking Services (#1610)', May 12, 2016.
"Perinatal Mesenchymal Stem Cell Banking for Umbilical Cord Blood Transplantation", Massachusetts General Hospital, Shriner's Hospital, Boston, Massachusetts, USA, March 11, 2016.

"Perinatal Mesenchymal Stem Cell Banking for Umbilical Cord Blood Transplantation", 2nd Annual Perinatal Stem Cell Society Congress, Aspen, Colorado, USA, March 4, 2016.

"Perinatal Mesenchymal Stem Cell Banking for Umbilical Cord Blood Transplantation and Regenerative Medicine", International Society for Cell Therapy Annual Meeting, Las Vegas, Nevada, USA, May 27, 2015.

"Perinatal Mesenchymal Stem Cell Banking for Umbilical Cord Blood Transplantation and Regenerative Medicine", Novel Stem Cells & Vesicle Symposium, Providence, Rhode Island, USA, October 30, 2014.

"Enabling Processing, Banking, & Therapeutic Use of Perinatal Stem Cells from Umbilical Cord Tissue", Inaugural LabCentral Chalk Talk, Cambridge, Massachusetts, USA, July 17, 2014.

"The ®evolution in Umbilical Cord Tissue Processing & Banking", 1st International Perinatal Stem Cell Society Congress, Regenerative Medicine Foundation, San Francisco, California, USA, May 7, 2014.

"Perinatal Mesenchymal Stem Cell Banking for Umbilical Cord Blood Transplantation and Regenerative Medicine", World Cord Blood Congress, Cambridge, Massachusetts, USA, September 30, 2013.

"Wharton's Jelly Derived Umbilical Cord Mesenchymal Stem Cells: Regenerative Medicine Beyond Umbilical Cord Blood", American Association of Blood Banks (AABB) Audioconference: Islet Cell and Other Somatic Cell Therapies, November 16, 2011.

"Isolation, Processing and Banking of Mesenchymal Stem Cells from human Wharton Jelly", Faculdade de Medicina da Universidade de São Paulo - Ribeirão Preto, Brasil, September 26, 2011.

"Wharton's Jelly Derived Umbilical Cord Mesenchymal Stem Cells: Regenerative Medicine Beyond Umbilical Cord Blood", European Molecular Biology Organization (EMBO) Workshop: From fetomaternal tolerance to immunomodulatory properties of placenta-derived cells in cell therapy - 1st International Placenta Stem Cell Society (IPLASS) meeting, Brescia, Italy, October 5, 2010.

"Wharton's Jelly Derived Umbilical Cord Mesenchymal Stem Cells: Regenerative Medicine Beyond Umbilical Cord Blood", 1st International Congress: Medical Applications of Stem Cells, Limassol, Cyprus, October 17, 2009.

"Development of Culture Methods for Expansion of Human Hematopoietic Stem Cells", R&D Systems, Minneapolis, Minneapolis, USA, February 28, 2008.

"A Novel Approach to Human Hematopoietic Stem Cell Expansion", LifeScan, Johnson & Johnson, Skillman, New Jersey, USA, August 17, 2007.

"Development of Methods for *Ex vivo* Expansion of Human Hematopoietic Stem Cells," Cambrex BioScience Walkersville, Inc., Walkersville, Maryland, USA, May 11, 2005.

BOOK EDITOR

Anthony Atala, Kyle J. Cetrulo, **Rouzbeh R. Taghizadeh**, Sean V. Murphy, Curtis L. Cetrulo, editors: *Perinatal Stem Cells*, Academic Press, 2018.

Kyle J. Cetrulo, Curtis L. Cetrulo, **Rouzbeh R. Taghizadeh**, editors: *Perinatal Stem Cells Volume 2.* Wiley-Blackwell Publishing, 2013.

PUBLICATIONS

Rao P.N., Deo D.D., Marchioni M.A., **Taghizadeh R.R**., Cetrulo K., Sawczak S., Myrick J., "Structural and Functional Characterization of Deceased Donor Stem Cells: A Viable Alternative to Living Donor Stem Cells," Stem Cells International, vol. 2019, Article ID 5841587, 13 pages, 2019. https://doi.org/10.1155/2019/5841587.

Taghizadeh R.R., Cetrulo K.J., Cetrulo C.L., Collagenase Impacts the Quantity and Quality of Native Mesenchymal Stem/Stromal Cells Derived during Processing of Umbilical Cord Tissue. Cell Transplantation, January 2018, Vol. 27(1); 181–193, DOI: 10.1177/0963689717744787.

Leung S.T., Overschmidt B., Allickson J., Atala A., **Taghizadeh R.R.,** Cetrulo K., Verter F, Couto P.S., Murphy S.V., Review of Processing Technology and Techniques for Perinatal Stem Cells Banking and Clinical Applications (Chapter 25), Editor(s): Anthony Atala, Kyle J. Cetrulo, Rouzbeh R. Taghizadeh, Sean V. Murphy, Curtis L. Cetrulo, Perinatal Stem Cells, Academic Press, 2018, Pages 337-355, ISBN 9780128120156, https://doi.org/10.1016/B978-0-12-812015-6.00025-X.

Crane G.G., **Taghizadeh R.R.,** Sherley J.L., In vitro evidence for differentiation resistance by distributed stem cells during deterministic asymmetric self-renewal. J Stem Cell Res Med, 2017; DOI: 10.15761/JSCRM.1000121.

Taghizadeh R.R., Holzer P.W., Marino T., Cetrulo K.J., Cetrulo C.L., Jr., Cetrulo C.L., Sr., Towards Clinical Applications of Umbilical Cord Derived Mesenchymal Stem Cells, Perinatal Stem Cells: Biology & Clinical Applications, Springer Publishing, 347-361, 2014.

Taghizadeh R.R., Perinatal Mesenchymal Stem Cell Banking for Umbilical Cord Blood Transplantations and Regenerative Medicine**,** Perinatal Stem Cells Volume 2, Wiley-Blackwell Publishing, 53-69, 2013.

Taghizadeh R.R., Cetrulo K.J., Cetrulo C.L. Wharton's Jelly stem cells: Future clinical applications. Placenta. 2011 Oct;32 Suppl 4:S311-5. Epub 2011 Jul 6. PubMed PMID: 21733573.

Taghizadeh R.R., Pollok, K.E., Betancur, M.B., Boissel, L., Cetrulo KJ, Marino, T., Wolfberg, A., Klingemann, H.G., Cetrulo C. L . Wharton's Jelly Derived Umbilical Cord Mesenchymal Stem Cells: Regenerative Medicine Beyond Umbilical Cord Blood. Placenta. 2011 Oct;32 Suppl 4:S339.

Taghizadeh R, Noh M, Huh YH, Ciusani E, Sigalotti L, Maio M, Arosio B, Nicotra MR, Natali P, Sherley JL, La Porta CA. CXCR6, a newly defined biomarker of tissue-specific stem cell asymmetric self-renewal, identifies more aggressive human melanoma cancer stem cells. PLoS One. 2010 Dec 22;5(12):e15183. PubMed PMID: 21203549; PubMed Central PMCID: PMC3008677.

Taghizadeh, R.R., Sherley, J.L., Expanding the Therapeutic Potential of Umbilical Cord Blood Hematopoietic Stem Cells, Perinatal Stem Cells, Wiley-Blackwell Publishing, 21-35, 2009.

Taghizadeh, R.R., Sherley, J.L., CFP & YFP, but not GFP, Provide Stable Fluorescent Marking of Adult Rat Hepatic Stem Cells, *J. Biomed & Biotech.,* Article ID 453590, 9 pages, doi:10.1155/2008/453590, 2008.

Taghizadeh, R.R., Sherley, J.L., Advanced Hematopoietic Stem Cell Therapy – Why Aren't We There Yet*?, Cambrex Resource Notes*, 3(2): 4-5, 2005.

Moritz, J.M., **Taghizadeh, R.R.**, Liu, S, Stolz, D.B., Sherley, J.L., Griffith, L.G., Enhanced Differentiation in Three-Dimensional Microreactor Co-culture of Hepatocytes and Liver Epithelial Cells, *in preparation.*

Taghizadeh, R.R., Pollak, K.E., Warren, M.K. Marshak, D.R., Sherley, J.L., *in preparation.*

PATENTS & DISCLOSURES

Taghizadeh; Rouzbeh R. (Cambridge, MA), Puniello, Paul (Bristol, RI). 2019. "Centrifuge Clip and Method", United States Patent 10,441,901; Filed 15 Sept 2017 and Issued 15 October 2019.

Taghizadeh; Rouzbeh R. (Cambridge, MA), Puniello, Paul (Bristol, RI). 2018. "Centrifuge Clip and Method", United States Patent 9,993,748; Filed 11 Aug 2015 and Issued 12 Jun 2018.

Taghizadeh; Rouzbeh R. (Cambridge, MA). 2018. "Native Wharton's Jelly Stem Cell and their Purification", Patent 9,902,301; Filed 12 Dec 2016 and Issued 20 March 2018.

Taghizadeh; Rouzbeh R. (Cambridge, MA), Meade, John (Mendon, MA). 2017. "Systems and Methods For Processing Cells", United States Patent 9,663,760; Filed 24 Sept 2015 and Issued 30 May 2017.

Taghizadeh; Rouzbeh R. (Cambridge, MA). 2015. "Native Wharton's Jelly Stem Cell and their Purification", United States Patent 9,441,201; Filed 29 Jan 2013 and Issued 13 Sept 2016.

Taghizadeh; Rouzbeh R. (Cambridge, MA), Puniello, Paul (Bristol, RI). 2016. "Centrifuge Clip", United States Design Patent D748462; Filed 11 Aug 2014 and Issued 2 Feb 2016.

Taghizadeh; Rouzbeh R. (Cambridge, MA), Meade, John (Mendon, MA). 2015. "Systems and Methods For Processing Cells", United States Patent 9,145,544; Filed 21 Jan 2015 and Issued 29 Sept 2015.

Taghizadeh; Rouzbeh R. (Cambridge, MA). 2015. "Native Wharton's Jelly Stem Cell and their Purification", United States Patent 9,012,222; Filed 29 Jan 2013 and Issued 21 April 2015.

Taghizadeh; Rouzbeh R. (Cambridge, MA), Meade, John (Mendon, MA). 2014. "Systems and Methods For Processing Cells", United States Patent 8,967,512; Filed 19 Nov 2014 and Issued 3 March 2015.

Taghizadeh; Rouzbeh R. (Cambridge, MA), Meade, John (Mendon, MA). 2014. "Systems and Methods For Processing Cells", United States Patent 8,893,995; Filed 1 July 2013 and Issued 25 November 2014.

Taghizadeh; Rouzbeh R. (Cambridge, MA), Meade, John (Mendon, MA). 2014. "Systems and Methods For Processing Cells", United States Patent 8,967,513; Filed 19 Nov 2014 and Issued 3 March 2015.

Taghizadeh; Rouzbeh R. (Cambridge, MA), Carpenter; Matthew C. (North Attleboro, MA), Copeland; David J. (Minnetonka, MN), Perry; Matthew J. (East Greenwich, RI), Puniello; Paul A. (Bristol, RI). 2014. "Tissue Mincing Tool", United States Design Patent D717,587; Filed 18 April 2014 and Issued 18 November 2014.

Taghizadeh; Rouzbeh R. (Cambridge, MA), Carpenter; Matthew C. (North Attleboro, MA), Copeland; David J. (Minnetonka, MN), Perry; Matthew J. (East Greenwich, RI), Puniello; Paul A. (Bristol, RI). 2014. "Tissue Mincing Tool", United States Design Patent D716,601; Filed 18 April 2014 and Issued 4 November 2014.

J.L. Sherley, K. Panchalingam, **R.R. Taghizadeh**, "Methods for ex vivo propagation of adult hepatic stem cells", Filed June 21, 2006.

J.L. Sherley and **R.R. Taghizadeh**, "A Kinetic Approach to the Expansion of Human Hematopoietic Stem Cells, MIT Disclosure Case, Filed May 10, 2005.

ABSTRACTS & POSTER PRESENTATIONS

Taghizadeh, Rouzbeh R., Betancur, Monica, Boissel, Laurent, Wolfberg, Adam, Cetrulo, Kyle J., Pollok, Karen E., Klingemann, Hans G., Cetrulo, Curtis L. "Wharton's Jelly Derived Umbilical Cord Mesenchymal Stem Cells: Regenerative Medicine Beyond Umbilical Cord Blood." 7th Annual International Society for Stem Cell Research, Barcelona, Spain, July 8-11, 2009.

Crane, G.G**.**, **Taghizadeh, R.R.**, and Sherley, J.L. "Asymmetric Adifferentiation by SACK-Derived Hepatic Adult Stem Cell Strains." 9th International Congress on Cell Biology, COEX, Seoul, South Korea, October 7-10, 2008.

Panchalingam, K., **Taghizadeh, R. R**., Ganz, M., Jacox, L., Paré, J.-F., Clifton, J., Josic, D., and Sherley, J. L. "Progress In Sack Expansion Of Human Distributed Stem Cells." NIH Director's Pioneer Award Symposium, NIH, Bethesda, MD, September 22-23, 2008.

Taghizadeh, R.R. and Sherley, J.L., "Development of a Cell Kinetics Method for *Ex vivo* Expansion of Human Hematopoietic Stem Cells," 4th Annual Meeting of the International Society for Stem Cell Research, Toronto, Ontario, June 28-July 1, 2006.

Taghizadeh, R.R. and Sherley, J.L., "Development of a Cell Kinetics Method for *Ex vivo* Expansion of Human Hematopoietic Stem Cells," 3rd Annual Meeting of the International Society for Stem Cell Research, San Francisco, CA, June 23-26, 2005.

Taghizadeh, R.R. and Sherley, J.L., "CFP & YFP, but not GFP, Provide a Stable Fluorescent Reporter in an Adult Rat Hepatic Stem Cell Line," 2nd Annual Meeting of the International Society for Stem Cell Research, Boston, MA, June 10-13, 2004.

Taghizadeh, R.R. and Sherley, J.L., "Development of a Cell Kinetics Approach for *ex vivo* Expansion of Human Hematopoietic Stem Cells" MIT Center for Cancer Retreat, November 2004 & October 2005.

Taghizadeh, R.R. and Sherley, J.L., "Suppression of Asymmetric Cell Kinetics (SACK) Strategy for the *in vitro* Expansion of Hematopoietic Stem Cells." MIT Center for Cancer Retreat, October 2003.

Taghizadeh, R.R. and Sherley, J.L., "Evaluating the Suppression of Asymmetric Cell Kinetics (SACK) Approach for Expanding Hematopoietic Stem Cells in Culture." MIT-Biotechnology Process Engineering Center Industrial Consortium Advisory Board Meeting, November 10, 2003.

Helmi (**Taghizadeh**), R., Panchalingam, K., and Sherley, J.L., "A Suppression of Asymmetric Cell Kinetics (SACK) Strategy for the Expansion of Hematopoietic Stem Cells in Culture." MIT-Biotechnology Process Engineering Center Industrial Consortium Advisory Board Meeting, November 14-15, 2002.

Panchalingam, K., Helmi (**Taghizadeh**), R., Lansita, J., and Sherley, J.L., "A Cell Kinetics Suppression Strategy for the Expansion of Hematopoietic Stem Cells in Culture," MIT-BPEC (Biotechnology Process Engineering Center) Winter Symposium, Cambridge, MA, February 15-16, 2001.

PROFESSIONAL ASSOCIATIONS

- International Society for Cell Therapy (ISCT)
- Tissue Engineering & Regenerative Medicine International Society (TERMIS)
- American Association of Blood Banks (AABB)
- American Association of Tissue Banks (AATB)
- Perinatal Stem Cell Society (PSCS)
- International Society for Stem Cell Research (ISSCR)
- International Placenta Stem Cell Society (IPLASS)
- Cord Blood Association (CBA)
- American Association for the Advancement of Science (AAAS)
- European Molecular Biology Organization (EMBO)

AWARDS & HONORS

- Manuscript & Grant Reviewer (Stem Cell Translational Medicine, American Association for the Advancement of Science)
- Semi-Finalist in 2003 MIT Sloan $50k Business Plan Competition
- NIH Toxicology Fellow (2005 – 2006)
- NIH Biotechnology Training Fellow (2002 – 2005)
- Tau Beta Pi Engineering Honors Society Member (2000)
- Chemical Engineering Departmental Honors (2000)
- Commonwealth Honors (2000)
- Golden Key Honors Society Member (2000)
- National Deans List Member (1998)
- Dean's List (1996 – 1998)
- MIT Scholarship Recipient (1996 – 2000)
- Winchester Scholarship Recipient (1997 – 2000)
- National Starch & Chemical Scholarship (1998)
- University of Massachusetts, Amherst College of Engineering Scholarship (1996 – 2000)

EQUIPMENT PROFICIENCY & TECHNICAL SKILLS

- Primary human cell cultures (e.g., native human HSCs, MSCs)
- Mammalian cell cultures (human, rat, and murine cell lines)
- Pre-clinical animal studies – Xeno-transplantation of (human) cells into mice
- Mouse tissue/organ harvest & analysis
- Immunocytochemistry, immunofluorescent phenotyping, magnetic immunoselection
- Fluorescent-activated cell sorting (FACS; flow cytometry)
- Cell cycle analysis
- Limited dilution cell studies
- Microscopy (Epifluorescence, Immunofluorescence)
- Single-cell cloning
- Bacterial culture
- DNA plasmid preparation & Cloning
- Stable & transient transfection using non-viral vectors
- DNA gel electrophoresis
- High performance liquid chromatography (HPLC)
- Elutriation
- Perfusion Bioreactors
- Bacteriology Testing studies (BacT Alert Systems)
- Tissue Dissection
- Lyophilization

- Cell surface protein expression studies
- Cell viability studies
- Stem cell potency assays (CFU, animal studies)
- Microbiology studies
- Cell, tissue & non-cellular cryopreservation
- Novel cell counting methods

REFERENCES

Available upon request