

**Guangwen Ren, Ph.D.**

The Jackson Laboratory

600 Main Street, Bar Harbor, ME 04609

E-mail: [Gary.Ren@jax.org](mailto:Gary.Ren@jax.org); Phone: 207-288-6783

Homepage: <https://www.jax.org/research-and-faculty/faculty/gary-ren>

Google scholar website: <https://scholar.google.com/citations?user=eHAY64AAAAJ>

**WORKING EXPERIENCE**

- 07/2017-present Assistant Professor (joint appointment), Department of Medicine, Tufts University School of Medicine, Boston, MA
- 01/2017-present Graduate Faculty Member, School of Biomedical Sciences and Engineering, University of Maine, Orono, ME
- 10/2016-present Assistant Professor, The Jackson Laboratory, Bar Harbor, Maine, USA
- 12/2012-10/2016 Postdoctoral Associate and Associate Research Scholar, Dr. Yibin Kang laboratory, Department of Molecular Biology, Princeton University, NJ, USA
- 04/2009-11/2012 Research Teaching Specialist III, Robert Wood Johnson Medical School, Rutgers University, NJ, USA
- 2003-2004 Deputy manager of proteomics department, Shanghai Genecore Biotechnologies Co., Ltd., Shanghai, China
- 2002-2003 Deputy project manager, Shandong GeneLeuk Biopharmaceutical Co., Ltd., Jinan, Shandong, China

**EDUCATION**

- 2004-2009 Ph.D. in Immunology, Dr. Yufang Shi laboratory, Rutgers University Robert Wood Johnson Medical School, NJ, USA
- 1999-2002 M.S. in Microbiology, Shandong University, Jinan, China
- 1995-1999 B.S. in Microbiology, Shandong University, Jinan, China

**AWARDS/HONORS**

- 2020 NIH/NCI The Method to Extend Research in Time (MERIT) (R37) Award
- 2018 DoD Breast Cancer Research Program Breakthrough Award
- 2014 NIH/NCI K99/R00 Pathway to Independence Award
- 2013 DoD Breast Cancer Research Program Postdoctoral Fellowship Award
- 2012 Postdoctoral fellowship, F. M. Kirby Foundation
- 2011 Gallo Award for Scientific Excellence, New Jersey State Commission on Cancer Research
- 2011 AAI (American Association of Immunologists) Meeting Trainee Abstract Award
- 2010 Pharmacology Research Award for Outstanding Research, Rutgers, USA
- 2010 AAI (American Association of Immunologists) Meeting Trainee Abstract Award
- 2009 Best Poster Presentation Award for 5<sup>th</sup> International Conference on Mesenchymal and non-Hematopoietic Stem Cells, Austin, TX, USA

2008	Holowczak Memorial Travel Award, Rutgers Robert Wood Johnson Medical School, USA.
2004-2009	Fellowship from Rutgers Robert Wood Johnson Medical School, NJ, USA
1999	Outstanding Youth of Shandong University, Shandong University, China
1995-1999	Excellent student scholarship for 5 times, Shandong University, China

## PATENT

Shi Y, **Ren G**, Zhang L. Method for modulating immune responses using stem cells and cytokines. US Patent US20090202479 A1 (Aug 13, 2009).

## EDITORIAL RESPONSIBILITIES:

Editorial board member:

Current Advances in Oncology Research and Therapy (2017-)

*World Journal of Stem Cells* (2010-2015)

*World Journal of Hematology* (2012-2016)

*Journal of Stem Cells and Regenerative Medicine* (2010-2011)

## JOURNAL REVIEWERS:

Journals	<i>Molecular Cancer, Blood, Cell Reports, Cancer Research, Stem Cells, Journal of Immunology, The FASEB Journal, International Journal of Cancer, Cell Death and Disease, Oncogene, Journal of Biological Chemistry, Journal of Molecular Cell Biology, Cell Research, Stem Cells Translational Medicine, Journal of Autoimmunity, Journal of Leukocyte Biology, Stem Cells and Development, Immunology Letters, Tissue Engineering Part A, etc</i>
Book	"Regenerative Medicine - from Protocol to Patient" by Gustav Steinhoff et al. Published by Springer Dordrecht Heidelberg London New York

## GRANT REVIEWERS:

*Breast Cancer Alliance, USA*

*Breast Cancer Now, UK*

*European Research Foundation – Flanders.*

*Medical Research Council (MRC), UK*

*European Research Council (ERC) Advanced Grant 6th Call – 2013*

## SELECTED PUBLICATIONS (23 FROM TOTAL OF 41)

### **As a principal investigator (Oct 2016~present):**

1. Li P, Lu M, Shi J, Gong Z, Hua L, Li Q, Lim B, Zhang XF, Chen X, Li S, Shultz LD, **Ren G**. Lung mesenchymal cells elicit lipid storage in neutrophils that fuel breast cancer lung metastasis. *Nature Immunology*, 2020 Sep 21. doi: 10.1038/s41590-020-0783-5. Online ahead of print.
2. Li P, Lu M, Shi J, Hua L, Gong Z, Li Q, Shultz LD, **Ren G**. Dual roles of neutrophils in metastatic colonization are governed by the host immune system integrity. *Nature Communications*, 2020 Sep 1;11(1):4387. doi: 10.1038/s41467-020-18125-0. PMID: 32873795 PMCID: PMC7463263

3. Li P, Gong Z, Shultz LD, **Ren G**. Mesenchymal stem cells: From regeneration to cancer. *Pharmacol Ther* (invited review). 2019; 200:42-54. PMID: 30998940; PMCID: PMC6626571
4. Shi J, Hua L, Harmer D, Li P, **Ren G**. Cre driver mice targeting macrophages. *Methods Mol Biol*. 2018; 1784: 263-275. PMID: 29761406 PMCID: PMC6331202
5. Hua L, Shi J, Shultz LD, **Ren G**. Genetic models of macrophage depletion. *Methods Mol Biol*. 2018; 1784: 243-258. PMID: 29761404 PMCID: PMC6333569

**As a postdoctoral fellow (June 2009~Oct 2016):**

6. **Ren G**, Zheng H, Shen M, Peng J, Jiang Y, Liu Y, Wei Y, Smith HA, Zheng B, Wu H, Schiff D, Shao C, Haffty B, and Kang Y. Mesenchymal stromal cells play a critical role in cancer resistance to radiotherapy. 2020. Manuscript to be submitted.
7. **Ren G**, Zhao X, Zheng B, Zheng H, Liu Y, Shen M, Sun G, Kane-Goldsmith N, Zhang C, Guo H, Liang L, Wei JJ, Qu X, Yang Q, Shi Y, Tischfield JA, Kang Y\* and Shao C\*. Interferon-gamma and Kit Ligand Drive Tumor-associated Splenic Myelopoiesis. 2020. *Nature Communications*, in revision.
8. **Ren G**, Esposito MB, Kang Y. Bone metastasis and the metastatic niche. *Journal of Molecular Medicine* (invited review). 2015 Nov;93(11):1203-12.
9. **Ren G\***, Liu Y\*, Zhao X, Zheng B, Yuan Z, Zhang L, Qu X, Tischfield JA, Shao C and Shi Y. Tumor Resident Mesenchymal Stromal Cells Endow Naïve Stromal Cells with Tumor-promoting Properties. *Oncogene*, 2014 Jul 24;33(30):4016-20.
10. **Ren G**, Kang Y. A one-two punch of miR-126/126\* against metastasis (news and views). *Nature Cell Biology*. 2013 Mar 1;15(3):231-3.
11. **Ren G**, Zhao X, Wang Y, Zhang X, Chen X, Xu C, Yuan ZR, Roberts AI, Zhang L, Zheng B, Wen T, Han Y, Rabson AB, Tischfield JA, Shao C, Shi Y. CCR2-Dependent Recruitment of Macrophages by Tumor-Educated Mesenchymal Stromal Cells Promotes Tumor Development and Is Mimicked by TNF $\alpha$ . *Cell Stem Cell*. 2012 Dec 7;11(6):812-24.  
Editorial by: Mantovani A. *Cell Stem Cell*. 11:730-32. 2012.
12. Shi Y\*, Su J, Roberts AI, Shou P, Rabson AB, **Ren G**. How mesenchymal stem cells interact with tissue immune responses. *Trends in Immunology* (invited review). 2012 Mar;33(3):136-43 (cover story).
13. **Ren G**, Chen X, Dong F, Li W, Ren X, Zhang Y, Shi Y. Concise review: mesenchymal stem cells and translational medicine: emerging issues. *Stem Cells Translational Medicine* (invited review). 2012 Jan;1(1):51-8 (Inaugural Issue).
14. Shi Y, Wei L, Wang Y, **Ren G**. Stem cells deployed for bone repair hijacked by T cells (preview). *Cell Stem Cell*. 2012 Jan 6;10(1):6-8.
15. **Ren G**, Roberts AI, Shi Y. Adhesion molecules: key players in Mesenchymal stem cell-mediated immunosuppression. *Cell Adhesion and Migration* (invited review). 2011 Jan-Feb;5(1):20-2.
16. Shi Y, Hu G, Su J, Li W, Chen Q, Shou P, Xu C, Chen X, Huang Y, Zhu Z, Huang X, Han X, Xie N, **Ren G**. Mesenchymal stem cells: a new strategy for immunosuppression and tissue repair. *Cell Research* (invited review). 2010 May;20(5):510-8.
17. **Ren G**, Zhao X, Zhang L, Zhang J, L'Huillier A, Ling W, Roberts AI, Le AD, Shi S, Shao C, Shi Y. Inflammatory cytokine-induced intercellular adhesion molecule-1 and vascular cell adhesion molecule-1 in mesenchymal stem cells are critical for immunosuppression. *Journal of Immunology*. 2010 Mar 1;184(5):2321-8.

18. Zhao X\*, **Ren G\*** (co-first author), Liang L, Ai PZ, Zheng B, Tischfield JA, Shi Y, Shao C. Brief report: interferon-gamma induces expansion of Lin(-)Sca-1(+)C-Kit(+) Cells. **Stem Cells**. 2010 Jan;28(1):122-6.

**As a PhD student (Sept 2004~June 2009):**

19. **Ren G**, Su J, Zhang L, Zhao X, Ling W, L'huillie A, Zhang J, Lu Y, Roberts AI, Ji W, Zhang H, Rabson AB, Shi Y. Species variation in the mechanisms of mesenchymal stem cell-mediated immunosuppression. **Stem Cells**. 2009 Aug;27(8):1954-62.
20. Das J\*, **Ren G\*** (co-first author), Zhang L, Roberts AI, Zhao X, Bothwell AL, Van Kaer L, Shi Y, Das G. Transforming growth factor beta is dispensable for the molecular orchestration of Th17 cell differentiation. **The Journal of Experimental Medicine**. 2009 Oct 26;206(11):2407-16.

Editorial by: Maxmen A. **The Journal of Experimental Medicine**. 206: 2304. 2009.

21. **Ren G**, Zhang L, Zhao X, Xu G, Zhang Y, Roberts AI, Zhao RC, Shi Y. Mesenchymal stem cell-mediated immunosuppression occurs via concerted action of chemokines and nitric oxide. **Cell Stem Cell**. 2008 Feb 7;2(2):141-50. (Featured Article)

Editorial by: Fleming HE. **Cell**. 132: 507. 2008.

Bell E. **Nature Reviews Immunology**. 8: 165. 2008.

Keating A. **Cell Stem Cell**. 2:106-108. 2008.

22. **Ren G**, Su J, Zhao X, Zhang L, Zhang J, Roberts AI, Zhang H, Das G, Shi Y. Apoptotic cells induce immunosuppression through dendritic cells: critical roles of IFN-gamma and nitric oxide. **Journal of Immunology**. 2008 Sep 1;181(5):3277-84.
23. Xu G\*, Zhang L\*, **Ren G\*** (co-first author), Yuan Z, Zhang Y, Zhao RC, Shi Y. Immunosuppressive properties of cloned bone marrow mesenchymal stem cells. **Cell Research**. 2007 Mar;17(3):240-8.

**OTHER CO-AUTHORED PUBLICATIONS**

24. Zheng H, Bae Y, Kasimir-Bauer S, Tang R, Chen J, **Ren G**, Yuan M, Esposito M, Li W, Wei Y, Shen M, Zhang L, Tupitsyn N, Pantel K, King C, Sun J, Moriguchi J, Jun HT, Coxon A, Lee B, Kang Y. Therapeutic Antibody Targeting Tumor- and Osteoblastic Niche-Derived Jagged1 Sensitizes Bone Metastasis to Chemotherapy. **Cancer Cell**, 2017 Dec 11;32(6):731-747.
25. Yang M, Liu Y, **Ren G**, Shao Q, Gao W, Sun J, Wang H, Ji C, Li X, Zhang Y, and Qu X. Increased expression of surface CD44 in hypoxia-DCs skews helper T cells toward a Th2 polarization. **Scientific Reports** 2015; Article number: 13674
26. Zheng H, Shen M, Cha YL, Li W, Wei Y, **Ren G**, Zhou T, Wang HY, Kang Y. PKD1 phosphorylation-dependent degradation of SNAIL by SCF-FBXO11 regulates epithelial-mesenchymal transition and metastasis. **Cancer Cell**, 2014 Sep 8;26(3):358-73.
27. Huang Y, Yu P, Li W, **Ren G**, Roberts AI, Cao W, Zhang X, Su J, Chen X, Chen Q, Shou P, Xu C, Du L, Lin L, Xie N, Zhang L, Wang Y, Shi Y. p53 regulates mesenchymal stem cell-mediated tumor suppression in a tumor microenvironment through immune modulation. **Oncogene**. 2014 Jul 17;33(29):3830-8.
28. Ling W, Zhang J, Yuan Z, **Ren G**, Zhang L, Chen X, Rabson AB, Roberts AI, Wang Y, Shi Y. Humanized Murine Mesenchymal Stem Cells Reveal a Critical Role for IDO in Immunity to Tumor. **Cancer Research**, 2014 Mar 1;74(5):1576-87.
29. Su J, Chen X, Huang Y, Li W, Li J, Cao K, Cao G, Zhang L, Li F, Roberts AI, Kang H, Yu P, **Ren G**, Ji W, Wang Y, Shi Y. Phylogenetic Distinction of iNOS and IDO Function in Mesenchymal Stem Cell-Mediated Immunosuppression in Mammalian Species. **Cell Death & Differentiation**. 2014 Mar;21(3):388-96.

30. Chen Q, Shou P, Zhang L, Xu C, Zheng C, Han Y, Li W, Huang Y, Zhang X, Shao C, Roberts AI, Rabson AB, **Ren G**, Zhang Y, Wang Y, Denhardt D, Shi Y. Osteopontin Plays a Critical Role in Directing Adipogenesis and Osteogenesis of Mesenchymal Stem Cells. *Stem Cells*. 2014 Feb;32(2):327-37.
31. Xu C, **Ren G**, Cao G, Chen Q, Shou P, Zheng C, Du L, Han X, Jiang M, Yang Q, Lin L, Wang G, Yu P, Zhang X, Cao W, Brewer G, Wang Y, Shi Y. MiR-155 Regulates Immune Modulatory Properties of Mesenchymal Stem Cells by Targeting TAK1-binding Protein 2. *J Biol Chem*. 2013 Apr 19;288(16):11074-9.
32. Zhang J, Roberts AI, Liu C, **Ren G**, Xu G, Zhang L, Devadas S, Shi Y. A Novel Subset of Helper T Cells Promotes Immune Responses by Secreting GM-CSF. *Cell Death & Differentiation*. 2013 Dec;20(12):1731-41.
33. Li W, **Ren G**, Huang Y, Su J, Han Y, Li J, Chen X, Cao K, Chen Q, Shou P, Zhang L, Yuan ZR, Roberts AI, Shi S, Le AD, Shi Y. Mesenchymal stem cells: a double-edged sword in regulating immune responses. *Cell Death & Differentiation*. 2012 Sep;19(9):1505-13.
34. Shao Q, Ning H, Lv J, Liu Y, Zhao X, **Ren G**, Feng A, Xie Q, Sun J, Song B, Yang Y, Gao W, Ding K, Yang M, Hou M, Peng J, Qu X. Regulation of Th1/Th2 polarization by tissue inhibitor of metalloproteinase-3 via modulating dendritic cells. *Blood*. 2012 May 17;119(20):4636-44.
35. L'Huillier A, **Ren G**, Shi Y, Zhang J. A two-hit model of autoimmunity: lymphopenia and unresponsiveness to TGF- $\beta$  signaling. *Cell Mol Immunol* 2012 Sep;9(5):369-70.
36. Hu G, **Ren G**, Shi Y. The putative cannabinoid receptor GPR55 promotes cancer cell proliferation. *Oncogene* (commentary). 2011 Jan 13;30(2):139-41.
37. Yamaza T, **Ren G**, Akiyama K, Chen C, Shi Y, Shi S. Mouse mandible contains distinctive mesenchymal stem cells. *J Dent Res*. 2011 Mar;90(3):317-24.
38. Krause CD, Izotova LS, **Ren G**, Yuan ZR, Shi Y, Chen CC, Ron Y, Pestka S. Efficient co-expression of bicistronic proteins in mesenchymal stem cells by development and optimization of a multifunctional plasmid. *Stem Cell Res Ther*. 2011 Mar 14;2(2):15.
39. Xu G, Zhang Y, Zhang L, **Ren G**, Shi Y. Bone marrow stromal cells induce apoptosis of lymphoma cells in the presence of IFN $\gamma$  and TNF by producing nitric oxide. *Biochem Biophys Res Commun*. 2008 Oct 31;375(4):666-70.
40. Xu G, Zhang Y, Zhang L, **Ren G**, Shi Y. The role of IL-6 in inhibition of lymphocyte apoptosis by mesenchymal stem cells. *Biochem Biophys Res Commun*. 2007 Sep 28;361(3):745-50.
41. Shi Y, Liu CH, Roberts AI, Das J, Xu G, **Ren G**, Zhang Y, Zhang L, Yuan ZR, Tan HS, Das G, Devadas S. Granulocyte-macrophage colony-stimulating factor (GM-CSF) and T-cell responses: what we do and don't know. *Cell Research* (review). 2006 Feb;16(2):126-33.