Raghavan Chinnadurai, Ph.D.
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Academic Positions:

1. Assistant Professor of Oncology
From Oct 2019- Current,
Department of Biomedical Sciences,
Mercer University School of Medicine,
Savannah, GA. USA

2. Assistant Scientist (Honorary Fellow-University of Wisconsin Carbone Cancer Center)
From Dec 2016- Sept 2019,
Division of Hematology and Oncology, Department of Medicine,
University of Wisconsin-Madison, Madison, WI. USA

3. Instructor
From Feb 2015- Nov 2016 (Dr. Jacques Galipeau's Laboratory)
Division of Bone Marrow Transplantation, Department of Hematology and Oncology,
School of Medicine, Winship Cancer Institute,
Emory University. Atlanta, GA. USA.

4. Research Associate
From May 2012 to January 2015 (Dr. Jacques Galipeau's Laboratory)
Division of Bone Marrow Transplantation, Department of Hematology and Oncology,
School of Medicine, Winship Cancer Institute
Emory University. Atlanta, GA. USA.

Trainings and Qualifications:

1. Postdoctoral Fellowship
From May 2007 to April 2011
1. Department of Microbiology and Immunology,
2. Department of Hematology and Oncology,
Emory University, Atlanta, GA. USA.

2. PhD (Doctor of Human Biology*) *Magna Cum laude
From May 2003 to February 2007
Dept. of Virology, University Clinic of Ulm,
Ulm-89081. Germany.

3. Senior Research Fellow
From June 2001 to September 2002,
Dept. of Animal Sciences,
Bharathidasan University, Trichy, Tamil Nadu, India.

4. Master of Science in Microbiology*
June 1999 - June 2001, *First Class
Department of Microbiology, School of Life Sciences,
Bharathidasan University, Tamil Nadu, India.

Awards:

- (2016) **Winship Gala Scholar Award.** Winship Cancer Institute of Emory University, Atlanta, Georgia

- (2013) **ISCT Young Investigator Award**. International Society for Cellular Therapy (ISCT) 2013. Philadelphia, USA.

- (2013) **Young Investigator Travel Award**. American Association for the study of Liver Diseases. The Henry M. and Lillian Stratton Basic Research Single Topic Conference, *Portal Hypertension and Vascular Biology of the Liver*. Atlanta. June 7-8, 2013.

- (2009) **Young Investigator Travel Award.** 16th International Symposium on Hepatitis C Virus and Related Viruses October 3-7. Nice, France.

Postdoctoral Fellowship:

(2009) **American Liver Foundation Post Doctoral Research Fellowship.** (Thomas F. Nealon, III Postdoctoral Research Fellowship Honoring Zachery Rue). (Duration 2009-2010)

Publications:

1. Chinnadurai R*, Rajakumar A, Schneider AJ, Bushman WA, Hematti P, Galipeau J*. Potency Analysis of Mesenchymal Stromal Cells Using a Phospho-STAT Matrix Loop Analytical Approach. Stem Cells. 2019 Aug;37(8):1119-1125. doi: 10.1002/stem.3035. Epub 2019 Jun 3. PubMed PMID: 31108008; PubMed Central PMCID: PMC6729138.
   **Co-Corresponding author*

2. Chinnadurai R*, Sands J, Rajan D, Liu X, Arafat D, Das R, Anania FA, Gibson G, Kisseleva T, Galipeau J*. Molecular Genetic and Immune Functional Responses Distinguish Bone Marrow Mesenchymal Stromal Cells from Hepatic Stellate Cells. Stem Cells. 2019 Aug;37(8):1075-1082. doi: 10.1002/stem.3028. Epub 2019 May 9. PubMed PMID: 31033095.
   **Co-Corresponding author*

3. Prasanphanich AF, Johnson CT, Krasnopeyev A, Cantara S, Roach C, Gumber S, Chinnadurai R, Galipeau J, Brewster L, Prologo JD. Image-Guided Transarterial Directed Delivery of Human Mesenchymal Stem Cells for Targeted Gastrointestinal Therapies in a Swine Model. J Vasc Interv Radiol. 2019 Jul;30(7):1128-1134.e5. doi: 10.1016/j.jvir.2018.09.034. Epub 2019 Mar 6. PubMed PMID: 30852052; PubMed Central PMCID: PMC6589393.

4. Zhang Z, Wilson NA, Chinnadurai R, Panzer SE, Redfield RR 3rd, Reese SR, Galipeau J, Djamali A. Autologous Mesenchymal Stromal Cells Prevent Transfusion-elicited Sensitization and Upregulate Transitional and Regulatory B Cells. Transplant Direct. 2018 Aug 27;4(9):e387. doi: 10.1097/TXD.0000000000000827. eCollection 2018 Sep. PubMed PMID: 30234156; PubMed Central PMCID: PMC6133404.

5. Chinnadurai R, Rajan D, Qayed M, Arafat D, Garcia M, Liu Y, Kugathasan S, Anderson LJ, Gibson G, Galipeau J. Potency Analysis of Mesenchymal Stromal Cells Using a Combinatorial Assay Matrix Approach. Cell Rep. 2018 Feb 27;22(9):2504-2517. doi: 10.1016/j.celrep.2018.02.013. PubMed PMID: 29490284; PubMed Central PMCID: PMC5855117.

6. Lewis HC, Chinnadurai R, Bosinger SE, Galipeau J. The IDO inhibitor 1-methyl tryptophan activates the aryl hydrocarbon receptor response in mesenchymal stromal cells. Oncotarget. 2017 Aug 10;8(54):91914-91927. doi: 10.18632/oncotarget.20166. eCollection 2017 Nov 3. PubMed PMID: 29190885; PubMed Central PMCID: PMC5696151.

7. Rajan D, Chinnadurai R, O'Keefe EL, Boyoglu-Barnum S, Todd SO, Hartert TV, Galipeau J, Anderson LJ. Protective role of Indoleamine 2,3 dioxygenase in Respiratory Syncytial Virus associated immune response in airway epithelial cells. Virology. 2017 Dec;512:144-150. doi: 10.1016/j.virol.2017.09.007. Epub 2017 Sep 28. PubMed PMID: 28963880; PubMed Central PMCID: PMC5653408.

8. Chinnadurai R, Rajan D, Ng S, McCullough K, Arafat D, Waller EK, Anderson LJ, Gibson G, Galipeau J. Immune dysfunctionality of replicative senescent mesenchymal stromal cells is corrected by IFNγ priming. Blood Adv. 2017 Apr 25;1(11):628-643. doi: 10.1182/bloodadvances.2017006205. PubMed PMID: 28713871; PubMed Central PMCID: PMC5507374.

9. Stenger EO[#], Chinnadurai R[#], Yuan S, Garcia M, Arafat D, Gibson G, Krishnamurti L, Galipeau J. Bone Marrow-Derived Mesenchymal Stromal Cells from Patients with Sickle Cell Disease Display Intact Functionality. Biol Blood Marrow Transplant. 2017 May;23(5):736-745. doi: 10.1016/j.bbmt.2017.01.081. Epub 2017 Jan 26. PubMed PMID: 28132869; PubMed Central PMCID: PMC5390328.
[#] Equal Contribution

10. Ng S, Deng J, Chinnadurai R, Yuan S, Pennati A, Galipeau J. Stimulation of Natural Killer Cell-Mediated Tumor Immunity by an IL15/TGFβ-Neutralizing Fusion Protein. Cancer Res. 2016 Oct 1;76(19):5683-5695. Epub 2016 Aug 3. PubMed PMID: 27488533; PubMed Central PMCID: PMC5050108.

11. Dhere T, Copland I, Garcia M, Chiang KY, Chinnadurai R, Prasad M, Galipeau J, Kugathasan S. The safety of autologous and metabolically fit bone marrow mesenchymal stromal cells in medically refractory Crohn's disease - a phase 1 trial with three doses. Aliment Pharmacol Ther. 2016 Sep;44(5):471-81. doi: 10.1111/apt.13717. Epub 2016 Jul 7. PubMed PMID: 27385373.

12. Chinnadurai R, Copland IB, Garcia MA, Petersen CT, Lewis CN, Waller EK, Kirk AD, Galipeau J. Cryopreserved Mesenchymal Stromal Cells Are Susceptible to T-Cell Mediated Apoptosis Which Is Partly Rescued by IFNγ Licensing. Stem Cells. 2016 Sep;34(9):2429-42. doi: 10.1002/stem.2415. Epub 2016 Jul 4. PubMed PMID: 27299362; PubMed Central PMCID: PMC5016228.

13. Hong Y, Manoharan I, Suryawanshi A, Shanmugam A, Swafford D, Ahmad S, Chinnadurai R, Manicassamy B, He Y, Mellor AL, Thangaraju M, Munn DH, Manicassamy S. Deletion of LRP5 and LRP6 in dendritic cells enhances antitumor immunity. Oncoimmunology. 2015 Dec 14;5(4):e1115941. eCollection 2016 Apr. PubMed PMID: 27141399; PubMed Central PMCID: PMC4839371.

14. Prologo JD, Hawkins M, Gilliland C, Chinnadurai R, Harkey P, Chadid T, Lee Z, Brewster L. Interventional stem cell therapy. Clin Radiol. 2016 Apr;71(4):307-11. doi: 10.1016/j.crad.2016.01.005. Epub 2016 Feb 10. Review. PubMed PMID: 26874660.

15. Chinnadurai R, Ng S, Velu V, Galipeau J. Challenges in animal modelling of mesenchymal stromal cell therapy for inflammatory bowel disease. World J Gastroenterol. 2015 Apr 28;21(16):4779-87. doi: 10.3748/wjg.v21.i16.4779. Review. PubMed PMID: 25944991; PubMed Central PMCID: PMC4408450.

16. Chinnadurai R, Copland IB, Ng S, Garcia M, Prasad M, Arafat D, Gibson G, Kugathasan S, Galipeau J. Mesenchymal Stromal Cells Derived From Crohn's Patients Deploy Indoleamine 2,3-dioxygenase-mediated Immune Suppression, Independent of Autophagy. Mol Ther. 2015 Jul;23(7):1248-1261. doi: 10.1038/mt.2015.67. Epub 2015 Apr 22. PubMed PMID: 25899824; PubMed Central PMCID: PMC4817795.

17. Thapa M, Chinnadurai R, Velazquez VM, Tedesco D, Elrod E, Han JH, Sharma P, Ibegbu C, Gewirtz A, Anania F, Pulendran B, Suthar MS, Grakoui A. Liver fibrosis occurs through dysregulation of MyD88-dependent innate B-cell activity. Hepatology. 2015 Jun;61(6):2067-79. doi: 10.1002/hep.27761. Epub 2015 Mar 25. PubMed PMID: 25711908; PubMed Central PMCID: PMC4441566.

18. Chinnadurai R, Garcia MA, Sakurai Y, Lam WA, Kirk AD, Galipeau J, Copland IB. Actin cytoskeletal disruption following cryopreservation alters the biodistribution of human mesenchymal stromal cells in vivo. Stem Cell Reports. 2014 Jun 6;3(1):60-72. doi: 10.1016/j.stemcr.2014.05.003. eCollection 2014 Jul 8. PubMed PMID: 25068122; PubMed Central PMCID: PMC4110775.

19. Chinnadurai R, Galipeau J. Defining mesenchymal stromal cells responsiveness to IFNγ as a surrogate measure of suppressive potency. Inflammation and regeneration. 2014 September; 34(4):168. doi: Rec.6/10/2014, Acc.8/18/2014, pp168-175.

20. Chinnadurai R, Copland IB, Patel SR, Galipeau J. IDO-independent suppression of T cell effector function by IFN-γ-licensed human mesenchymal stromal cells. J Immunol. 2014 Feb 15;192(4):1491-501. doi: 10.4049/jimmunol.1301828. Epub 2014 Jan 8. PubMed PMID: 24403533.

21. Chinnadurai R, Waller EK, Galipeau J, Nooka AK. From single nucleotide polymorphisms to constant immunosuppression: mesenchymal stem cell therapy for autoimmune diseases. Biomed Res Int. 2013;2013:929842. doi: 10.1155/2013/929842. Epub 2013 Nov 19. Review. PubMed PMID: 24350294; PubMed Central PMCID: PMC3852726.

22. Chinnadurai R, Velazquez V, Grakoui A. Hepatic transplant and HCV: a new playground for an old virus. Am J Transplant. 2012 Feb;12(2):298-305. doi: 10.1111/j.1600-6143.2011.03812.x. Epub 2011 Nov 1. Review. PubMed PMID: 22044693.

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24. Münch J, Rücker E, Ständker L, Adermann K, Goffinet C, Schindler M, Wildum S,Chinnadurai R, Rajan D, Specht A, Giménez-Gallego G, Sánchez PC, Fowler DM,Koulov A, Kelly JW, Mothes W, Grivel JC, Margolis L, Keppler OT, Forssmann WG,Kirchhoff F. Semen-derived amyloid fibrils drastically enhance HIV infection. Cell. 2007 Dec 14;131(6):1059-71. PubMed PMID: 18083097.

25. Münch J, Ständker L, Adermann K, Schulz A, Schindler M, Chinnadurai R,Pöhlmann S, Chaipan C, Biet T, Peters T, Meyer B, Wilhelm D, Lu H, Jing W, Jiang S, Forssmann WG, Kirchhoff F. Discovery and optimization of a natural HIV-1 entryinhibitor targeting the gp41 fusion peptide. Cell. 2007 Apr 20;129(2):263-75.PubMed PMID: 17448989.

26. Chinnadurai R, Rajan D, Münch J, Kirchhoff F. Human immunodeficiency virus type 1 variants resistant to first- and second-version fusion inhibitors and cytopathic in ex vivo human lymphoid tissue. J Virol. 2007 Jun;81(12):6563-72. Epub 2007 Apr 11. PubMed PMID: 17428857; PubMed Central PMCID: PMC1900115.

27. Chinnadurai R, Münch J, Dittmar MT, Kirchhoff F. Inhibition of HIV-1 group M and O isolates by fusion inhibitors. AIDS. 2005 Nov 4;19(16):1919-22. PubMed PMID: 16227804.

28. Chinnadurai R, Münch J, Kirchhoff F. Effect of naturally-occurring gp41 HR1variations on susceptibility of HIV-1 to fusion inhibitors. AIDS. 2005 Sep 2;19(13):1401-5. PubMed PMID: 16103771.

Patents:

United States PCT/US2017/021523
Title: IFN Gamma Prelicensing Rescues Survival and Immunosuppressive Properties of Thawed MSCs from Cryopreservation
Ref: 16077 PROV (CSP)
Inventors: Jacques Galipeau and Raghavan Chinnadurai

Active Research Support:

WES-Leukemia Research Foundation (07/01/18-06/30/20) (Chinnadurai, PI)
IFNγ primed donor Mesenchymal Stromal cells to mitigate Graft Vs Host Disease
Role: Principal Investigator

Membership

- International Society for Cell Therapy
- American Society for Gene and Cell Therapy