Suparna Dutt, PhD

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Division of Immunology and Rheumatology
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Permanent Resident of USA

Education

PhD in Biochemistry (2000), University of Delhi, New Delhi, India.
MS in Biochemistry (1991), University of Calcutta, Calcutta, India.
BS (Chemistry) (1988), University of Calcutta, Calcutta, India.

Research Experience

Scientist (September 2005 – present): Department of Medicine, Division of Immunology and Rheumatology, **Stanford University**, California.

Postdoctoral Fellow (May 2002- August 2005) : Department of Medicine, Division of Immunology and Rheumatology, **Stanford University,** California. (Advisor: Dr. Samuel Strober)

Postdoctoral Fellow (August 2000- April 2002): Department of Medicine, Division of Infectious Diseases, **Stanford University**. (Advisor, Dr. Mark Holodniy)

Research Fellow (June 1999- November 1999): **Psoriasis Research Institute**, (Affiliated to Department of Dermatology, **Stanford University)** Palo Alto, California, (Advisor Dr. Eugene Farber).

Junior and Senior Research Fellow (March 1994 - February 1999): Department of Biochemistry, **University of Delhi**, New Delhi, India. (Advisor, Dr. Prahlad C Ghosh).

Junior Research Fellow (August 1991 - February 1994) Department of Biochemistry, **Bose Institute**, Calcutta, India .

Research Interests

Cancer Immunotherapy
Tumor Immunology
Bone Marrow Transplantation

Publications

Dutt S*, Atallah MB, Minamida Y, Filatenkov A, Jensen KP, Iliopoulou BP, Tamosiuniene R, Waters J, Engleman EG and Strober S. Accelerated, but not conventional, radiotherapy of murine B-cell lymphoma induces potent T cell–mediated remissions **(2018**). Blood Advances 2:2568-2580.
*** Corresponding Author**

Rajendran V, Ilamathi H, **Dutt S**, Lakshminarayana TS, Ghosh PC (**2018)**. Chemotherapeutic Potential of Monensin as an Anti-microbial Agent. Current Topics in Medicinal Chemistry. 18(22):1976-1986

Rajendran V, Hasan GM, Kumar N, **Dutt S**, Garg N, Tiwari P and Ghosh PC **(2016)** Therapeutic efficacy of chloroquine in long circulating liposome formulations against chloroquine-resistant *Plasmodium berghei* infection in mice. European Journal of Biomedical and Pharmaceutical Sciences 3 (11) 258-264.

Rajendran V, Rohra S, Raza M, Hasan GM, **Dutt S** and Ghosh PC. (**2015**) Stearylamine Liposomal Delivery 1 of Monensin in combination with free Artemisinin eliminates blood stages of *P. falciparum* in culture and *P. berghei* infection in murine malaria. **Antimicrobial Agents Chemotherapy** 60(3):1304-18 (* Mentored graduate student through Skype to write the manuscript based on the research that I initiated as a graduate student)

Sanyal M, Morimoto M, Baradaran-Heravi A, Choi K, Kambham N, Jensen K, **Dutt S**, Dionis-Petersen KY, Liu LX, Felix K, Mayfield C, Dekel B, Bokenkamp A, Fryssira H, Guillen-Navarro E, Lama G, Brugnara M, Lücke T, Olney AH, Hunley TE, Polat AI, Yis U, Bogdanovic R, Mitrovic K, Berry S, Najera L, Najafian B, Gentile M, Nur Semerci C, Tsimaratos M, Lewis DB, Boerkoel CF. (**2015**) Lack of IL7Rα expression in T cells is a hallmark of T-cell immunodeficiency in Schimke immuno-osseous dysplasia (SIOD). **Clinical Immunology** 161(2): 355-365.

Yonezawa A, **Dutt S**, Chester C, Kim J and Kohrt H (**2015)**. Boosting cancer immunotherapy with anti-CD137 antibody therapy. **Clinical Cancer Research** 21(14): 3113-20
(*Mentored postdoctoral fellow in A Yonezawa in Holbrook Kohrt's lab to write the manuscript)

Filatenkov A, Baker J, Mueller AM, Kenkel J, Ahn G, **Dutt S**, Zhang N, Kohrt H, Jensen K, Dejbakhsh-Jones S, Shizuru JA, Negrin R, Engleman EG and Strober S. Ablative Tumor Radiation Can Change the Tumor Immune Cell Microenvironment to Induce Durable Complete Remissions (**2015). Clinical Cancer Research** 21(16): 3727-39.

Filatenkov A, Baker J, Mueller AM, Ahn G, Kohrt H, **Dutt S**, Jensen K , Dejbakhsh-Jones S,. Negrin RS, Shizuru JA . Engleman EG and Strober S **(2014**).Treatment of 4T1 Metastatic Breast Cancer with Combined Hypofractionated Radiation and Autologous T cell Infusion. **Radiation Research**. 182(2): 163-9.

Hongo D, Tang X, **Dutt S**, Nador RG, Strober S **(2012)** Interactions between NKT cells and Tregs are required for tolerance to combined bone marrow and organ transplants **Blood** 119(6): 1581-1589.

Dutt S, Baker J, Kohrt HE, Kambham N, Sanyal M, Negrin RS, and Strober S **(2011)** $CD8^+$ $CD44^{hi}$ but not $CD4^+CD44^{hi}$ memory T cells mediate potent graft anti-lymphoma activity without GVHD. **Blood** 117(11): 3230-3239.

Kohrt HE, Mueller AMS, Baker J, Goldstein M J, Newell E, **Dutt S**, Czerwinski DK, Lowsky R, and Strober S **(2011)** Donor immunization with WT1 peptide augments anti-leukemic activity after MHC-matched bone marrow transplantation **Blood** 18(19):5319-5329.

Pillai A, George TI, **Dutt S,** Strober S. **(2009)** Host natural killer T cells induce an IL-4–dependent expansion of donor CD4+CD25+Foxp3+ Tregs that protects against graft-versus-host disease **Blood** 113(18): 4458-4467.

Dutt S, Tseng D*, Ermann J, George TI, Liu YP, Davis CR, Fathman CG, Strober S. **(2007)** Naive and memory T Cells induce different types of graft-versus-host disease. **Journal of Immunology** 179(10): 6547-6554. ***Mentee for honor's thesis.**

Pillai A, George TI, **Dutt S,** Strober S. **(2007)** Host NKT cells prevent graft-versus host disease and permit graft anti-tumor activity after bone marrow transplantation. **Journal of Immunology** 178(10): 6242-6251.

Dutt S, Ermann J, Tseng D*, Liu YP, George TI, Fathman CG, Strober S. **(2005)** L-Selectin and β_7 integrin on donor CD4 T cells are required for the early migration to host mesenteric lymph nodes and acute colitis of graft -versus -host disease. **Blood** 106(12): 4009-4015. ***Mentee for honor's thesis**

Ermann J, Hoffmann P, Edinger M, **Dutt S**, Blankenberg F, Higgins JP, Negrin RS, Fathman GC, Strober S. **(2005)** Only the $CD62L^+$ subpopulation of $CD4^+CD25^+$ regulatory T cells protects from lethal acute GVHD. **Blood** 105(5): 2220-2226.

Raychaudhuri SP, **Dutt S**, Raychaudhuri SK, Sanyal M and Farber EM. **(2001)** Severe combined immunodeficiency mouse-human skin chimeras: Unique animal model for the study of psoriasis and cutaneous inflammation. **British Journal of Dermatology** 144(5): 931-939.

Patent and Technology Licensing

Enhancement of Allogeneic Hematopoietic Stem Cell Transplantation: United Kingdom patent- GB2500161 (issued December 26, 2018)

Enhancement of Allogeneic Hematopoietic Stem Cell Transplantation: US patent- 9833477 (issued December 2017)

Enhancement of Allogeneic Hematopoietic Stem Cell Transplantation: European patent (Germany and France)- 2663332 (issued November 11, 2017)

Enhancement of Allogeneic Hematopoietic Stem Cell Transplantation: Japanese patent- 6096677 (issued February 24, 2017)

Enhancement of Allogeneic Hematopoietic Stem Cell Transplantation: US patent-9504715B2 (issued November 29, 2016**)**

Treatment of Leukemia and Lymphoma with Memory $CD8^+$ T Cell Donor Lymphocyte Infusion Therapy. (Suparna Dutt, Samuel Strober and Robert Lowsky. Patent pending China, Australia, Canada, Japan. (**Stanford Office of Technology Licensing Docket #10-305**).

Treatment of Leukemia and Lymphoma with Memory $CD8^+$ T Cell Donor Lymphocyte Infusion Therapy (Exclusive License to Medeor Therapeutics**)**

Journal Reviewer

Biology of Blood and Marrow Transplantation
Frontiers in Immunology

Clinical Trial

A Phase 2 Trial $CD8^+$ Memory T-Cells as Consolidative Therapy After Donor Non-myeloablative Hematopoietic Cell Transplant in Treating Patients With Leukemia or Lymphoma. (NCT02424968) (Based on the publication **Blood (2011)** 117(11): 3230-3239)

A Phase I Trial of CD8 Memory T-Cell Donor Lymphocyte Infusion for Relapse of Hematolymphoid Malignancies Following Matched Related Donor Allogeneic Hematopoietic Cell Transplantation (NCT01523223) (Based on the publication **Blood (2011)** 117(11): 3230-3239)

Mentoring and Teaching Experience

Mentored Stanford University **Undergraduate Student for Honor's thesis** (2004-2006).

Mentored **5 high school students** in the Center for Clinical Immunology and Internship Program at Stanford (CCIS) and School of Medicine Summer Research Program (2002-2012)

Trained **Clinical Fellows** to perform research in animal models of Graft versus Host Disease **(**2002-2009)

Overview of Bone Marrow Transplantation (class) – **Stanford SPLASH** (2012 - 2014).

Overview of Bone Marrow Transplantation (class)- **Medical School 101 - Stanford University School of Medicine** (April 2013, March 2014).

Overview of Bone Marrow Transplantation (class) **- Stanford Summer Health Careers Opportunity Program (SSHCOP) Stanford University School of Medicine** (July 2014).

Overview of Bone Marrow Transplantation (class). **Stanford Explore - Stanford University School of Medicine** (July 2013)

Tutor (volunteer) at Department of English Language Learning (ELL) at **Henry M Gunn High School**, Palo Alto, CA (2013-2014).

Advisor for **Youth Congressional Award** (Mentee: student, Lynbrook High School, San Jose, CA) (2014).

Judge at Synopsys Championship Science Fair (2014), San Jose, CA.

Co-Director, High School Summer Research Program at Molecular Medicine Research Institute, Sunnyvale, California (2014, 2015).

Dutt S Immunoassays in Bone marrow transplantation: A class for master's students in Department of Zoology, **West Bengal State University**, India **(**January 2015).

Immunotherapy –The future of cancer treatment (lecture) - Stanford University Medical School Residency Program (January 2015).

Stanford Summer Community College Premedical Program, Center of Excellence in Diversity in Medical Education, **Stanford University School of Medicine**. Course: Self-directed Research Class **(**July 2015, July 2016)

Cancer Therapy from Mice to Man- A lecture for animal care staff and technicians, Stanford Veterinary Service Center (May 2017).

*Took a course in classroom teaching – Teaching and Learning in Higher Education (CTL-297X, Winter quarter 2012), Stanford University, School of Education (Prof Tom Ehrlich JD)***.**

Doctoral Thesis

Studies on liposomal monensin and its application potential (2000). University of Delhi, Delhi, India.

Scholarships / Fellowships / Awards

Welcome Trust Award for Participation in the Second Global Meet on Parasitic Diseases (August 1997), Hyderabad, India.

Junior and Senior Research Fellowships (April 1994 - February,1999) University Grants Commission, **Government of India**.

Junior Research Fellowship (August, 1991 - March, 1994) Council of Scientific and Industrial Research, **Government of India**.

National Scholarship (1985), Ministry of Human Resources Development, **Government of India**.

Invited talks / lectures

Dutt S (January 2015) Immunoassays in Bone marrow transplantation: Department of Zoology, **West Bengal State University**, India.

Dutt S (December 2014) Translating Bone Marrow Transplantation from Bench to Bedside: **Society for Systems Biology & Translational Research**, Kolkata, India.

Dutt S (December 2014) Memory CD8 T cells in Hematopoietic Cell Transplantation from Bench to Bedside. Department of Hematology, **Tata Medical Center**, Kolkata, India.

Dutt S (June 2013) Memory CD8 T cells in Hematopoietic Cell Transplantation. Department of Medicine/Division of Hematology & Oncology, **University of Missouri School of Medicine**, Columbia, MO.

Dutt S (January 2013) T cell subsets in Hematopoietic Cell Transplantation. Department of Medicine / Division of Hematology & Oncology, **University of Illinois Medical School**, Chicago, IL.

Dutt S (December 2011) Strategies to prevent Graft versus Host Disease (GVHD) in allogeneic bone marrow transplantation (BMT): From Bench to Bedside. Department of Zoology, **West Bengal State University**, Kolkata, India.

Dutt S (December 2006) Allosensitized Memory $CD4^+$ T cells induce chronic graft-versus-host disease. **48th Annual Meeting of American Society of Hematology**: Experimental Transplantation: Advances in Graft-Versus-Host Disease (GVHD) Pathophysiology, Orlando, FL.

Selected scientific presentations at conferences

Dutt S, Baker J, Kambham N, Kohrt Holbrook, Negrin R, Strober S (2009) Memory phenotype $CD8^+$ T cells are superior to naive $CD8^+$ T cells in separating graft anti-tumor activity from GVHD after bone marrow transplantation; application to DLI. Nov 2009; 51st Annual Meeting Of American Society Of Hematology, December 2009. **Blood** 114: 2452.

Pillai A, **Dutt S**, George TI and Strober S. (2007) An immunoregulatory network of Natural Killer T Cells and $CD4^+CD25^+Foxp3^+$ T Cells protects against graft-versus-host Disease. 7th Annual Meeting of Federation of Clinical Immunologists (FOCIS), San Diego. **Clinical Immunology**, 123, Supplement 2007 ,S74.

Pillai A, **Dutt S**, George TI and Strober S (2007) Interaction between host Natural Killer T Cells and Donor $CD4^+CD25^+$ T_{reg} cells protects against GVHD after TLI/ATS host conditioning and bone marrow transplantation.2007 BMT Tandem Meetings, Keystone, Colorado. **Biology of Blood and Marrow Transplantation,** 13 (2): 116-116 319 Suppl 2.

Pillai A, **Dutt S**, George TI and Strober S (2006) Interaction between host Natural Killer T Cells and donor $CD4^+CD25^+$ T_{reg} cells protects against GVHD after TLI/ATS host conditioning and bone marrow transplantation.

Selected for oral presentation at Experimental Transplantation: Advances in Graft-Versus-Host Disease (GVHD) Pathophysiology 48th Annual Meeting of American Society of Hematology. **Blood** 108(11) Part I 136a.

Pillai A, **Dutt S** and Strober S (2006). Host invariant NKT cells mediate IL-4 dependent protection from GVHD and preserve graft anti-tumor activity.6th Annual Meeting of Federation of Clinical Immunologists (FOCIS), San Francisco. **Clinical Immunology 119, Supplement 2006, S9 .**

Dutt S, Tseng D, Ermann J, Liu YP, George TI, Fathman CG, Strober S (2005). Memory CD4 T cells induce graft versus host disease. 47th Annual Meeting of American Society of Hematology. **Blood 106(11) Part I 380a**.

Dutt S, Ermann J,Hoffmann P, Edinger M, Higgins JP, Negrin RS, Fathman GC, Strober S (2003). Only the $CD62L^+$ subpopulation of $CD4^+CD25^+$ regulatory T cells protects from lethal acute GVHD. 45th Annual Meeting of American Society of Hematology. **Blood** 102(11) 950a.

Zeng DF, Liu YP, **Dutt, S**, Li ZQ, Higgins J, Lewis DB, Strober S (2003). Different patterns of migration and expansion of blood and marrow CD4 T cells in lymphoid and non-lymphoid tissues result in a different capacity to induce Graft-vs-host Disease. 90th Anniversary Annual Meeting of the American Association of Immunologists. Denver, CO, USA. **FASEB Journal** 17(7) C59**.**

Dutt S and Ghosh PC (1998) Liposomal monensin in malaria chemotherapy. National Symposium on Vector and Vector Borne Diseases, Puri, India.

Dutt S and Ghosh PC (1998) The efficacy of liposomal monensin in the treatment of chloroquine resistant P.berghei infection in mice. The 67th Annual meeting of the Society for Biological Chemists of India. New Delhi, India.

Grant Reviewer

Gordon Moore Foundation
Rare Genomics Institute

University Service

Co-Director: Manage Animal research compliances for the laboratory (2003- present).

Public Service

Light the Night Leadership Committee Member Silicon Valley and Greater Bay Area –Leukemia and Lymphoma Society (2014, 2015)

Advisor to High School Challenge Committee for Light the Night Walk - Leukemia and Lymphoma Society (2014)

Professional Membership

American Society of Hematology (2005 – Present)
American Society of Bone Marrow Transplantation (2005 – Present)
Federation of Clinical Immunology Societies (2012-Present)