Mrinmoy Sanyal, PhD

Work address:
Department of Pediatrics, Division of Immunology
Center for Clinical Sciences Research 3240
Stanford University School of Medicine
Stanford, CA 94305-5151, USA

Home address:
724 Arastradero Road #206
Palo Alto, CA 94306 USA

Email : msanyal@stanford.edu
Website: http://www.stanford.edu/~msanyal

Phone: 650-387-7751 **(Cell)**
650-493-3974 **(Home)**

Permanent resident of USA

Education

PhD in Biochemistry (1999) All India Institute of Medical Sciences, New Delhi, India

MS in Physiology (1992) University of Calcutta, Calcutta, India

BS (Honours) Major in Physiology (1990) University of Calcutta, Calcutta, India

Research Experience

October, 2009 - Present: Academic Staff (Research), Department of Pediatrics, Division of Immunology, **Stanford University** School of Medicine.

September, 2011 - Present: Consultant, Anshin BioSolutions Inc., Santa Clara, California.

October, 2009 - August, 2010: Consultant, Juvaris BioTherapeutics Inc., Burlingame, California.

September, 2005 - August 2009: Academic Staff (Research), Department of Medicine, Division of Oncology, Stanford University School of Medicine.

September, 2000 - August, 2005: Postdoctoral Fellow, Department of Pathology, Stanford University School of Medicine, **Stanford University, USA.** Mentor: **Prof. Michael L. Cleary**

April, 1999 - August, 2000: Postdoctoral Fellow, **Psoriasis Research Institute (Affiliated to Department of Dermatology, Stanford University)** Palo Alto, California. Mentor: **Prof. Eugene M. Farber.**

August, 1993 - February, 1999: Research Fellow, Department of Biochemistry, All India Institute of Medical Sciences, New Delhi, India. Mentor: **Prof. Chandana Das.**

Technology licensing / Patents

Developed a monoclonal antibody to study the role of Pbx2 in transcriptional regulation, embryonic development, and tissue homeostasis. (**Stanford Office of Technology Licensing Reference: S01-245C; Molecular and Cellular Biology, 2004, 24:5324; Circulation Research, 2008,103:702**). (Licensed to two US biotech companies).

Publications

Baradaran-Heravi A, Cho KS, Tolhuis B, **Sanyal M**, Morozova O, Morimoto M, Elizondo LI, Bridgewater D, Lubieniecka J, Beirnes K, Myung C, Leung D, Fam HK, Choi K, Huang Y, Dionis KY, Zonana J, Keller K, Stenzel P, Mayfield C, Lücke T, Bokenkamp A, Marra MA, van Lohuizen M, Lewis DB, Shaw C,

Boerkoel CF. (2012) Penetrance of biallelic SMARCAL1 mutations is associated with environmental and genetic disturbances of gene expression. **Human Molecular Genetics**, 21(11): 2572–2587.

Monteiro MC, **Sanyal M**, Cleary ML, Sengenes C, Bouloumi. A, Dani C and Billon N. (2011) PBX1, a novel stage-specific regulator of adipocyte development. **Stem Cells** 29:1837-1848.

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

Sanyal M, Fernandez R and Levy S. Enhanced B cell activation in the absence of CD81. (2009) **International Immunology** 21(11): 1225–1237.

Luo RF, Zhao S, Tibshirani R, Myklebust JH, **Sanyal M**, Fernandez R, Gratzinger D, Marinelli RJ, Lu ZS, Wong A, Levy R, Levy S, Natkunam Y. (2010) CD81 Protein is expressed at high levels in normal germinal center B cells and in subtypes of human lymphomas. **Human Pathology** 41:271–280.

Mani M, Venkatasubrahmanyam M, **Sanyal M**, Levy S, Butte A, Weinberg K, and Jahn T. (2009) Wiskott-aldrich syndrome protein is an effector of kit signaling**. Blood** 114 (14): 2900-2908.

Stankunas K, Shang C, Twu KY, Kao SC, Jenkins NA, Copeland NG, **Sanyal M**, Selleri L, Cleary ML, Chang CP. (2008) Pbx/Meis Deficiencies Demonstrate Multigenetic Origins of Congenital Heart Disease. **Circulation Research** 103:702-709.

Sanyal M, Tung JW, Karsunky H, Zeng H, Selleri L, Weissman IL, Herzenberg LA, Cleary ML. (2007) B-cell development fails in the absence of the Pbx1 proto-oncogene. **Blood** 109(10): 4191-4199.

Yokoyama A, Wang Z, Wysocka J, **Sanyal M**, Aufiero DJ, Kitabayashi I, Herr W, Cleary ML. (2004) Leukemia proto-oncoprotein MLL forms a SETI-like histone methyltransferase complex with menin to regulate Hox gene expression. **Molecular and Cellular Biology** 24 (13): 5639-5649.

Selleri L, DiMartino J, van Deursen J, Brendolan A, **Sanyal M**, Boon E, Capellini T, Smith KS, Rhee J, Popperl H, Grosveld G and Cleary ML. (2004) The TALE homeodomain protein Pbx2 is not essential for development and long-term survival **Molecular and Cellular Biology** 24 (12): 5324-5331.

Raychaudhuri SR, **Sanyal M**, Weltman H, Kundu-Raychaudhuri S. (2004) K252a, a high-affinity nerve growth factor receptor blocker, improves psoriasis: An in vivo study using the severe combined Immunodeficient mouse-human skin model. **Journal of Investigative Dermatology** 122(3): 812-819.

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

Sanyal M, Nag TC and Das C. (2000) Localisation of nitric oxide synthase in cultured human trophoblast cells: role of nitric oxide in trophoblast proliferation and differentiation. **American Journal of Reproductive Immunology** 43 (2): 70-77.

Sengupta S, **Sanyal M,** Kochupillai V and Gupta SK. (1999) Expression of inducible and neuronal nitric oxide synthase in 20-methyl cholanthrene (20-MCA) induced fibrosarcoma. **Indian Journal of Pharmacology** 31:315-318.

Sanyal M. and Das C. (1997) Collagenase-IV in human trophoblast invasion and differentiation. **Indian Journal of Biochemistry Biophysics** 34: 220-225.

Book Chapter

Das C and **Sanyal M**, (1999) Immunomodulators in Human Trophoblast-Uterus Cross Talk: Cytokines, Growth Factors and nitric oxide. In: Reproductive Immunology (ed. S.K. Gupta) Narosa Publishing House, New Delhi; Chapter 10, pp 99-109.

Doctoral Thesis

Sanyal M, Study Of Collagenase-IV And Plasminogen Activator Activity In Human Trophoblast Cells And Control Of Trophoblast Proliferation. (Advisor: Prof. Chandana Das), 1998, Doctoral Thesis.

Professional Membership

American Physiological Society, Regular member (2000 - present)
American Society of Hematology, Active member (2005 - present)
International Society for Stem Cell Research, Active member (2005 - present)

Scholarships / Fellowships / Awards

The Herzenberg Prize, Immunology Program, Stanford University School of Medicine, for the Academic year 2004-2005 (Honorable mention)

Dean's Fellowship of Stanford University of School of Medicine (2001)

Dr. K. S. Krishnan Research Fellowship of Department of Atomic Energy, Government of India (March 1994 - February 1999). This fellowship is awarded to one person in the country per year in each discipline.

National Scholarship of Ministry of Human Resource Development, Government of India (August, 1990 - September, 1992)

Best poster award in 4th International Symposium on Biochemical roles of Eukaryotic Cell Surface Macromolecules, National Institute of Immunology, New Delhi, India. (January 1996).

Teaching and Other Public Services

Grand Award Judge for Society for Science & the Public (SSP) at the **Intel International Science and Engineering Fair** (2011).

Special Award Judge for American Physiological Society at the **Intel International Science and Engineering Fair** (2010).

Frontiers in Immunology: 2006 Stanford Immunology 317. It is an advanced level course discussing cutting edge topics and research in immunology. Topic: "What can immunologists do with embryonic stem cells?"

Stanford Immunology Program Seminar Series: Led seminar discussions with the first-year immunology graduate students.

Mentoring Biological Sciences rotation Graduate students. Topic: *In vitro* differentiation of embryonic stem cells. (Mentee: **Alper Yetil**, Stanford Cancer Biology Graduate Student).

Mentoring Clinical Fellow in Pediatrics Immunology (Mentee: **Roshni Mathew**, Clinical Fellow, Pediatric Infectious Disease).

Invited talks and lectures

West Bengal State University, Department of Zoology (India): Transcriptional control of lymphocyte development: Role of proto-oncogene Pbx1. 30th December, 2011.

Stanford University, Len Herzenberz's 80th Birthday Symphosium: Lack of IL-7 receptor alpha chain (CD127) expression in T cells is a hallmark of T-cell immunodeficiency in Schimke immuno-osseous dysplasia (SIOD). 5th November, 2011

Vanderbilt University, Department of Microbiology and Immunology: Role of Pbx1 in B cell development. 18th July, 2005.

2nd Joint Meeting International Psoriasis Symposium and European Congress on Psoriasis (San Francisco, California): Study of NGF-R positive fibers in transplanted psoriatic plaques in SCID mouse: Role of neurogenic inflammation in pathogenesis of psoriasis. 20th June, 2001.

Guwahati Medical College, Guwahati, India: **Sanyal M,** Kumar VS, Gupta S and Das C. Modulation of trophoblast functions by growth factors and cytokines: proliferation and invasion. Young Scientist Symposium on Reproductive Health Issues, May 1997.

Goa Medical College, Goa, India: Contribution of trophoblast invasiveness in embryo implantation: A key reproductive process. Young Scientist Symposium on Frontiers in Reproductive Biology, February 1996.

Indira Gandhi Medical Collage, Shimla, India **:** Plasminogen activator and its Inhibitor in trophoblast invasion and differentiation. Young Scientist Symposium on Frontiers in Reproductive Biology Research, October 1996.

Selected Presentation in Scientific Conferences

Sanyal M, Dionis KY, Baradaran-Heravi A, Dekel B, Bökenkamp A, Boerkoel CF and Lewis DB. Lack of IL-7 Receptor Alpha Chain (CD127) Expression In T Cells Is a Hallmark of T-Cell Immunodeficiency In Schimke Immuno-Osseous Dysplasia (SIOD). Blood (ASH Annual Meeting Abstracts), Nov 2010; **116**: 2767. Conference: 51st American Society of Hematology Annual Meeting and Exposition, December 3-7, 2010, Orlando, FL, USA.

Sanyal M, Fernandez R, Sagi Y, Levy S. CD81, a T cell co-stimulatory molecule, is not required for T cell development. 14th International Congress of Immunology. August 22-2, Kobe, Japan.

Sanyal M, Fernandez R, and Levy S. Enhanced B cell activation in the absence of CD81. BLOOD 112 (11): 2578, NOV 16 2008. Conference: 50th American Society of Hematology Annual Meeting and Exposition, December 6-9, 2008 San Francisco, CA, USA.

Sanyal M, Shoham T, Fernandez R, and Levy S. Absence of CD81 paradoxically results in a hyper-IgM and IgG response to T-independent antigens. BLOOD 108 (11): 488a, 1719 Part 1 NOV 16 2006. Conference: 48th Annual Meeting of the American Society of Haematology; December 9-11, 2006; Orlando, Fl, USA.

Sanyal M, Tung JW, Dejbakhsh-Jones S, Strober S , Herzenberg LA and ClearyML. The transcription factor Pbx1 is required for the development of double positive thymic T cells. Blood; November 16, 2004; v.104, no.11, p.759a Conference: 46th Annual Meeting of the American Society of Haematology; December 03-07, 2004; San Diego, CA, USA

Sanyal M, Tung JW, Herzenberg LA, Cleary ML**.** Pbx1 contributes to the development of early B-cell progenitors. Blood; November 16, 2003; v.102, no.11, p.567a. Conference: 45th Annual Meeting of the American Society of Haematology; December 06-09, 2003; San Diego, CA, USA.

Sanyal M and Cleary ML. Identification of transcriptional targets for proto-oncogene Pbx1**.** FASEB summer Research Conference on Hematological Malignancies, Vermont Academy, Vermont, 2003

Sanyal M, Prohaska SS, DiMartino J, Weissman IL and Cleary ML. (2001) Role of the Pbx1 proto-oncogene in lymphopoiesis. FASEB Summer Research Conference on Haematological Malignancies. Snowmass, Colorado, July 2001.

Sanyal M, Roychudhuri SP, Roychudhuri SK, Weltman H and Farber EM (2001) Study of NGF-R positive Fibers in Transplanted Psoriatic Plaques in SCID Mouse: Role of Neurogenic Inflammation in Pathogenesis of Psoriasis. Skin Pharmacology and Applied Skin Physiology 14 (3): 136-175. (May-June 2001).

Sanyal M and Das C. Inhibition of Collagenase-IV Inhibits Trophoblast Differentiation, 4th International Symposium on Biochemical roles of Eukaryotic Cell Surface Macromolecules, National Institute of Immunology, January 1996 , New Delhi, India. **(Received best poster award).**

References

Leonore A. Herzenberg
Professor of Genetics,
Stanford University School of Medicine,
Beckman Centre B-007, 279 Campus Drive,
Stanford CA 94305-5318
Tel: (650) 723-5054 Fax: (650) 725-8564 Email: Leeherz@darwin.stanford.edu

Cornelius Boerkoel
Associate Professor, Provincial Medical Genetics Program
University of British Columbia
Department of Medical Genetics
Children's and Women's Health Centre of BC
4500 Oak St., Rm., C234
Vancouver, B.C. V6H 3N1, Canada
Phone: 604-875-2157 Fax: 604-875-2376 Email: nboerkoel@cfri.ca

Irving Weissman
Professor of Pathology and Developmental Biology,
Director, Stanford Institute for Stem cell Biology and Regenerative Medicine
Director, Stanford Comprehensive Cancer Center
Director, Ludwig Center for Stem Cell Research,
Stanford University School of Medicine,
Institute for Stem Cell Biology & Regenerative Medicine, 265 campus Drive, Stanford, California 94305
Tel: (650) 723-6520 Fax: (650) 723-4034 Email: irv@stanford.edu
Administrator, Office of Irving L. Weissman: Linda J Quinn Email: ljquinn@stanford.edu

Michael L. Cleary
Professor of Pathology and Paediatrics,
Stanford University School of Medicine,
265 campus Drive, Stanford, CA 94305, USA
Tel: (650) 723-5471 Fax: (650) 498-6222 Email: mcleary@stanford.edu