CURRICULUM VITAE

NAME Anjana Rao

OFFICE ADDRESSLa Jolla Institute for Allergy & Immunology

9420 Athena Circle La Jolla, CA 92037

Telephone: (858) 952-7155/7161

FAX: (858) 752-6984 Email: arao@lji.org

PLACE OF BIRTH Washington, D. C., USA

EDUCATION

1970 B.Sc. Osmania University, Hyderabad, India

M.Sc. Osmania University, Hyderabad, India (Physics)
 Ph.D. Harvard University, Cambridge, MA (Biophysics)

POSTDOCTORAL TRAINING

1978-1979 Fellow in Medicine, Harvard Medical School 1979-1981 Fellow in Pathology, Harvard Medical School

ACADEMIC APPOINTMENTS

1981-1984 Instructor in Pathology, Harvard Medical School

1984-1992 Assistant Professor of Pathology, Harvard Medical School 1993-1995 Associate Professor of Pathology, Harvard Medical School

1981-2009 Board of Tutors, Department of Biochemistry and Molecular Biology, Harvard

University

1988-1995 Associate Head Tutor, Department of Biochemistry and Molecular Biology,

Harvard University

1996-2010 Professor of Pathology, Harvard Medical School 1995-2011 Senior Investigator, Immune Disease Institute

2009-2011 Program in Cellular and Molecular Medicine, Children's Hospital Boston 2010-present Professor, Division of Signaling and Gene Expression, La Jolla Institute (LJI)

2011-present Professor, Sanford Consortium for Regenerative Medicine, La Jolla Affiliate faculty appointment, Department of Pharmacology, UCSD 2011-present Faculty member, Biomedical Sciences Graduate Program, UCSD Health Sciences Immunity/Infection/Inflammation (Triple I), UCSD 2011-present Affiliate faculty appointment, San Diego State University (SDSU) Faculty member, Clinical and Translational Research Institute, UCSD

2011-present Faculty member, Institute for Genomic Medicine, UCSD

2011-present Faculty member, Bioinformatics & Systems Biology Graduate Program, UCSD

2012-present Faculty appointment, UCSD Moores Cancer Center, UCSD

AWARDS, HONOURS, NAMED LECTURESHIPS, KEYNOTE TALKS

1978-1979	Leukemia Society of America Postdoctoral Fellowship
1979-1981	Damon Runyon-Walter Winchell Postdoctoral Fellowship
1981-1983	Cancer Research Institute Postdoctoral Fellowship
1983-1985	Leukemia Society of America Special Fellow Award
1993-1998	Leukemia Society of America Scholar Award

1998	Stohlman Scholar Award, Leukemia Society of America
2000	AAI-Huang Foundation Meritorious Career Award
1999-2009	Merit Award, National Cancer Institute, National Institutes of Health
2002-2005	Sandler Award for Asthma Research
2006	Sidney Leskowitz Memorial Lecture, Tufts University, Boston, MA
2006	Ishizaka Lecture, La Jolla Institute of Allergy and Immunology
2007	Weiser Endowed lecture, University of Washington, Seattle, WA
2007	Philip Bard Endowed Lecture, Johns Hopkins University, Baltimore, MD
2007	Distinguished Lecture, American Association of Immunologists, Miami FL
2007	Cynthia Chambers Memorial Lecture, University of Massachusetts Medical School, Worcester, MA
2007-2010	NIH-appointed member, US-Japan Immunology Board
2007	Scholar Award, Juvenile Diabetes Research Foundation
2008	Director's Seminar, National Institutes of Health
2008	President's Research Seminar, Memorial Sloan-Kettering Cancer Center
2008	Elected member, National Academy of Sciences, USA
2008	Plenary (Keynote) Lecture, 2008 FASEB Meeting on Calcium and Cell
	Function, Snowmass CO
2008	Keynote speaker, NIH workshop on "miRNA and Epigenetic Regulations of the Immune Response", Bethesda, MD.
2008-2015	Visiting Professor, Chiba University, Japan
2009	Elected member, National Academy of Sciences USA
2009	Elected member, American Academy of Arts and Sciences
2009	Elected fellow, American Association for the Advancement of Science (AAAS)
2009	Elected fellow, American Society for Microbiology
2009	12 th Georges Köhler lecture, Max-Planck Institute for Immunobiology, Freiburg, Germany.
2009	Fred Alt Award for New Discoveries in Immunology, Cancer Research Institute, New York, NY
2010	Beirne B. Carter Annual Lecture, University of Virginia, Charlotte, VA
2010	Juselius Visiting Professor, Turku Centre for Biotechnology, University of Turku and Åbo Akademi University
2011	Director's seminar, Moores Cancer Center, UCSD
2012	Keynote speaker, Center for Excellence in Chromosome Biology Workshop, NIH
2012	Sir Michael Berridge lecture, European Calcium Society, 12th symposium on Calcium Binding Proteins in Health and Disease, Toulouse, France
2012	Keynote lecture, IMB conference on <i>DNA demethylation, DNA repair and Beyond</i> , Mainz, Germany
2013	Dan Campbell Memorial Lecture, Midwinter Conference of Immunologists, Asilomar, CA
2013	Keynote Lecture, FASEB conference on Signal Transduction in the Immune System, Nassau, Bahamas
2013	Plenary lecture, 2013 Calcium Signalling Gordon Research Conference, Il Ciocco, Italy
2013	Keynote lecture, Signgene conference, Frontiers in Cell Signaling and Gene Regulation, Berlin, Germany
2013	Keynote lecture, Conference on DNA methylation and demethylation, France
2014	JS & HR Blumenthal Memorial Lecture, University of Minnesota
2014	Hope Ritter Lecture, University of Georgia, Athens, GA

2015		Keynote speaker, FOCIS 2015 (Annual meeting of the Federation of Clinical Immunology Societies), San Diego, CA
		,
2016		Keynote speaker, 5 th Southeastern Immunology Symposium, Duke University
2016		Keynote speaker and Mason Guest Lecturer, Annual Cell Biology Symposium,
		University of Texas Medical Branch, Galveston, TX
2016		Keynote speaker, 11 th Symposium on Calcium Signalling in China, Zunyi, China
2016		Distinguished Hematologist Seminar Series, Yale University
2016		Outstanding Investigator Award, National Cancer Institute (1R35CA210043)
2016		Carter Lecture, 25 th Anniversary Symposium, Beirne B. Carter Center for Immunology Research, University of Virginia
2017	-	Distinguished Cancer Biology Lecture, MD Anderson Cancer Center,
		University of Texas, Houston, TX

PROFESSIONAL SOCIETIES AND ACTIVITIES

1987-present	American Association for the Advancement of Science
1990-present 1990-present	American Society for Biochemistry and Molecular Biology
2010-present	American Association of Immunologists American Association for Cancer Research
2010-present	American Society for Hematology
1995	Co-organiser (with T. Curran and D. Reinberg), American Association for
1993	Cancer Research, Special Conference 1995, "The Molecular Basis of Gene Transcription"
1996	Chair, session on "Genetic Regulatory Pathways in Lymphocytes", FASEB Summer Conference on Lymphocytes & Antibodies, Saxton's River, VT
2001	Chair, AAI Major Symposium on "Chromatin Remodeling in Immune Cells: Regulating Cell Fate and Differentiation", Experimental Biology 2001, Orlando, FL
2001	Chair, Session on "Growth control and immune regulation",
	Protein Phosphorylation and Phosphatases meeting, Marburg, Germany
2004	Co-Chair, Keystone Symposium "NFkB: Biology and Pathology"
2005-present	Board Member, International Calcium Symposia
2006, 2008	Co-Chair, ESF/Wellcome Trust Conference "Signalling to Chromatin", Hinxton, UK
2006	Co-Chair, AAI Block Symposium, AAI Annual Meeting, Boston MA
2012, 2013	Chair of the Organizing Committee, Stem Cell Meeting on the Mesa, Sanford Consortium for Regenerative Medicine, La Jolla, CA
2012-2015	Elected Council Member, American Society for Biochemistry and Molecular Biology

SCIENTIFIC ADVISORY BOARDS

1996-1997	Distinguished Visiting Scientist, Signal Pharmaceuticals, San Diego, CA (advised the Inflammation and Neurobiology groups Sept 1996 to April 1997)
1998-2000	Scientific Advisory Board, Signal Pharmaceuticals, San Diego, CA
1999-2009	Peer Review Committee, Life Sciences Research Foundation
1999-present	Scientific Advisory Council, Cancer Research Institute
2000-2005	Career Development Grant Review Subcommittee, Leukemia Society of America
2005-present	Advisory Board Member, International Calcium Symposia
2007-2013	Scientific Advisory Board, CalciMedica, San Diego, CA

2008-present	International Scientific Advisory Board, National Centre for Biological Sciences (NCBS), Bangalore, India		
2009	Scientific Advisory Board, JDRF/GNF collaboration, San Diego, CA		
2008	Keystone Symposia, Immunology Study Group		
2009-2017	Board of Scientific Advisors, Jane Coffin Childs Memorial Fund, New Haven,		
	CT		
2010-present	Health Sciences Research Council, University of California San Diego (UCSD)		
2012-present	Scientific Advisory Board, California Institute for Biomedical Research		
•	(CALIBR), San Diego, CA		
2012	Faculty Search Committee, Interdisciplinary Research Center of Biology and		
	Chemistry (IRCBC), Chinese Academy of Sciences, Shanghai		
2012	Advisor, Howard Hughes Medical Institute competition for new investigators		
2015	Participant, National Human Genome Research Institute (NHGRI) Workshop,		
	"Future Opportunities for ENCODE and Beyond"		
EDITORIAL BOARDS			
1993-1995	Associate Editor, Journal of Immunology		
1994-1999	Advisory Editor, <i>Immunology Today</i>		
1994-present	Advisory Editor, Journal of Experimental Medicine		
1998-present	Editorial Board, Immunity		
2001-2010	Faculty of 1000, Cell Biology division		
2002-2004	Board of Consulting Editors, Journal of Clinical Investigation		
2006	Editorial Board, Biology Direct (declined)		
2006	Editorial Board, European Journal of Immunology (declined)		
2007	Editorial Board, Journal of Biological Chemistry (declined)		
2008	Editor, Biochemical and Biophysical Research Communications (declined)		
2007-2012	Editorial Board, Immunological Reviews		
2008-2016	Editor, Molecular and Cellular Biology		
2010-2015	Editor, Cell Calcium		
2012-2015	Editorial Board, Current Opinion in Immunology		
2012	Board of Reviewing Editors, eLife (declined)		
2014-11-01	Editorial Board, Science Advances (declined)		
2014-	Designated Monitoring Editor, Journal of Experimental Medicine		
1980-present	Ad hoc reviewer for numerous journals (Nature and sister journals, Cell and		
·	Cell Press journals, Science and Science Signaling, several PLoS journals,		
	Genes & Development, J Clinical Investigation, J Cell Biology, J Virology, J		
	Biol Chem, Blood, Nucl Acids Res, Genome Research, Genome Biology, etc.)		
PEER REVIEW ACTIVITIES			
1993-1996	Ad hoc member, Immunobiology Study Section, NIH		
1995	Ad hoc member, American Cancer Society Scientific Advisory Committee		
1996	Reviewer, National Institutes of Aging, NIH		
1997	Reviewer, Immunological Sciences Study Section, NIH		
1997	Reviewer, Army Breast Cancer Awards		
1998	Site visit, Laboratory of Biochemistry, National Cancer		
Institute			
1995-present	Reviewer, Human Frontier Science Program Organisation		
1997-present	Reviewer, The Wellcome Trust (UK)		
1997-2001	Member, Immunobiology Study Section, NIH		
1999-2009	Peer Review Committee, Life Sciences Research Foundation		

1999-present	Scientific Advisory Council, Cancer Research Institute
2000-2005	Career Development Grant Review Subcommittee, Leukemia Society of America
2005-2009	Fellowship Review Committee, Life Sciences Research Foundation, Princeton, NJ
2001	Reviewer, Fogarty International Research Collaboration Award (FIRCA), NIH
2003-2006	National Advisory Council, NIH-NIAID
2007	Review panel, NIH-NIAID P01 grant applications
2008, 2013	Review panel, general competition for new HHMI investigators
2009	NIH Center for Scientific Review, Special Emphasis Panel, Technology
	Centers for Networks and Pathways
2009	Review committee, NIH ARRA RC2 (GO) grants
2009	Review committee, NIH Beta Cell Biology Consortium (BCBC) ARRA grants
2009-2017	Board of Scientific Advisors, Jane Coffin Childs Memorial Fund, New Haven, CT
2010-2015	Advisory Committee, Program Project Grant P01 HL107150, "Glycan Modulation of Inflammatory Responses", P.I. Ajit Varki
2011	NIH special peer review panel for unsolicited P01 program applications
2011	NIH special peer review panel, EUREKA initiative (Exceptional Unconventional Research Enabling Knowledge Acceleration)
2012	Ad hoc reviewer, CMI-A Study Section, NIH
2012	Reviewer, Translational Research Program, Leukemia and Lymphoma Society
2012	Reviewer, European Research Council, Starting and Advanced Grant Applications
2012	Reviewer, US-Israel Bi-national Science Foundation
2015	Member, Review panel, National Cancer Institute (NCI) Outstanding Investigator Award
2016	Member, Review panel, NIH Cancer and Molecular Pathobiology Study Section
2016	Member, Review panel, NIH Basic Mechanisms of Cancer Therapeutics Study Section

MAJOR COMMITTEE ASSIGNMENTS

1988-2010	Thesis Advisory Committees, Harvard Medical School
1994-1997	Executive Committee on Immunology, Harvard Medical School
1995-2010	Search Committees, Harvard Medical School
1997-2010	Immunology Graduate Committee, Harvard Medical School
1998-2000	Promotions and Reappointments Committee, Harvard Medical School
2001	Program Committee, American Association of Immunologists
2002-2005	Subcommittee of Professors (Promotions), Harvard Medical School
2009	International Program Committee, 14th International Congress of Immunology,
	Kansai, Japan
2010	International Program Committee, 15 th International Congress of Immunology,
	Rome, Italy
2010-present	Health Sciences Research Council, University of California, San Diego
2011	Program Committee, 2012 Salk-Nature-Ipsen (SNI) symposium on Biological
	Complexity (Immunity and Inflammation)
2012-2015	Council Member (elected), American Society for Biochemistry and Molecular
	Biology

2011-2014

Ы

RESEARCH FUNDING INFORMATION

Present		
1995-2019	PI	NIH Research Grant (R01 CA42471, renewed as Al109842) bZIP proteins in lymphocyte gene induction
1996-2017	PI	NIH Research Grant (R01 AI/GM40127) Signal transduction and gene induction in T lymphocytes
2012-2017	PI	NIH Research grant (R01 CA151535) Role of TET Proteins in myeloid malignancies
2011-2017	PI	NIH Research grant (R01 HL114093, NCE) Epigenomics of T cells and innate immune cells in human asthma
2012-2017	PI, Proj. 3	NIH U19 grant (U19 Al100275) LIAI Epitope validation center: characterization of allergen-specific T cells
2014-2018	Contact P	I NIH Research grant (R24 Al018564) Research Resources: Epigenomic and Transcriptomic Profiles of Human Immune Cells
2014-2017	PI	Leukemia and Lymphoma Society Translational Research Project (TRP 6464-15), Novel therapeutic strategies for peripheral T-cell lymphoma by targeting TET2 and RHOA
2014-2017	PI	NIH Research grant (R35 CA210043R01) TET enzymes as guardians of genome stability
Past (recently comp	oleted)	
2000-2011	PI	NIH Research Grant (R01 Al48213) Transcriptional mechanisms underlying
immune tolerance		,
2007-2011	PI	NIH Research Grant (R01 Al070788) Role of microRNAs in T cells and other immune/ haematopoietic
cells		
2007-2012	PI	Juvenile Diabetes Research Foundation Scholar Award (16-2007-427) Manipulating T cell responses by targeting transcription factors
2009-2012	PI	NIH Research Grant (RC1 DA028422) Chemical modulators of TET-family proteins
2010-2013	PI	NIH Research grant (RC4 Al092763) New players in immune function: identification through RNAi and micro-RNA screens
2010-2013	PI	California Institute of Regenerative Medicine RM1-01729 Generation of regulatory T cells by reprogramming
2009-2014	PI	NIH Research Grant (R01 Al084167, renewed by PG Hogan as PI) Regulators of store-operated Ca ²⁺ entry: STIM and ORAI
2009-2014	PI	NIH Research Grant (R01 Al080875) Regulation of CD45 alternative splicing by HNRPLL
1999-2014	PI	NIH Research Grant (R01 Al/GM44432) Regulated accessibility of a cytokine gene locus

Leukemia and Lymphoma Society Translational Research Project

(TRP 6187-12), Linking metabolism, epigenetic changes and cancer:

TET2, IDH and AML

		· — · – , · – · · · · · · · · · · · · · · ·
2011-2016	PI	NIH Research grant (R01 HD065812) Role of TET Proteins in ES Cell Pluripotency and Function
TEACHING CONTRIBUTION	ONS	,
1976-1978		Teaching Fellow, Department of Biochemistry and Molecular Biology, Harvard University
1981-present		Board of Tutors, Department of Biochemistry and Molecular Biology, Harvard University
1988-1995		Associate Head Tutor, Department of Biochemistry and Molecular Biology, Harvard University
1989		Lecturer, Immunology 200 (700), Harvard Medical School
1991		Lecturer, Immunology 200 (700), Harvard Medical School
1991-2008		Course Director, Immunology 217/ 204, a graduate-level seminar entitled "Signal Transduction in the immune system", Harvard Medical School
1993, 1995		Lecturer, Immunology 212, Lymphocyte Signal Transduction, Harvard Medical School
1995		Lecturer, Health Sciences and Technology 175 (Cellular and Molecular Immunology), Harvard Medical School
1995, 1998		Lecturer, Cell Biology 211a (Biology of the Cancer Cell), Harvard Medical School
1999, 2002		Instructor, Microbiology 230 (Analysis of the Biological Literature), a core course required of all incoming students in the BBS graduate program
2003, 2005		Course director, Immunology 204, a graduate-level seminar and critical reading course, Harvard Medical School
2011, 2012		Teaching faculty, BIOM 201, a graduate-level seminar course required for all first-year graduate students in the Biomedical Science (BMS) graduate program at UCSD
2012-2016		Lectures in CMM 250 and other UCSD courses
2016		Lecture in Cold Spring Harbour course on Chromatin, Epigenetics and Gene Expression
1984-present		Thesis advisor for 14 Ph.D. students
1989-present		Sponsor for > 70 postdoctoral fellows

INVITED LECTURES (2010-PRESENT)

2010

- Signalling in Cell Death, Cancer and the Immune System, Rio das Pedras, Brazil
- Keystone Symposium on Lymphocyte Activation and Gene Expression, Breckenridge, CO
- Stanford University Biochemistry Department, Palo Alto, CA
- CSH Symposium, Gene Expression and Signaling in the Immune System, Cold Spring Harbor, NY
- 2010 Experimental Biology/American Physiological Society Symposium, Anaheim, CA
- Salk Institute Seminar Series, La Jolla, CA
- Immunology Affinity Group Seminar Series, The Scripps Research Institute, La Jolla, CA
- FASEB conference on Biological Methylation, Carefree, AZ
- Gordon Research Conference on Chromatin, Bryant University, Rhode Island
- Genetics Society of America Annual Meeting, Boston, MA
- Special Seminar Series, Cancer Research UK, London Research Institute, London, UK
- 16th World Congress of Basic and Clinical Pharmacology, Copenhagen, Denmark

- 2010 Gordon Research Conference on Chromatin Structure and Function
- 4th Chiba University Global COE Symposium, Chiba, Japan
- 14th International Congress of Immunology (ICI 2010), Kobe, Japan
- Frontiers in Genomics Programme, Center for Genomic Sciences, National Autonomous University of México, Cuernavaca Campus
- Guest Speaker, Annual Retreat, University of Pennsylvania Immunology Programme
- Guest Speaker, Annual UC Irvine Immunology Fair
- Genentech postdoc-invited seminar, Genentech, South San Francisco, CA (declined)

- Student-invited speaker, Lecture Series on Epigenetics, University of Michigan, Ann Arbor
- American Association for Cancer Research Annual Meeting, Major Symposium on "DNA Methylation Profiles of Human Cancer", Orlando, CA
- Harvard Stem Cell Institute Lecture Series, Harvard Medical School and Children's Hospital Boston
- EMBO Conference on Chromatin and Epigenetics, EMBL, Heidelberg, Germany
- 9th Annual Meeting, International Society for Stem Cell Research, Toronto, Canada
- US-Japan Immunology Board meeting, Stanford University, Palo Alto, CA
- 17th International Symposium on Calcium-Binding Proteins in Health and Disease, Beijing, China
- 2011 Cold Spring Harbor Asia Conference on Infection & Immunity, Suzhou, China
- EMBO Conference on Signaling in the Immune System, Siena, Italy
- Symposium on Cancer Epigenetics, University of Pennsylvania, Philadelphia, PA
- Distinguished Lecture Series, Center for Cancer Epigenetics, University of Texas MD Anderson Cancer Center, Houston, TX
- 2011 Annual meeting, American Society for Hematology, San Diego, CA
- Director's seminar, Moores Cancer Center, UCSD
- Keystone Meeting on Immunological Memory, Persisting Microbes and Chronic Disease, Banff, Canada (Matthew Pipkin spoke instead)
- Protein Phosphatase Session, 84th Annual meeting, Japanese Biochemical Society, Kyoto, Japan (declined)
- Cold Spring Harbor (CSH) Asia conference on Infection and Immunity, Suzhou, China (declined)
- Center for Inflammation and Cancer, University of Texas M.D. Anderson Cancer Center, Houston, TX (declined)
- 1st International Meeting, Ion Channel Signaling Mechanisms: from Basic Science to Clinical Applications, Marrakesh, Morocco (Sonia Sharma spoke instead)

2012

- Keystone Meeting on Epigenomics, Keystone, CO
- Keystone Meeting on Th17 cells in Health and Disease, Keystone, CO
- Salk Institute seminar series
- Special Seminar, Cancer Research UK, London UK
- Science@theInterface Symposium on Nucleic Acid Chemistry and Biological Regulation, Institute for Biophysical Dynamics, University of Chicago
- Immunology and Microbial Science Affinity Group, The Scripps Research Institute
- Plenary Session, Genomics and Epigenomics of Stem Cells, ISSCR Tenth Annual Meeting, Yokohama, Japan, June 13 16, 2012
- Keynote speaker, Center for Excellence in Chromosome Biology Workshop, National Institutes of Health, Bethesda, MD
- 244th Annual Meeting, American Chemical Society, Session on Genome Instability: Mechanisms of Epigenetic Modification, Philadelphia, PA
- FASEB Summer conference on Biological Methylation, Snowmass, CO

- 10th EMBL Conference on Transcription and Chromatin, Heidelberg, Germany
- -2012 Salk Meeting on Post-translational Regulation of Cell Signalling, San Diego, CA
- Sir Michael Berridge keynote lecture, European Calcium Society, 12th symposium on Calcium Binding Proteins in Health and Disease, Toulouse, France
- SFB 894 Symposium on Calcium Signalling: Molecular Mechanisms and Integrative Functions, Homburg, Germany
- 2012 Abcam conference, Epigenetics and Stem Cells, Cambridge, UK
- 2012 IMB conference on DNA demethylation, DNA repair and Beyond, Mainz, Germany (keynote)
- Herbert Irving Comprehensive Cancer Center (HICCC) Annual Symposium on Advances in Cancer Research (Epigenetics and Cancer), Columbia University (declined)
- Boehringer-Ingelheim/IMP meeting on Epigenetic Regulation in Disease, Gumpoldskirchen, Austria (declined)
- Keystone Meeting on NF□B Signalling and Biology: From Bench to Bedside, Whistler, CA (declined)
- 2012 Annual Meeting, American Association for Cancer Research (declined)
- Genentech, Immunology/ Oncology Group seminar (declined)
- 2012 Cold Spring Harbor meeting on Gene Expression and Signaling in the Immune System (declined)
- Lectures in Life Sciences (LLS) seminar, Northwestern University Medical School (declined)
- Harvard Medical School Immunology Seminar series (declined)
- Inaugural Cold Spring Harbor Meeting on Chromatin and Epigenetics (declined)
- Third International Conference on Regulatory T Cells/ Th Subsets and Clinical Application in Human Diseases, Shanghai, China (declined)
- 2nd Cold Spring Harbor Asia meeting "Epigenetics, Chromatin & Transcription", Suzhou, China (declined)
- 2012 Koch Institute Symposium on Epigenetics, Plasticity, and Cancer, MIT, Boston, MA (declined)
- XIX Wilsede Meeting on Leukemia and Cancer, Wilsede, Germany (declined)
- Signalling and Gene Expression in the Immune System, BioCity, Turku (declined)
- 27th Aspen Cancer Conference on Mechanisms of Toxicity, Carcinogenesis, Cancer Prevention and Cancer Therapy, Aspen, CO (declined)
- Biochemical Society Annual Symposium, Epigenetic Mechanisms in Development and Disease, University of Leeds, UK (declined)
- 42nd Annual Scientific Meeting of the Australasian Society for Immunology, Melbourne, Australia (declined)
- Symposium on Cellular and Molecular Biology of Calcium Signalling, Barcelona, Spain (Patrick Hogan spoke instead)

- Dan Campbell Memorial Lecture, Midwinter Conference of Immunologists, Asilomar, CA
- Immunology Seminar Series, Stanford University, CA
- Sixth Annual Pfizer Frontiers in Human Disease Symposium, Epigenetics and Human Disease
- Plenary Symposium on Epigenetics, 2013 Annual Meeting, American Association for Cancer Research
- 78th Cold Spring Harbor Symposium on Immunity and Tolerance, Cold Spring Harbor, NY
- Seminar, Microbiology and Immunology Department, Columbia University
- Keynote Lecture, FASEB conference on Signal Transduction in the Immune System, Nassau, Bahamas
- Keynote lecture, Signgene conference, *Frontiers in Cell Signaling and Gene Regulation*, Berlin, Germany
- Plenary lecture, 2013 Calcium Signalling Gordon Research Conference, Il Ciocco, Italy
- FASEB summer conference on Molecular Mechanisms of Lymphocyte Development and Function, Snowmass, CO
- Keynote lecture, Conference on DNA methylation and demethylation, France
- Max Planck Institute of Biochemistry Distinguished Visitor Lecture Series, Martinsreid, Germany

- The EMBO Meeting 2013, Workshop on Stem cell signalling
- Keynote lecture, *Nature* and Ludwig Institute for Cancer Research conference, *From Nuclear Reprog*ramming to the Cancer Genome: Molecular Mechanisms for Cell Fate Transformation, Oxford, UK
- 35th Annual Symposium, Sanford-Burnham Medical Research Institute, *Epigenetics: Development and Disease*, San Diego, CA
- Seminar, Immunology Program, UCSF (declined)
- Keystone Meeting on Hematopoiesis, Steamboat Springs, CA (declined)
- Keystone Meeting on Stem Cell Regulation in Homeostasis and Disease, Banff, Canada (declined)
- 4th International Symposium on Regulators of Adaptive Immunity, Erlangen, Germany (declined)
- Seminar, combined Immunology and Microbial Pathogenesis Program Research Seminar Series, Sloan Kettering Institute, Weill Cornell Medical College and Hospital for Special Surgery (declined)
- Seminar, Department of Microbiology and Immunology, University of Texas Health Science Center at San Antonio (declined)
- Acute Leukemias XIV, Biology and Treatment Strategies, Munich, Germany (declined)
- Frontiers in Cancer Science 2013, Singapore (declined)
- International Congress of Immunology, Rome, Italy (declined)
- Australian Epigenetics Alliance meeting, Shoal Bay, New South Wales, Australia (declined)
- Tri-I Immunology & Microbial Pathogenesis Research Seminar Series, Sloan-Kettering Institute, Weill-Cornell Medical College and Hospital for Special Surgery, New York, NY (declined)
- Keynote lecture, Annual Asia-Pacific Medical Students Symposium, Taipei, Taiwan (declined)
- Seminar, Eli & Edythe Broad Center of Regenerative Medicine & Stem Cell Research and the Jonsson Comprehensive Cancer Center (BSCRC-JCCC), UCLA (declined)

- Keystone Symposium on Chromatin Mechanisms and Cell Physiology, Obertsdorf, Germany
- 16th Annual Perspectives on Science (POS) Lecture/Dinner Series, Point Loma Nazarene University
- Major Symposium speaker, 2014 Annual Meeting, American Association for Cancer Research
- 52nd J.S. and H.R. Blumenthal Memorial Lectureship, University of Minnesota
- Immunology Lecture series, University of Alabama at Birmingham
- Eppley short course in Epigenetics, University of Nebraska Medical Center
- 2014 Symposium on Epigenetic Mechanisms in Cancer, Toronto, Canada
- 24th BioCity Symposium and 25th Anniversary Symposium of Turku Centre for Biotechnology, "*Epigenomics – from basic principles of life to human health and disease*", Turku, Finland
- 2014 Immunology Symposium, Blood Center of Wisconsin
- 2014 Hope Ritter Lecture, University of Georgia
- Keystone Symposium on Cancer Epigenetics, Santa Fe, NM (declined)
- Keystone Symposium on Stem Cells and Cancer, Banff, Canada (declined)
- 2014 CSH Symposium, Gene Expression and Signaling in the Immune System, Cold Spring Harbor, NY (declined)
- Keystone Symposium on Tumour Metabolism, Whistler, British Columbia, Canada (declined)
- Lineberger Lecture, 2014 UNC Lineberger symposium on cancer (declined)
- NIH Immunology Interest Group, Bethesda, MD (declined)
- 3rd Cold Spring Harbor Asia meeting on Epigenetics, Chromatin, and Transcription (declined)
- 2014 Chromatin Club, Strasbourg (declined)
- International Society for Stem Cell Research (ISSCR) and the Singapore Stem Cell Society, Forum on *Global Control in Stem Cells*, Singapore (declined)
- XXXIX Meeting of the Brazilian Society of Immunology (declined)
- 2014 CSH meeting, Epigenetics and Chromatin, Cold Spring Harbor, NY (declined)
- 2014 Max Planck Epigenetics meeting, Freiburg, Germany (declined)

- ComBio conference on Genome Biology, Canberra, Australia (declined)
- Karolinska Institute Inflammation and Immunology meeting, Sånga-Säby, Sweden (declined)
- International Symposium on Cellular Processing of Information, Shanghai, China (declined)
- Conference, Epigenetics: From Bench to Bedside, Athens, Greece (declined)

<u>2015</u>

- Keystone Symposium on Epigenetics and Cancer, Keystone, CO
- Recent Advances in Cancer Research Seminar Series, University of California, San Diego, CA
- National Human Genome Research Institute (NHGRI) Workshop, "Future Opportunities for ENCODE and Beyond"
- Division of Immunobiology and Center for Systems Immunology Seminar series, Cincinnati Children's Hospital Medical Center, Cincinnati, OH
- Immunology Program Seminar Series, University of California, San Francisco, CA
- Student/postdoc-invited seminar, Microbiology-Immunology seminar series, Northwestern University, Chicago, IL
- NIAID session, Hitting the Mother Lode: Mining the Data Fields, American Association of Immunologists Annual Meeting, New Orleans, LA
- Keynote talk, FOCIS (Federation of Clinical Immunology Societies) Annual meeting, San Diego, CA
- 19th International Symposium on Ca2+ and Ca2+ binding proteins in Health and Disease, Nashville, TN
- California Institute for Biomedical Research (CALIBR) Seminar series, San Diego CA
- 3rd Annual Immunogenomics Conference, HudsonAlpha Institute for Biotechnology, Huntsville, AL
- Trainee-proposed and -moderated session, *Active DNA demethylation in Human Diseases*, American Society for Human Genetics Annual Meeting, Baltimore, MD
- Wellcome Trust conference on Epigenomics of Common Diseases, Hinxton, Cambridge, UK
- Keynote talk, European Cancer Epigenetics Conference, Maastricht, Netherlands
- Keystone Symposium on DNA methylation, Keystone, CO (accepted but didn't attend)
- Epigenetics Consortium, New York Genome Center, New York, NY (declined)
- Cell Symposium on Stem Cell Epigenetics, Sitges, Spain (declined)
- Systems Biology of Stem Cells and Reprogramming (SyBoSS), *The program of early mammalian development*, Innsbruck, Austria (declined)
- Symposium on Regulation of the immune system and autoimmune diseases, Academy of Finland Center of Excellence (SyMMyS), Turku, Finland (declined)
- 6th Annual Australian Epigenetic Alliance, Hobart, Tasmania, Australia (declined)
- H Foundation Symposium on Chromatin Biology and Epigenetics of Cancers, Chicago, IL (declined)
- 2nd Center for Diagnostics and Therapeutics Symposium, Georgia State University, Atlanta, GA (declined)
- Genome Editing workshop, International Chronic Myeloid Leukemia meeting, Estoril, Portugal (declined)
- Shanghai Biotech Forum, Shanghai, China (declined)
- SyMMyS Academy of Finland Center of Excellence Symposium, Turku, Finland (declined)

<u> 2016</u>

- 12th Annual Stem Cell Symposium, UCLA Eli and Edythe Broad Center of Regenerative Medicine and Stem Cell Research, Los Angeles, CA
- 3rd Nuclear Reprogramming and the Cancer Genome conference, La Jolla, CA
- Student-invited speaker, Symposium on *Cell-fate Decisions in the Immune System*, Ludwig-Maximilians-Universität, Munich, Germany
- Keystone Symposium on Chromatin and Epigenetics, Whistler, British Columbia, Canada
- 2016 Cold Spring Harbor meeting on Gene Expression and Signalling in the Immune System, Cold Spring Harbor, NY
- 2016 Mason Guest Lecturer, University of Texas Medical Branch, Galveston, Texas

- Keynote speaker, 5th Southeastern Immunology Symposium, Duke University
- FASEB Summer Research Conference on Biological Methylation, Lisbon, Portugal
- International Conference on *Calcium Signalling: from stores to channels* (in honour of James Putney), Chapel Hill, NC
- Distinguished Hematologist Seminar Series, Yale University
- Carter Lecture, 25th Anniversary Symposium, Beirne B. Carter Center for Immunology Research, University of Virginia
- 3rd ShanghaiTech-SIAIS BioForum, *Advances and Perspectives in Integrative Biology of Cellular Processes*, Shanghai, China
- International Congress of Immunology, Melbourne, Australia (declined)
- Harvard Medical School Immunology Seminar series, Boston, MA (declined)
- Massachusetts General Hospital Immunology Seminar series, Boston, MA (declined)
- Presidential Symposium, 2016 Annual Meeting, International Society for Stem Cell Research (ISSCR), San Franscisco, CA (declined)
- FASEB Summer Research Conference on Calcium and Cell Function, Lisbon, Portugal (declined)
- EMBO/EMBL Symposium on *Tumour Microenvironment and Signalling*, Heidelberg, Germany (declined)
- 11th EMBO conference on Transcription and Chromatin, EMBL, Heidelberg, Germany (declined)
- Epigenomics 2016, special meeting on epigenomics and transcriptional regulation sponsored by the NIH Common Fund, Rio Grande, Puerto Rico (declined)

- 2017 FASEB meeting, Molecular Mechanisms of Lymphocyte Development and Function, Big Sky, Montana
- Distinguished Cancer Biology Lecture, MD Anderson Cancer Center, University of Texas, Houston, TX
- Harvard Medical School Program in Immunology, Boston, MA
- Biomedical Sciences Seminar Series, University of California San Francisco, San Francisco, CA
- 2017 Gordon Research conference on RNA editing, Biology and Mechanisms of RNA and DNA Modification, Ventura, CA
- 2017 Annual Meeting, Society for Leukocyte Biology, *Leukocyte memory: Health and Disease*, Vancouver, Canada
- NIEHS/NIH Symposium on Stem Cells & Epigenetics, Research Triangle Park, NC
- Inaugural conference on *Immunogenomics of Disease: Accelarating Progress to Patient Benefit*, Wellcome Genome Campus, Hinxton, UK

2018

- FASEB Summer Research Conference on Biological Methylation, Florence, Italy

BIBLIOGRAPHY

On collaborative papers where Dr. Rao is not the senior author, the names of Rao lab postdoctoral fellows involved in the work are underlined.

- 1. **Rao A**. Disposition of the Band 3 polypeptide in the human erythrocyte membrane. The reactive sulphydryl groups. *J Biol Chem* 1979; <u>254</u>: 3503-3511.
- 2. **Rao A**, Reithmeier RAF. Reactive sulphydryl groups of the Band 3 polypeptide from human erythrocyte membranes. Location in the primary structure. *J Biol Chem* 1979; 254: 6144-6150.
- 3. Reithmeier RAF, **Rao A**. Reactive sulphydryl groups of the Band 3 polypeptide from human erythrocyte membranes. Identification of the sulphydryl groups involved in Cu⁺⁺-o-phenanthroline crosslinking. *J Biol Chem* 1979; <u>254</u>: 6151-6158.

- 4. **Rao A**, Martin P, Reithmeier RAF, Cantley LC. Location of the stilbene-disulfonate binding site of the human erythrocyte anion-exchange system by resonance energy transfer. *Biochemistry* 1979; <u>18</u>: 4505-4516.
- 5. **Rao A**, Allard WJ, Hogan PG, Rosensen RS, Cantor H. Alloreactive T cell clones. Ly phenotype predicts both function and specificity for major histocompatibility complex products. *Immunogenetics* 1983; <u>17</u>: 147-165.
- Rao A, Mizel SB, Cantor H. Disparate functional properties of two Interleukin 1-responsive Lyl⁺2⁻ T cell clones: distinction of T cell growth factor and T cell replacing factor activities. *J Immunol* 1983; 130: 1743-1748.
- 7. **Rao A**, Faas SJ, Miller LJ, Riback P, Cantor H. Lysis of inducer T cell clones by activated macrophages and macrophage-like cell lines. *J Exp Med* 1983; <u>158</u>: 1243-1258.
- 8. **Rao A**, Faas SJ, Cantor H. Activation specificity of arsonate-reactive T cell clones: structural requirements for hapten recognition and comparison with monoclonal antibodies. *J Exp Med* 1984; 159: 479-494.
- 9. **Rao A**, Ko WW-P, Faas SJ, Cantor H. Binding of antigen in the absence of histocompatibility proteins by arsonate-reactive T cell clones. *Cell* 1984; <u>36</u>: 879-888.
- 10. **Rao A**, Faas SJ, Cantor H. Analogues which compete for antigen binding to an arsonate reactive T cell clone inhibit the functional response to arsonate. *Cell* 1984; <u>36</u>: 889-895.
- 11. Friedman S, Sillcocks D, **Rao A**, Faas S, Cantor H. A subset of Ly-1 inducer T cell clones activates B cell proliferation but directly inhibits subsequent IgG secretion. *J Exp Med* 1985; 161: 785-804.
- 12. Reiss CS, Greenstein JL, Crimmins MAV, Liu LLM, **Rao A**, Maziarz RT, Murre C, Burakoff SJ. Recognition of the α -1 and α -2 domains of H-2 molecules by allospecific cloned T cells. *J Immunol* 1986; 136: 2191-2194.
- 13. Tan K-N, Datlof BM, Gilmore J, Kronman A, Lee J, Maxam A, **Rao A**. The T cell receptor $V\alpha 3$ gene segment is associated with reactivity to p-azobenzenearsonate. *Cell* 1988; <u>54</u>: 247-261.
- 14. Valge V, Wong JG-P, Datlof BM, Sinskey AJ, **Rao A**. Protein kinase C is required for responses to T cell receptor ligands but not to Interleukin 2 in T cells. *Cell* 1988; 55: 101-112.
- 15. Wong JG-P, **Rao A**. Mutants in signal transduction through the T cell antigen receptor. *J Biol Chem* 1990; <u>265</u>: 4685-4693.
- 16. Nalefski E, Wong JG-P, **Rao A**. Amino acid substitutions in the first complementarity-determining region of a murine T cell receptor a chain affect antigen/MHC recognition. *J Biol Chem* 1990; <u>265</u>: 8842-8846.
- 17. Valge-Archer VE, de Villiers J, Sinskey AJ, **Rao A**. Transformation of T cells by the v-fos oncogene. *J Immunol* 1990; 145: 4355-4364.
- 18. Itoh T, **Rao A**, O'Brien D, Nghiem P, Cantor H. Limiting dilution analysis of ontogeny of self- and alloreactive thymocytes of C57BL/6 mouse. *Thymus* 1990; <u>16</u>: 89-98.
- 19. Jamieson C, McCaffrey PG, **Rao A**, Sen R. Physiological activation of T cells via the T cell receptor induces NFκB. *J Immunol* 1991; <u>147</u>: 416-420.
- 20. Rao A. Signalling mechanisms in T cells. Crit Rev Immunol 1991; 10: 495-519 (review).
- 21. Chan BMC, Wong JGP, **Rao A**, Hemler ME. T cell receptor-dependent, antigen-specific stimulation of a murine T cell clone induces a transient, VLA protein-mediated binding to extracellular matrix. *J Immunol* 1991; 147: 398-404.
- 22. McCaffrey PG, Jain J, Jamieson C, Sen R, **Rao A**. A T cell nuclear factor resembling NF-AT binds to an NF-κB site and to the conserved lymphokine promoter sequence "cytokine-1". *J Biol Chem* 1992; 267: 1864-1871.
- 23. Jain J, Valge-Archer VE, Sinskey AJ, **Rao A**. The AP-1 site at -150 bp, but not the NF-κB site, is likely to represent the major target for protein kinase C in the Interleukin-2 promoter. *J Exp Med* 1992; <u>175</u>: 853-862.

- 24. Jain J, Valge-Archer VE, **Rao A**. Analysis of the AP-1 sites in the IL2 promoter. *J Immunol* 1992; <u>148</u>: 1240-1250.
- 25. Jain J, McCaffrey PG, Valge-Archer VE, **Rao A**. Nuclear factor of activated T cells contains Fos and Jun. *Nature* 1992; <u>356</u>: 801-804.
- 26. Nalefski EA, Kasibhatla S, **Rao A**. Functional analysis of the antigen binding site on the T cell receptor α chain. *J Exp Med* 1992; <u>175</u>: 1553-1563.
- 27. Wong JGP, Kasibhatla S, Nalefski EA, **Rao A**. CD3⁻ T cells with cis- or trans-acting mutations affecting expression of T cell receptor β chain mRNA. *J Immunol* 1992; 149: 3961-3967.
- 28. McCaffrey PG, Perrino BA, Soderling TR, **Rao A**. NF-ATp, a T cell DNA-binding protein that is a target for calcineurin and immunosuppressive drugs. *J Biol Chem* 1993; <u>268</u>: 3747-3752.
- 29. Nalefski E, **Rao A**. The nature of the ligand recognised by a hapten- and carrier-specific, MHC-restricted T cell receptor. *J Immunol* 1993; <u>150</u>: 3806-3816.
- 30. Jain J, Miner Z, **Rao A**. Analysis of the preexisting and nuclear forms of NF-AT (nuclear factor of activated T cells). *J Immunol* 1993; <u>151</u>: 837-848.
- 31. Goldfeld A, McCaffrey PG, Strominger J, **Rao A**. Identification of a novel cyclosporin-sensitive element in the human tumour necrosis factor a gene promoter. *J Exp Med* 1993; <u>178</u>: 1365-1379.
- 32. Kasibhatla S, Nalefski EA, **Rao A**. Simultaneous involvement of all six predicted antigen binding loops of the T cell receptor in recognition of the MHC/antigenic peptide complex. *J Immunol* 1993; <u>151</u>: 3140-3151.
- 33. Jain J, McCaffrey PG, Miner Z, Kerppola TK, Lambert JN, Verdine GL, Curran T, **Rao A**. The T cell transcription factor NFATp is a substrate for calcineurin and interacts with the DNA-binding domains of Fos and Jun. *Nature* 1993; 365: 352-355.
- 34. McCaffrey PG, Luo C, Kerppola TK, Jain J, Badalian TM, Ho AM, Burgeon E, Lane WS, Lambert JL, Curran T, Verdine GL, **Rao A**, Hogan PG. Isolation of the cyclosporin-sensitive T cell transcription factor NFATp. *Science* 1993; <u>262</u>: 750-754.
- 35. **Rao A**. NFATp, a transcription factor required for the coordinate induction of several lymphokine genes. *Immunology Today* 1994; <u>15</u>: 274-281 (review).
- 36. Rooney JW, Hodge MR, McCaffrey PG, **Rao A**, Glimcher LH. A common factor regulates both Th1 and Th2 specific cytokine gene expression. *EMBO J* 1994; <u>13</u>: 625-633.
- 37. Jain J, Nalefski EA, McCaffrey PG, Johnson R, Spiegelman B, Papaioannou V, **Rao A**. Normal peripheral T cell function in c-fos deficient mice. *Mol Cell Biol* 1994; <u>14</u>: 1566-1574.
- 38. Loh C, Romeo C, Seed B, Bruder JT, Rapp U, **Rao A**. Association of Raf with the CD3 δ and γ chains of the T cell receptor-CD3 complex. *J Biol Chem* 1994; <u>269</u>: 8817-8825.
- 39. McCaffrey PG, Kim PK, Valge-Archer VE, Sen R, **Rao A**. Cyclosporin A sensitivity of the NF-κB site of the IL2Rα promoter in untransformed murine T cells. *Nucl Acids Res* 1994; <u>22</u>: 2134-2142.
- Goldfeld AE, Tsai E, Kincaid R, Belshaw PJ, Schreiber SL, Strominger JL, Rao A. Calcineurin mediates tumour necrosis factor-α gene expression in stimulated T and B cells. *J Exp Med* 1994; 180: 763-768.
- 41. Ho AM, Jain J, **Rao A**, Hogan PG. Expression of the T cell transcription factor NFATp in a neuronal cell line and in the murine nervous system. *J Biol Chem* 1994; <u>269</u>: 28181-28186.
- 42. McCaffrey PG, Goldfeld AE, **Rao A**. The role of NFATp in cyclosporin-sensitive TNF α gene transcription. *J Biol Chem* 1994; 269: 30445-30450.
- 43. **Rao A**. NFATp, a cyclosporin-sensitive transcription factor implicated in cytokine gene induction. *J Leuk Biol* 1995; 57: 536-542 (review).
- 44. Jain J, Burgeon E, Badalian TM, Hogan PG, **Rao A**. A similar DNA-binding motif in NFAT-family proteins and the Rel homology region. *J Biol Chem* 1995; <u>270</u>: 4138-4145.

- 45. Kuchroo VK, Byrne MC, Greenfield E, Whittiers MJ, Nalefski EA, **Rao A**, Collins M, Dorf ME.

 Transfection of TCR α-chains into suppressor and T helper hybridomas. Production of suppressor factors with predicted antigen specificity. *J Immunol* 1995; <u>154</u>: 5030-5038.
- 46. Chen L, Oakley MG, Glover JNM, Jain J, Dervan PB, Hogan PG, **Rao A**, Verdine GL. Only one of the two DNA-bound orientations of AP-1 found in solution cooperates with NFATp. *Curr Biol* 1995; <u>5</u>: 882-889.
- 47. Aramburu J, Azzoni L, **Rao A**, Perussia B. Activation and expression of the nuclear factors of activated T cells, NFATp and NFATc, in human natural killer cells: regulation upon CD16 ligand binding. *J Exp Med* 1995; 182: 801-810.
- 48. Wang DZ, McCaffrey PG, **Rao A**. The cyclosporin-sensitive transcription factor NFATp is expressed in several classes of cells in the immune system. *Ann New York Acad Sci* 1995; <u>766</u>: 182-194.
- 49. Park J, Yaseen NR, Hogan PG, **Rao A**, Sharma S. Phosphorylation of the transcription factor NFATp inhibits its DNA-binding activity in cyclosporin A-treated human B and T cells. *J Biol Chem* 1995; <u>270</u>: 20653-20659.
- 50. Jain J, Loh C, **Rao A**. Transcriptional regulation of the Interleukin 2 gene. *Curr Opin Immunol* 1995; 7: 333-342 (review).
- 51. Nalefski E, Shaw KT-Y, **Rao A**. An ion pair in class II histocompatibility complex heterodimers critical for surface expression and peptide presentation. *J Biol Chem* 1995; <u>270</u>: 22351-22360.
- 52. Shaw KT-Y, Ho AM, Raghavan A, Kim J, Jain J, Park J, Sharma S, **Rao A**, Hogan PG. Immunosuppressive drugs prevent a rapid dephosphorylation of the transcription factor NFAT1 in stimulated immune cells. *Proc Natl Acad Sci USA* 1995; 92: 11205-11209.
- 53. Tsai EY, Jain J, Pesavento PA, **Rao A**, Goldfeld AE. TNF α gene regulation in activated T cells involves ATF-2/Jun and NFATp. *Mol Cell Biol* 1996; <u>16</u>: 459-467.
- 54. Xanthoudakis S, Viola JPB, Shaw KTY, Luo C, Wallace JD, Bozza PT, Luk DC, Curran T, **Rao A**. An enhanced immune response in mice lacking the transcription factor NFAT1. *Science* 1996; <u>272</u>: 892-895.
- 55. Loh C, Shaw KTY, Carew JA, Viola JPB, Perrino BA, **Rao A**. Calcineurin binds the transcription factor NFAT1 and reversibly regulates its activity. *J Biol Chem* 1996; <u>271</u>: 10884-10891.
- 56. Luo C, Burgeon E, Carew JA, McCaffrey PG, Badalian TM, Lane WS, Hogan PG, **Rao A**. Recombinant NFAT1 (NFATp) is regulated by calcineurin in T cells and mediates the transcription of several cytokine genes. *Mol Cell Biol* 1996; <u>16</u>: 3955-3966.
- 57. Loh C, Carew JA, Kim J, Hogan PG, **Rao A**. T cell receptor stimulation elicits an early phase of activation and a later phase of deactivation of the transcription factor NFAT1. *Mol Cell Biol* 1996; <u>16</u>: 3945-3954.
- 58. Luo C, Shaw KT-Y, Raghavan A, Aramburu J, Garcia-Cozar F, Perrino BA, Hogan PG, **Rao A**. Interaction of calcineurin with a domain of the transcription factor NFAT1 that controls nuclear import. *Proc Natl. Acad Sci USA* 1996; 93: 8907-8912.
- 59. Luo C, Burgeon E, Rao A. Mechanisms of transactivation by NFAT1. J Exp Med 1996; 184: 141-147.
- 60. Luo C, Edelhoff S, Disteche C, Copeland NE, Jenkins NA, Hogan PG, **Rao A**. Normal function of the transcription factor NFAT1 in wasted mice: chromosomal localisation of the NFAT1 gene. *Gene* 1996; 180: 29-36.
- 61. **Rao A**, Luo C, Hogan PG. Transcription factors of the NFAT family: regulation and function. *Annu Rev Immunol* 1997; <u>15</u>: 707-747 (review).
- 62. Mercurio F, Zhu H, Murray BW, Shevchenko A, Bennett BL, Li J, Young D, Barbosa M, Mann M, Manning A, **Rao A**. IKK-1 and IKK-2, Cytokine-activated IkB kinases essential for NF-κB activation. *Science* 1997; <u>278</u>: 860-865.
- 63. Martinez-Martinez S, Gomez del Arco P, Armesilla AL, Aramburu J, Luo C, **Rao A**, Redondo JM. Blockade of T cell activation by dithiocarbamates involves novel mechanism of inhibition of nuclear factor of activated T cells. *Mol Cell Biol* 1997; <u>17</u>: 6437-6447.

- 64. Kiani A, Viola JPB, Lichtman AH, **Rao A**. Downregulation of IL-4 gene transcription and control of Th2 cell differentiation by a mechanism involving NFAT1. *Immunity* 1997; <u>7</u>: 849-860.
- 65. **Rao A**, Viola J, Cozar FG, Kiani A, Aramburu J, Okamura H, Macian F, Garcia-Rodriguez, C, Raghavan A, Hogan PG. Regulation of Gene Expression by Calcineurin and NFAT proteins. In: Yakura, ed. Kinases and Phosphatases in Lymphocyte and Neuronal Signaling. Tokyo: Springer-Verlag, 1997; 183-91 (review/ book chapter).
- 66. Viola JPB, **Rao A**. Role of the cyclosporin-sensitive transcription Factor NFAT1 in the allergic response. *Mem Inst Oswaldo Cruz* 1997; 92: 147-155 (review).
- 67. Viola JPB, Kiani A, Bozza PT, **Rao A**. Regulation of allergic inflammation and eosinophil recruitment in mice lacking the transcription factor NFAT1: role of IL-4 and IL-5. *Blood* 1998; <u>91</u>: 2223-2230.
- 68. Chen L, Glover JNM, Hogan PG, **Rao A**, Harrison SC. Structure of the DNA-binding domains of NFAT, Fos and Jun bound to DNA. *Nature* 1998; 392: 42-48.
- 69. Aramburu J, Cozar FG, Raghavan A, Okamura H, **Rao A**, Hogan PG. Selective inhibition of NFAT activation by a peptide spanning the calcineurin targetting site of NFAT. *Mol Cell* 1998; <u>1</u>: 627-637.
- 70. Garcia-Rodriguez C, **Rao A**. NFAT-dependent transactivation regulated by the coactivators p300/CBP. *J Exp Med* 1998; 187: 2031-2036.
- 71. Cozar FJG, Okamura H, Aramburu J, Shaw KTY, Pelletier L, Showalter R, Villafranca E, **Rao A**. Two site interaction of NFAT (nuclear factor of activated T cells) with calcineurin. *J Biol Chem* 1998; <u>273</u>: 23877-23883.
- 72. Manning AM, **Rao A**. Agents Targeting Transcription Factors. In: Gallin JI, Snyderman R, Fearon DT, Haynes BF, Nathan C, eds. Inflammation: Basic Principles and Clinical Correlates. 3rd ed. Philadelphia: Lippincott-Raven, 1998; 1159-1176 (review/ textbook chapter).
- 73. **Rao A**, Agarwal S. Long-range regulation of cytokine gene transcription. *Curr Opin Immunol* 1998; 10: 345-352 (review).
- 74. Agarwal S, **Rao A**. Modulation of chromatin structure regulates cytokine gene expression during T cell differentiation. *Immunity* 1998; 9: 765-775.
- 75. **Rao A**. Sampling the universe of gene expression. *Nat Biotechnol* 1998; <u>16</u>: 1311-1312 (commentary).
- 76. Macian F, **Rao A**. Reciprocal modulatory interaction between HIV-1 Tat and the transcription factor NFAT1. *Mol Cell Biol* 1999; <u>19</u>: 3645-3653.
- 77. Lopez-Rodriguez C, Aramburu J, Rakeman AS, **Rao A**. NFAT5, a constitutively nuclear NFAT protein that does not cooperate with Fos and Jun. *Proc Natl Acad Sci USA* 1999; <u>96</u>: 7214-7219.
- 78. Aramburu J, Yaffe MB, Lopez-Rodriguez C, Cantley LC, Hogan PG, **Rao**, **A**. Affinity-driven peptide selection of an NFAT inhibitor more selective than cyclosporin A. *Science* 1999; 285: 2129-2133.
- 79. Lopez-Rodriguez C, Aramburu J, Rakeman AS, Copeland NG, Gilbert DJ, Thomas S, Disteche C, Jenkins NA, **Rao A**.. NFAT5: The NFAT family of transcription factors expands in a new direction. *Cold Spring Harbor Symp Quant Biology* "Signaling and Gene Expression in the Immune System" 1999; 64: 517-526 (symposium proceedings chapter).
- 80. Viola JPB, **Rao A**. Molecular regulation of cytokine gene expression during the immune response. *J Clin Immunol* 1999; 19: 98-108 (review).
- 81. Agarwal S, Viola JP, **Rao A**. Chromatin-based regulatory mechanisms governing cytokine gene transcription. *J Allergy Clin Immunol* 1999; <u>103</u>: 990-999 (review).
- 82. Hogan PG, **Rao A**. Transcriptional regulation: modification by nuclear export? *Nature* 1999; <u>398</u>: 200-201 (commentary).
- 83. Abbas AK, Rao A. CD4 and CD8 T-cell subsets. The Immunologist 1999; 7:14-15 (meeting review).
- 84. Aramburu J, **Rao A**, Klee C. Calcineurin: from structure to function. *Curr Top Cell Regul* 1999; <u>6</u>: 237-294 (review/ book chapter).

- 85. Chen L, **Rao A**, Harrison SC. Signal integration by transcription-factor assemblies: Interactions of NF-AT1 and AP-1 on the IL-2 promoter. *Cold Spring Harbor Symp Quant Biol* "Signaling and Gene Expression in the Immune System" 1999; <u>64</u>: 527-531 (symposium proceedings chapter)
- 86. Agarwal S, Avni O, **Rao A**. Cell-type-restricted binding of the transcription factor NFAT1 to a distal *IL-4* enhancer in vivo. *Immunity* 2000; 12: 643-652.
- 87. Feske S, Draeger R, Peter HH, Eichmann K, **Rao A**. The duration of nuclear residence of NFAT determines the pattern of cytokine expression in human SCID T cells. *J Immunol* 2000; <u>165</u>: 297-305.
- 88. Okamura H, Aramburu J, Garcia-Rodriguez C, Viola JPB, Raghavan A, Zhang X, Qin J, Hogan PG, **Rao**, **A**. Concerted dephosphorylation of the transcription factor NFAT1 induces a conformational switch that regulates transcriptional activity. *Mol Cell* 2000; <u>6</u>: 539-550.
- 89. Macian F, Garcia-Rodriguez C, **Rao A**. Gene expression elicited by NFAT in the presence or absence of cooperative recruitment of Fos and Jun. *EMBO J* 2000; <u>19</u>: 4783-4795.
- 90. Garcia-Rodriguez C, **Rao A**. Requirement for integration of phorbol 12-myristate 13-acetate and calcium pathways is preserved in the transactivation domain of NFAT1. *Eur J Immunol* <u>30</u>: 2432-2436.
- 91. Schmidt-Weber CB, **Rao A**, Lichtman AH. 2000. Integration of TCR and IL-4 signals through STAT6 and the regulation of IL-4 gene expression. *Mol Immunol* 2000; <u>37</u>: 767-74.
- 92. Kiani A, **Rao A**, Aramburu J. Manipulating immune responses with immunosuppressive agents that target NFAT. *Immunity* 2000; <u>12</u>: 359-372 (review).
- 93. Avni O, **Rao A**. Molecular regulation of Th differentiation. *Curr Opin Immunol* 2000; <u>12</u>: 654-659 (review).
- 94. **Rao A**, Avni O. Molecular aspects of T cell differentiation. *Brit Med Bull* 2000; <u>56</u>: 969-984 (review).
- 95. Feske S, Giltnane G, Dolmetsch R, Standt L, **Rao A**. Gene regulation mediated by calcium signals in T lymphocytes. *Nature Immunol* 2001; 2: 316-324.
- 96. Kiani A, Cozar FJG, Aebischer T, Ehninger G, **Rao A**. Regulation of interferon-γ gene expression by NFAT1. *Blood* 2001; 98: 1480-1488.
- 97. Lopez-Rodriguez C, Aramburu J, Jin L, Rakeman A, Michino M, **Rao A**. Bridging the NFAT and NFκB families: NFAT5 dimerisation regulates cytokine gene transcription in response to osmotic stress. *Immunity* 2001; <u>15</u>: 47-58.
- 98. Okamura H, **Rao A**. Transcriptional regulation in lymphocytes. *Curr Opin Cell Biol* 2001; <u>13</u>: 239-243 (review).
- 99. Macian F, Lopez-Rodriguez C, **Rao A**. Partners in transcription: NFAT and AP-1. *Oncogene* 2001; 20: 2476-2489 (review).
- 100. **Rao A**. New functions for DNA-binding domains. Science STKE (Signal Transduction Knowledge Environment) 2001; www.stke.org/cgi/content/full/OC_sigtrans;2001/81/pe1 (online review).
- 101. Perkel JM, Simon MC, **Rao A**. Identification of a c-myb attenuator-binding factor. Leukemia Res 2002; 26: 179-190.
- 102. Stroud JC, Lopez-Rodriguez C, **Rao A**, Chen L. Structure of a TonEBP/ TonE complex reveals DNA encircled by a transcription factor. *Nature Struct Biol* 2002; <u>9</u>: 90-94.
- 103. Lee DU, Agarwal S, **Rao A**. Th2 lineage commitment and efficient IL-4 production involves extended demethylation of the *IL-4* gene. *Immunity* 2002; <u>16</u>: 649-660.
- 104. Macian F, Cozar FJG, Im S-H, Horton HF, Byrne MC, **Rao A**. Transcriptional mechanisms underlying lymphocyte tolerance. *Cell* 2002; <u>109</u>: 719-731.
- 105. Avni O, Lee DU, Macian F, Szabo SJ, Glimcher LH, **Rao A**. Th cell differentiation is accompanied by dynamic changes in histone acetylation of cytokine genes. *Nat Immunol* 2002; <u>3</u>: 643-651.
- 106. Jauliac S, Lopez-Rodriguez C, Shaw LM, Brown LF, **Rao A**, Toker A. The role of NFAT transcription factors in the regulation of integrin-mediated carcinoma invasion. *Nat Cell Biol* 2002; 4: 540-544.

- 107. Solymar DC, Agarwal S, Bassing CH, Alt FW, **Rao A**. A 3' enhancer in the *IL-4* gene regulates cytokine production by Th2 cells and mast cells. *Immunity* 2002; <u>17</u>: 41-50.
- 108. Monticelli S, **Rao A**. 2002. NFAT1 and NFAT2 are positive regulators of IL-4 gene transcription. *Eur J Immunol* <u>32</u>: 2971-2978.
- 109. Macian F, **Rao A**. The NFAT family of transcription factors. In *Handbook of Cellular Signalling*, Eds. Ralph Bradshaw and Edward Dennis, Academic Press 2002 (review/ book chapter).
- 110. Syken J, Macian F, Agarwal S, **Rao A**, Munger K. T1D1, a mammalian homolog of the drosophila tumor suppresor lethal (2) tumorous imaginal discs regulates activation-induced cell death in Th2 cells. *Oncogene* 2003; <u>22</u>: 4636-4641.
- 111. Jin L, Slitz P, Chen L, Macian F, **Rao A**, Hogan PG, Harrison SC. An asymmetric NFAT1 dimer on a pseudo-palindromic κB-like DNA site. *Nat Struct Biol* 2003; <u>10</u>: 807-811.
- 112. Hogan PG, Chen L, Nardone J, **Rao A**. Transcriptional regulation by calcium, calcineurin and NFAT. *Genes & Development* 2003; <u>17</u>: 2205-2232 (review).
- 113. Ansel KM, Lee DU, **Rao A**. An epigenetic view of helper T cell differentiation. *Nature Immunol* 2003; <u>4</u>: 616 –623 (review).
- 114. Feske S, Okamura H, Hogan PG, **Rao A**. Calcium/ calcineurin signalling in cells of the immune system. *Biochem Biophys Res Comm* 2003; 311: 1117-1132 (review, Special Section, review articles on calcineurin).
- 115. Lee DU, Avni O, **Rao A**. A distal enhancer in the *IFN*-γ locus revealed by genome sequence comparison. *J Biol Chem* 2004; <u>279</u>: 4802-4810.
- 116. Heissmeyer V, Macián F, Im S-H, Varma R, Feske S, Venuprasad K, Jeon M-S, Gu H, Liu Y-C, Dustin ML, **Rao A**. Calcineurin imposes T cell unresponsiveness through targeted proteolysis of signaling proteins. *Nature Immunol* 2004; <u>5</u>: 255-265.
- 117. Lopez-Rodriguez C, Antos CL, Shelton JM, Richardson JA, Lin FM, Novobrantseva T, Bronson RT, Igarashi P, **Rao A**, Olson EO. Loss of NFAT5 results in renal atrophy and lack of tonicity-responsive gene expression. *Proc Natl Acad Sci USA* 2004; <u>101</u>: 2392-2397.
- 118. Kobori M, Yang A, Dong D, Heissmeyer V, Zhu H, Jung Y-K, Angelica M, Gakadis M, **Rao A**, Sekine T, Ikegami F, Yuan C, Yuan J. Wedelolactone suppresses LPS-induced caspase-11 expression by directly inhibiting the IKK complex. *Cell Death Differ* 2004; <u>11</u>:123-130.
- 119. Okamura H, Garcia-Rodriguez C, Martinson H, Qin J, Virshup DM, **Rao A**. A conserved docking motif for CK1 binding controls the nuclear localization of NFAT. *Mol Cell Biol* 2004; <u>24</u>: 4184-4195.
- 120. Lee DU, **Rao A**. Molecular analysis of a locus control region in the Th2 cytokine gene cluster: a target for STAT6 but not GATA3. *Proc Natl Acad Sci USA* 2004; <u>101</u>: 16010-16015.
- 121. Ansel KM, Greenwald RJ, Agarwal S, Bassing CH, Monticelli S, Interlandi J, Djuretic IM, Lee DU, Sharpe AH, Alt FW, **Rao A**. Deletion of a conserved *II4* silencer impairs T helper type 1-mediated immunity. *Nature Immunol* 2004; <u>5</u>: 1251-1259.
- 122. Ikeda F, Nishimura R, Matsubara T, Tanaka S, Inoue J-I, Reddy SV, Hata K, Yamashita K, Hiraga T, Watanabe T, Kukita T, Yoshioka K, **Rao A**, Yoneda T. Critical roles of c-Jun signaling in regulation of NFAT family and RANKL-regulated osteoclast differentiation. *J Clin Invest* 2004; 114: 475-484.
- 123. Heissmeyer V, **Rao A**. E3 ligases in T cell anergy:turning immune responses into tolerance. *Science STKE* 2004; <u>241</u>: 1-5 <u>www.stke.org/cgi/content/full/OC_sigtrans</u> DOI: 10.1126/stke.2412004pe29 (online review).
- 124. Im S-H, Hueber A, Monticelli S, Kang K-H, **Rao A**. Chromatin-level regulation of the IL10 gene in T cells. *J Biol Chem* 2004; 279: 46818-46825.
- 125. Roehrl MHA, Kang S, Aramburu J, Wagner G, **Rao A**, Hogan PG. Selective inhibition of calcineurin-NFAT signaling by blocking protein-protein interaction with small organic molecules. *Proc Natl Acad Sci USA* 2004; 101: 7554-7559.

- 126. Monticelli S, Solymar DC, **Rao A**. Role of NFAT proteins in *IL13* gene transcription in mast cells. *J Biol Chem* 2004; 279: 36210-36218.
- 127. Li H, **Rao A**, Hogan PG. Structural delineation of the calcineurin-NFAT interaction and its parallels to PP1 targeting interactions. *J Mol Biol* 2004; <u>342</u>: 1659-1674.
- 128. Nardone J, Ansel KM, Lee DU, **Rao A**. Bioinformatics for the 'bench biologist': how to find regulatory regions in genomic DNA. *Nature Immunol* 2004; <u>8</u>: 768-774 (review/ online tutorial).
- 129. Im S-H, **Rao A**. Activation and deactivation of gene expression by Ca²⁺/calcineurin-NFAT-mediated signaling. Mol Cells 2004; <u>18</u>: 1-9 (review).
- 130. Macian F, Im S-H, Garcia-Cozar FJ, **Rao A**. T-Cell Anergy. *Curr Opin Immunol* 2004; <u>16</u>: 209-216 (review).
- 131. Benedito AB, Lehtinen M, Massol R, Lopes UG, Kirchhausen T, **Rao A**, Bonni A. The transcription factor NFAT3 mediates neuronal survival. *J Biol Chem* 2005; 280: 2818-2825.
- 132. Oberdoerffer P, Kanellopoulou C, Heissmeyer V, Paeper C, Borowski C, Aifantis I, **Rao A**, Rajewsky K. Efficiency of RNA interference in the mouse hematopoietic system varies between cell types and developmental stages. *Mol Cell Biol* 2005; <u>25</u>: 3896-3905.
- 133. Heissmeyer V, Macian F, Varma R, Im SH, Garcia-Cozar F, Horton HF, Byrne MC, Feske S, Venuprasad K, Gu H, Liu YC, Dustin ML, Rao A. A molecular dissection of lymphocyte unresponsiveness induced by sustained calcium signalling. Novartis Foundation Symp 2005; 267: 165-74; discussion 174-179 (review/ symposium proceedings chapter).
- 134. Muljo SA, Ansel KM, Kanellopoulou C, Livingston DM, **Rao A**, Rajewsky K. Aberrant T cell differentiation in the absence of Dicer. *J Exp Med* 2005; <u>202</u>: 261-269.
- 135. Scharschmidt E, Wegener E, Heissmeyer V, **Rao A**, Krappmann D. Degradation of Bcl10 induced by T-cell activation negatively regulates NF-κB signaling. *Mol Cell Biol* 2005; <u>24</u>: 3860-3873.
- 136. Esensten JH, Tsystsykova AV, Lopez-Rodriguez C, Ligeiro FA, **Rao A**, Goldfeld AE. Tumor necrosis factor gene expression is activated by NFAT5 via a novel mechanism in response to hypertonic stress. *Nucleic Acids Res* 2005; 33: 3845-3854.
- 137. Bix M, Kim S, **Rao A**. Immunology: Opposites attract in differentiating T cells. *Science* 2005; <u>308</u>: 1563-1565 (commentary).
- 138. Heissmeyer V, Ansel KM, **Rao A**. A plague of autoantibodies. *Nature Immunol* 2005; <u>6</u>: 642-644 (commentary)
- 139. Monticelli S, Ansel KM, Xiao C, Socci ND, Krichevsky AM, Thai TH, Rajewsky N, Marks DS, Sander C, Rajewsky K, **Rao A**, Kosik K. MicroRNA profiling of the murine hematopoietic system. *Genome Biol* 2005; 6: R71.
- 140. Feske S, Prakriya M, **Rao A**, Lewis RS. A severe defect in CRAC Ca²⁺ channel activation and altered K⁺ channel gating in T cells from immunodeficient patients. *J Exp Med* **2005**; <u>202</u>: 651-662.
- 141. Kang S, Li H, **Rao A**, Hogan PG. Inhibition of the calcineurin-NFAT interaction by small organic molecules reflects binding at an allosteric site. *J Biol Chem* 2005; 280: 37698-37706.
- 142. Monticelli S, Lee DU, Nardone J, Bolton DL, **Rao A**. Chromatin-based regulation of cytokine transcription in Th2 cells and mast cells. *Int Immunol* 2005; 17: 1513-1524.
- 143. Kumar L, Feske S, **Rao A**, Geha R. A 10-aa-long sequence in SLP-76 upstream of the Gads binding site is essential for T cell development and function. *Proc Natl Acad Sci USA* 2005; <u>52</u>: 19063–19068.
- 144. Monticelli S, Ansel KM, Lee DU, **Rao A**. Regulation of gene expression in mast cells: micro-RNA expression and chromatin structural analysis of cytokine genes. *Novartis Foundation Symp* 2005; 271: 179-186; discussion 187-190 (review/ symposium proceedings chapter).
- 145. Ansel KM. Djuretic I, Tanasa B, **Rao A**. Regulation of Th2 differentiation and *II4* locus acessibility. *Annu Rev Immunol* 2006; <u>24</u>: 607-656 (review).
- 146. Borde M, Heissmeyer V, Barrington R, Carroll M, **Rao A**. Transcriptional basis of lymphocyte tolerance. *Imm Reviews* 2006; 210: 105-119 (review).

- 147. Heissmeyer V, Tanasa B, **Rao A**. Peripheral Tolerance of T-Cells in the Mouse in *The Mouse in Biomedical Research* 2006; 2nd Edition, Vol 3 (book chapter).
- 148. Feske S, Gwack Y, Prakriya M, Srikanth S, Puppel S-H, Tanasa B, Hogan PG, Lewis RS, Daly M, **Rao A**. A mutation in Orai1 causes immune deficiency by abrogating store-operated Ca²⁺ entry and CRAC channel function. *Nature* 2006; <u>441</u>: 179-185.
- 149. Gwack Y, Sharma S, Nardone J, Tanasa B, Iuga A, Srikanth S, Okamura H, Bolton D, Feske S, Hogan PG, **Rao A**. A genome-wide *Drosophila* RNAi screen identifies DYRK-family kinases as regulators of NFAT. *Nature* 2006; 441: 646-650.
- 150. Hu H, Wang B, Borde M, Nardone J, Maika S, Allred L, Tucker PW, **Rao A**. Foxp1 is an essential transcriptional regulator of B cell development. *Nature Immunol* 2006; <u>7</u>: 819-826.
- 151. Barrington R, Borde M, **Rao A**, Carroll M. NFAT1 involvement in B cell self-tolerance. *J Immunol* 2006; <u>177</u>: 1510-1515
- 152. Wu Y, Borde M, Heissmeyer V, Feuerer M, Lapan AD, Stroud JC, Bates DL, Guo L, Han A, Ziegler SF, Mathis D, Benoist C, Chen L, **Rao A**. FOXP3 controls T regulatory function through cooperation with NFAT. *Cell* 2006; <u>126</u>: 375-387.
- 153. Monticelli S, Sharma S, **Rao A**. Immunological applications of genomics. *Genome Biol* 2006; <u>7</u>, 321 (meeting report).
- 154. Prakriya M, Feske S, Gwack Y, Srikanth S, **Rao A**, Hogan PG. Orai1 is an essential pore subunit subunit of the CRAC channel. *Nature* 2006; 443: 230-233.
- 155. Feske S, **Rao A**, Hogan PG. The Ca²⁺-calcineurin-NFAT signalling pathway. Chapter 14, pp. 365-401 in "New Comprehensive Biochemistry 2006; Vol. 41 Calcium: A matter of life or death", Eds. J Krebs and M Michalak, Elsevier.
- 156. Djuretic IM, Levanon D, Negreanu V, Groner Y, **Rao A**, Ansel KM. T-bet and Runx3 cooperate to activate *Ifng* and silence *II4* in Th1 cells. *Nature Immunol* 2006; 8: 145-53.
- 157. Pipkin ME, Ljutic B, Cruz-Guilloty F, Nouzova M, **Rao A**, Zuniga-Pflucker JC, Lichtenheld MG. Chromosome transfer activates and delineates a locus control region for perforin. *Immunity* 2007; <u>26</u>: 29-41.
- 158. Gwack Y, Srikanth S, Feske, Cruz-Guilloty F, Oh-hora M, Neems DS, Hogan PG, **Rao A**. Biochemical and functional characterisation of Orai-family proteins. *J Biol Chem* 2007; <u>282</u>: 16232-16243.
- 159. Hogan PG, **Rao A**. Dissecting I_{CRAC}, a store-operated calcium current. *Trends Biochem Sci* 2007; <u>32</u>: 235-245.
- 160. Sundrud MS, **Rao A**. New twists of T cell fate: Control of T cell activation and tolerance by TGFβ and NFAT. *Curr Opin Immunol* 2007; 19: 287-293.
- 161. Sundrud MS, Rao A. ChIP'ing away at Foxp3. Immunol Cell Biol 2007; 85: 177-178.
- 162. Gwack Y, Feske S, Srikanth S, Hogan PG, **Rao A**. Signalling to transcription: store-operated Ca²⁺ entry and NFAT activation in lymphocytes. *Cell Calcium* 2007; <u>42</u>: 145-156.
- 163. Li H, Zhang L, **Rao A**, Harrison SC, Hogan PG. Structure of calcineurin in complex with PVIVIT peptide: portrait of a low-affinity signaling interaction. *J Mol Biol* 2007; <u>369</u>: 1296-1306.
- 164. Tahiliani M, Mei P, Fang R, Leonor T, Rutenberg M, Shimizu F, Li J, **Rao A**, Shi Y. A histone 3 lysine 4 demethylase, SMCX, links REST target genes to X-linked mental retardation. *Nature* 2007; <u>447</u>: 601-605.
- 165. Thai TH, Calado DP, Casola S, Ansel KM, Xiao C, Xue Y, Murphy A, Frendewey D, Valenzuela D, Kutok JL, Schmidt-Supprian M, Rajewsky N, Yancopoulos G, **Rao A**, Rajewsky K. Regulation of the germinal center response by microRNA-155. *Science* 2007; 316: 604-608.
- 166. Mueller MR, **Rao A**. 2007. Linking calcineurin activity to leukemogenesis. *Nature Medicine* 2007; <u>13</u>: 669-671.

- 167. Oh-hora M, Yamashita M, Hogan PG, Sharma S, Lamperti E, Chung W, Prakriya M, Feske S, **Rao A**. Dual functions for the endoplasmic reticulum calcium sensors STIM1 and STIM2 in T cell activation and tolerance. *Nature Immunol* 2008; <u>9</u>: 432-443. PMC2737533
- 168. Ansel KM, Pastor WA, Rath N, Lapan AD, Glasmacher E, Wolf C, Smith LC, Papadopoulou N, Lamperti ED, Tahiliani M, Ellwart JW, Shi Y, Kremmer E, **Rao A**, Heissmeyer V. Mouse ERI-1 interacts with the ribosome and catalyses 5.8S rRNA processing. *Nat Struct Mol Biol* 2008; <u>15</u>: 523-530. PMC3032500
- 169. Barr VA, Bernot KM, Srikanth S, Gwack Y, Balagopalan L, Regan CK, Helman DJ, Sommers CL, Ohhora M, Rao A, Samelson LE. Dynamic Movement of the Calcium Sensor STIM1 and the Calcium Channel Orai1 in Activated T Cells: Puncta and Distal Caps. *Mol Biol Cell* 2008; <u>19</u>: 2802-2817. PMC2441672
- 170. Oh-hora M, **Rao A**. Calcium signalling in lymphocytes. *Curr Opin Immunol* 2008; <u>20</u>: 250-258. PMC2574011
- 171. Gwack Y, Srikanth S, Oh-hora M, Hogan PG, Lamperti E, Yamashita M, Gelinas C, Neems DS, Sasaki Y, Prakriya M, Rajewsky K, **Rao A**. Hair loss and defective T and B cell function in mice lacking Orai1. *Mol Cell Biol* 2008; <u>28</u>: 5209-5222. PMC2519726
- 172. Oberdoerffer S, Moita LF, Neems DS, Freitas RA, Hacohen N, **Rao A**. Regulation of CD45 alternative splicing by the heterogeneous ribonucleoprotein, HnRNPLL. *Science* 2008; <u>321</u>: 686-691. PMC2791692
- 173. Horng T, Oberdoerffer S, **Rao A**. Gene regulation and signal transduction in the immune system. *Genome Biol* 2008; <u>9</u>: 315 (meeting review) PMC2530879
- 174. Bandukwala H, Sundrud MS, **Rao A**. Orphans against Autoimmunity. *Immunity* 2008; <u>29</u>: 167-168 (Preview)
- 175. Puga I, **Rao A**, Macian F. Targeted cleavage of signaling proteins by caspase 3 inhibits T cell receptor signaling in anergic T cells. *Immunity* 2008; <u>29</u>: 193-204. PMC2630799
- 176. Rao A. Signaling to gene expression: calcium, calcineurin and NFAT. Nat Immunol 2009; 10: 3-5.
- 177. Mayoral RJ, <u>Pipkin ME</u>, Pachkov M, van Nimwegen E, **Rao A**, Monticelli S. MicroRNA-221-222 regulate the cell cycle in mast cells. *J Immunol* 2009; 182: 433-445. PMC2610349
- 178. Müller MR, Sasaki Y, Stevanovic I, Lamperti ED, Ghosh S, Sharma S, Gelinas C, Rossi DJ, Pipkin ME, Rajewsky K, Hogan PG, **Rao A**. Requirement for balanced Ca/NFAT signaling in hematopoietic and embryonic development. *Proc Natl Acad Sci USA* 2009; <u>106</u>: 7034-7039. PMC2678457
- 179. Cruz-Guilloty F*, Pipkin ME*, Djuretic IM, Levanon D, Lotem J, Lichtenheld MG, Groner Y, **Rao A**. Runx3 and T-box proteins cooperate to establish the transcriptional program of effector CTLs. *J Exp Med* 2009; 206: 51-59. PMC2626671
- 180. Tahiliani M, Koh KP, Shen Y, Pastor WA, Bandukwala H, Brudno Y, Agarwal S, Iyer LM, Liu DR, Aravind L, **Rao A**. Conversion of 5-methylcytosine to 5-hydroxymethylcytosine in mammalian DNA by MLL partner TET1. *Science* 2009; 324: 930-935. PMC2715015
- 181. Sundrud MS, Koralov S, Feuerer M, Calado DP, Kozhaya AE, Rhule-Smith A, Lefebvre RE, Unutmaz D, Mazitchek R, Waldner H, Whitman M, Keller T, Rao A. Halofuginone inhibits TH17 cell differentiation by activating the amino acid starvation response. *Science* 2009; <u>324</u>: 1334-1338. PMC2803727
- 182. Iyer LM, Tahiliani M, **Rao A**, Aravind L. Prediction of novel families of enzymes involved in oxidative and other complex modifications of bases in nucleic acids. *Cell Cycle* 2009; <u>8</u>: 1698-1710. PMC2995806
- 183. Picard C, McCarl C, Papolos A, Khalil S, Lüthy K, Hivroz C, LeDeist F, Rieux-Laucat F, Ph.D., Rechavi G, **Rao A**, Fischer A, Feske S. *STIM1* Mutation Associated with a Syndrome of Immunodeficiency and Autoimmunity. *New Engl J Medicine* 2009; 360: 1971-1980. PMC2851618
- 184. Oh-hora M, **Rao A**. The calcium/NFAT pathway: role in development and function of regulatory T cells. *Microbes and Infection* 2009; <u>11</u>: 612-619. PMC2696553

- 185. Sharma S, **Rao A**. RNAi screening: Tips and techniques. *Nature Immunol* 2009; <u>10</u>: 799-804. PMC3036573
- 186. Pipkin ME, **Rao A**. Snapshot: effector and memory T cell differentiation. *Cell* 2009; <u>138</u>: 606.e1-2. PMC3607443
- 187. Macian F, Cruz-Guilloty F, Sharma S, **Rao A**. The NFAT family of transcription factors: Structure, regulation and biological functions. Chapter 254, *Handbook of Cellular Signalling*, Eds. Ralph Bradshaw and Edward Dennis, Academic Press 2009, in press (review/ book chapter).
- 188. **Rao A**, Hogan PG. Calcium signaling in cells of the immune and hematopoietic systems. *Immunol Rev* 2009; <u>231</u>: 5-9
- 189. McCarl C, Picard C, Khalil S, Kawasaki T, Rother J, Papolos A, Kutok J, Hivroz C, LeDeist F, Plogmann K, Ehl S, Notheis G, Albert MH, Belohradsky BH, Kirschner J, **Rao A**, Fischer A, Feske S. ORAI1 deficiency and lack of store-operated Ca²⁺ entry cause immunodeficiency, myopathy, and ectodermal dysplasia. *J Allergy Clin Immunol* 2009; <u>124</u>: 1311-1318. PMC2829767
- 190. Koh KP, Sundrud MS, **Rao A**. Domain requirements and sequence specificity of DNA binding for the forkhead transcription factor FOXP3. *PLoS One* 2009; 4:e8109. PMC2779587
- 191. Soto-Nieves N, Puga I, Abe BT, Bandyopadhyay S, Baine I, **Rao A**, Macian F. Transcriptional complexes formed by NFAT dimers regulate the induction of T cell tolerance. *J Exp Med* 2009; 206: 867-876. PMC2715123
- 192. Zhou Y*, Meraner P*, Kwon HT, Machnes D, Oh-hora M, Zimmer J, Huang Y, **Rao A**, Hogan PG. STIM1 gates the store-operated calcium channel ORAI1 in vitro. *Nat Struct Molec Biol* 2010; 17:112-116. PMC2902271
- 193. Fehr T, Lucas CL, Kurtz J, Onoe T, Zhao G, Hogan T, Vallot C, Rao A, Sykes M. A CD8 T cell-intrinsic role for the calcineurin-NFAT pathway for tolerance induction in vivo. Blood 2010; 1280-1287. PMC2826238
- 194. Djuretic I, Cruz-Guilloty F, **Rao A**. Regulation of gene expression in peripheral T cells by Runx transcription factors. *Adv Immunol* 2009;104:1-23.
- 195. Pipkin ME, Sacks JA, Cruz-Guilloty F, Lichtenheld MG, Bevan MJ, **Rao A**. Interleukin-2 and inflammation induce distinct transcriptional programs that promote the differentiation of effector cytolytic T cells. *Immunity* 2010; 32: 79-90. PMC2906224
- 196. Hogan PG, Lewis RL, **Rao A**. Molecular basis of calcium signalling in lymphocytes: STIM and ORAI. *Annu Rev Immunol* 2010; 28: 491-533. PMC2861828
- 197. Huang Y*, Pastor WA*, Shen Y, Tahiliani M, Liu DR, **Rao A**. The effect of 5-hydroxymethylcytosine on bisulfite sequencing. *PLoS One* 2010; 5: e8888. PMC2811190
- 198. Zhou Y, Ramachandran S, Oh-hora M, **Rao A**, Hogan PG. Pore architecture of the ORAI1 store-operated calcium channel. *Proc Natl Acad Sci USA* 2010; 107: 4896-4901. PMC2841875
- 199. Ghosh S, Koralov SB, Stevanovic I, Sundrud MS, Sasaki Y, Rajewsky K, **Rao A**, Müller MR. Hyperactivation of nuclear factor of activated T cells 1 (NFAT1) in T cells attenuates severity of murine autoimmune encephalomyelitis. *Proc Natl Acad Sci USA* 2010; 107: 15169-15174. PMC2930568
- 200. Müller MR, **Rao A**. NFAT, immunity and cancer: a transcription factor comes of age. *Nat Rev Immunol* 2010; <u>10</u>: 645-656 (review)
- 201. Ko M*, Huang Y*, Jankowska AM, Pape UJ, Tahiliani M, Bandukwala HS, Ahn J, Lamperti ED, Koh KP, Ganetzky R, Liu XS, Aravind L, Agarwal S, Maciejewski J, Rao A. Impaired hydroxylation of 5-methylcytosine in myeloid cancers with mutant TET2. Nature 2010; 468: 839-843. PMC3003755
- 202. Li H, **Rao A**, Hogan PG. Interaction of calcineurin with substrates and targeting proteins. *Trends Cell Biology* 2011; 21: 91-103 (review). PMC3244350
- 203. Koh KP, Yabuuchi A, Rao S, Huang Y, Cunniff K, Nardone J, Laiho A, Tahiliani M, Sommer CA, Mostoslavsky G, Lahesmaa R, Orkin SH, Rodig SJ, Daley GQ, **Rao A**. Tet1 and Tet2 regulate 5-hydroxymethylcytosine production and cell lineage specification in mouse embryonic stem cells. *Cell Stem Cell* 2011; 8: 200-213. PMC3134318

- 204. Bandukwala H*, Wu Y*, Feuerer M, Chen Y, Koh KP, Ghosh S, Sundrud MS, Stroud JC, Benoist C, Mathis D, **Rao A**, Chen L. Structure of a domain-swapped FOXP3 dimer on DNA and its function in regulatory T cells. *Immunity* 2011; 34: 479-491. PMC3085397
- 205. Pastor WA*, Pape UJ*, Huang Y*, Henderson HR, Lister R, Ko M, McLoughlin EM, Brudno Y, Mahapatra S, Kapranov P, Tahiliani M, Daley GQ, Liu XS, Ecker JR, Milos PM, Agarwal S, **Rao A**. Genome-wide mapping of 5-hydroxymethylcytosine in embryonic stem cells. *Nature* 2011, <u>473</u>: 394-397. PMC3124347
- 206. Sharma S, Findlay GM, Bandukwala HS, Oberdoerffer S, Baust B, Li Z, Schmidt V, Hogan PG, Sacks D, Rao A. Dephosphorylation of the nuclear factor of activated T cells (NFAT) transcription factor is regulated by an RNA-protein scaffold complex. *Proc Natl Acad Sci USA* 2011; <u>108</u>: 11381-11386. PMC3136327
- 209. Ko M*, Bandukwala HS*, An J, Lamperti ED, Thompson EC, Hastie R, Tsangaratou A, Rajewsky K, Koralov SB, **Rao A**. Ten-Eleven-Translocation 2 (TET2) negatively regulates homeostasis and differentiation of hematopoietic stem cells in mice. *Proc Natl Acad Sci USA* 2011; <u>108</u>: 14566-14571. PMC3167529
- 210. Ko M, Rao A. TET2: an epigenetic safeguard for HSC. *Blood* 2011; <u>118</u>: 4501-4503 (Commentary).
- 211. Jankowska AM, Makishima H, Tiu RV, Szpurka H, <u>Huang Y</u>, Traina F, Visconte V, Sugimoto Y, Prince C, O'Keefe C, Hsi ED, List A, Sekeres MA, **Rao A**, McDevitt MA, Maciejewski JP. Mutational spectrum analysis of chronic myelomonocytic leukemia includes genes associated with epigenetic regulation: UTX, EZH2 and DNMT3A. *Blood* 2011; <u>118</u>: 3932-3941. PMC3193268
- 212. Keller TL, Zocco D, <u>Sundrud MS</u>, Hendrick M, Edenius M, Yum J, Kim YJ, Lee HK, Wirth D, Dignam JD, **Rao A**, Yeo CY, Mazitschek R, Whitman M. Inhibition of prolyl-tRNA synthetase underlies the bioactivity of halofuginone. *Nature Chem Biol* 2011, 8: 311-317. PMC3281520
- 213. Närvä E, Rahkonen N, Emani MR, Lund R, Pursiheimo J-P, Nästi J, Autio R, Rasool O, Denessiouk K, Lähdesmäki H, Rao A, Lahesmaa R. RNA-binding protein L1TD1 interacts with LIN28 via RNA and is required for human embryonic stem cell self-renewal and cancer cell proliferation. Stem Cells 2011; 30: 452-460. PMC3507993
- 214. Vijayanand P, Seumois G, Simpson LJ, Abdul-Wajid S, Baumjohann D, Panduro M, Huang X, <u>Interlandi J, Djuretic IM</u>, Brown DR, Sharpe AH, **Rao A**, Ansel KM.Interleukin-4 production by follicular helpter T cells requires the conserved II4 enhancer hypersensitivity site V. *Immunity* 2012; <u>36</u>: 175-187. PMC3288297
- 215. Wang P, Fisher D, **Rao A**, Giese RW. Non-targeted nucleotide analysis based on benzoylhistamine labeling-MALDI-TOF/TOF-MS: discovery of putative 6-Oxo-Thymine in DNA. *Anal Chem* 2012; <u>84</u>: 3811-3819. PMC3341171
- 216. Kang J, Kalantry S, **Rao A**. PGC7, H3K9me2 and Tet3: regulators of DNA methylation in zygotes. *Cell Research* 2013; 23: 6-9. (Research Highlight) PMC3541665
- 217. Huang Y, Pastor WA, Zepeda-Martinez JZ, **Rao A**. The anti-CMS technique for genome-wide mapping of 5-hydroxymethylcytosine. *Nature Protocols* 2012; 7: 1897-1908. PMC3498982
- 218. Pastor WA, Henderson HR, Agarwal S, **Rao A**. The GLIB method for mapping 5-hydroxymethyl-cytosine genome-wide. *Nature Protocols* 2012; <u>7</u>: 1909-1917. PMC3482405
- 219. Bandukwala HS, Gagnon J, Togher S, Greenbaum J, Lamperti E, Parr N, Molesworth AMH, Smithers N, Lee K, Witherington J, Tough DF, Prinjha RK, Peters B, **Rao A**. Selective inhibition of CD4+ T-cell cytokine production and autoimmunity by BET protein and c-Myc inhibitors. *Proc Natl Acad Sci* 2012; 109:14532-14537. PMC3437860
- 220. Benson MJ, Äijö T, Chang X, Gagnon J, Pape UJ, Anantharaman V, Aravind A, Pursiheimo J-P, Oberdoerffer S, Liu XS, Lahesmaa R, Lähdesmäki H, **Rao A**. Heterogeneous nuclear ribonucleoprotein L-like (hnRNPLL) and elongation factor, RNA polymerase II, 2 (ELL2) are regulators of mRNA processing in plasma cells. *Proc Natl Acad Sci* 2012; <u>109</u>: 16252-16257. PMC3479602

- 221. Sasaki M, Knobbe CB, Itsumi M, Elia AJ, Harris IS, Chio IIC, Cairns RA, McCracken S, Wakeham A, Haight J, Ten AY, Snow B, Ueda T, Inoue S, Yamamoto K, Ko M, Rao A, Yen KE, Su SM, Mak TW. D-2-hydroxyglutarate produced by mutant IDH1 perturbs collagen maturation and basement membrane function. *Genes & Development* 2012: 26: 2038-2049. PMC3444730
- 222. Martinez GJ, **Rao A**. Cooperative transcription factor complexes in control. *Science* 2012; <u>338</u>: 891-892 (Perspective) PMC3621126
- 223. Huang Y, **Rao A**. New functions for DNA modifications by TET-JBP. *Nat Struct Mol Biol* 2012; <u>19</u>: 1061-1064. PMC3858004
- 224. Bronevetsky Y, Villarino AV, Eisley C, Barbeau R, Barczak A, Heinz GA, Kremmer E, Heissmeyer V, McManus MT, Erle DJ, **Rao A**, Ansel KM. T cell activation induces proteasomal degradation of Argonaute and rapid remodeling of the microRNA repertoire. *J Exp Med* 2013; 210: 417-432. PMC3570096
- 225. Gerasimova A, Chavez L, Li B, Seumois G, Greenbaum J, Rao A, Vijayanand P, Peters B. Predicting cell types and genetic variations contributing to disease by combining GWAS and epigenetic data. PLoS ONE 2013; 8: e54359. PMC3559682
- 226. Bandukwala HS, **Rao A**. 'Nurr'ishing T cells: Nr4a transcription factors control Foxp3 expression. *Nature Immunol* 2013; <u>14</u>: 201-203 (News and Views) PMC3607440
- 227. Balasubramani A, **Rao A**. O-GlcNAcylation and 5-Methylcytosine Oxidation: An Unexpected Association between OGT and TETs. *Molecular Cell* 2013; 49: 618-619. PMC3770526
- 228. Vincent JJ, <u>Huang Y</u>, Chen P-Y, Feng S, Calvopina JH, Nee K, Lee SA, Le T, Yoon AJ, Faull K, Fan G, **Rao A**, Jacobsen SE, Pellegrini M, Clark AT. Stage-Specific Roles for Tet1 and Tet2 in DNA Demethylation in Primordial Germ Cells. *Cell Stem Cell* 2013; 12: 470-478. PMC3684274
- 229. Yigit E, Zhang Q, Xi L, Grilley D, Widom J, Wang JW, Rao A, Pipkin ME. High-resolution nucleosome mapping of targeted regions using BAC-based enrichment. Nucleic Acids Research 2013; 41: e87. PMC3627574
- 230. Ko M, An J, Bandukwala HS, Pastor WA, Segal MF, Li H, Koh KP, Hogan PG, Aravind L, **Rao A**. Modulation of TET2 expression and 5-methylcytosine oxidation by the CXXC domain protein IDAX. *Nature* 2013; 497: 122-126. PMC3643997
- 231. Koh KP, **Rao A**. DNA methylation and methylcytosine oxidation in cell fate decisions. *Current Opinion in Cell Biology* 2013; <u>25</u>: 152-161. PMC3649866
- 232. Pastor WA, Aravind L, **Rao A**. TETonic shift: Biological roles of TET proteins in DNA demethylation and transcription. *Nature Reviews Mol Cell Biol* 2013: 14: 341-356. PMC3804139
- 233. Oh-hora M, Komatsu N, Pishyareh M, Feske S, Hori S, Taniguchi M, Rao A, Takayanagi H. Agonist-selected T Cell Development requires strong T cell receptor signaling and store-operated calcium entry. Immunity 2013; 38: 881-895. PMC3669219
- 234. Sharma S, Quintana A, Findlay GM, Mettlen M, Baust B, Jain M, Nilsson R, Rao A, Hogan PG. An siRNA screen for NFAT activation identifies septins as coordinators of store-operated Ca2+ entry. *Nature* 2013; 499: 238-242. PMC3846693
- 235. Zhou Y, Srinivasan P, Razavi S, Seymour S, Meraner P, Gudlur A, Stathopulos PB, Ikura M, **Rao A**, Hogan PG. Initial activation of STIM1, the regulator of store-operated calcium entry. *Nature Struct Molec Biol* 2013; 20: 973-981. PMC3784406
- 236. Blaschke K*, Ebata KT*, Karimi MM, <u>Zepeda-Martínez JA</u>, Goyal P, <u>Mahapatra S</u>, Tam A, Laird DJ, Hirst M, **Rao A**, Lorincz MC, Ramalho-Santos M. Vitamin C induces Tet-dependent DNA demethylation and a blastocyst-like state in ES cells. *Nature* 2013; 500: 222-226. PMC3893718
- 237. Lister R, Mukamel EA, Nery JR, Urich M, Puddifoot CA, Johnson ND, Lucero J, <u>Huang Y</u>, Dwork AJ, Schultz MD, Yu M, Tonti-Filippini J, Heyn H, Hu S, Wu JC, **Rao A**, Esteller M, He C, Haghighi FG, Sejnowski TJ, Behrens MM, Ecker JR. Global epigenomic reconfiguration during mammalian brain development. *Science* 2013: 341: 1237905. PMC3785061

- 238. Trifari S, Pipkin ME, Bandukwala HS, Äijö T, Bassein J, Chen R, Martinez GJ, **Rao A**. MicroRNA-directed program of cytotoxic CD8⁺ T cell differentiation. *Proc Natl Acad Sci USA* 2013; <u>110</u>: 18608-18613. PMC3831973
- 239. Jeong M, Sun D, Luo M, <u>Huang Y</u>, Challen GA, Rodriguez B, Zhang X, <u>Ko M</u>, Wang H, Chen R, Gunaratne P, Godley LA, Darlington GJ, **Rao A**, Li W, Goodell MA. Large conserved domains of low DNA methylation maintained by Dnmt3a. *Nat Genet* 2014; <u>46</u>: 17-23. PMC3920905
- 240. Huang Y*, Chavez L*, Chang X, Wang X, Pastor WA, Kang J, Zepeda-Martinez JA, Pape UJ, Jacobsen SE, Peters B, **Rao A**. Distinct roles of the methylcytosine oxidases Tet1 and Tet2 in mouse embryonic stem cells. *Proc Natl Acad Sci USA* 2014; 111: 1361-1366. PMC3910590
- 241. Iyer LM, Zhang D, de Souza RF, Pukkila PJ, **Rao A**, Aravind L. Lineage-specific expansions of TET/JBP genes and a new class of DNA transposons shape fungal genomic and epigenetic landscapes. *Proc Natl Acad Sci USA* 2014; <u>111</u>: 1676-1683. PMC3918813
- 242. Carlson TJ, Pellerin A, <u>Djuretic IM</u>, Trivigno C, Koralov SB, **Rao A**, <u>Sundrud MS</u>. Halofuginone-induced amino acid starvation regulates Stat3-dependent Th17 effector function and reduces established autoimmune inflammation. *J Immunol* 2014: 192: 2167-2176. PMC3936195
- 243. Tsagaratou A, **Rao A**. TET proteins and 5-methylcytosine oxidation in the immune system. *Cold Spring Harbor Symposia on Quantitative Biology* 2014; <u>78</u>: 1-10. PMC4631521
- 244. Seumois G*, <u>Chavez L</u>*, Gerasimova A, <u>Leinhard M</u>, Omran N, Kalinke L, Vedanayagam M, Ganeshan APV, <u>Chawla A</u>, Djukanović R, Ansel KM, Peters B, **Rao A**, Vijayanand P. Epigenomic analysis of primary human T cells reveals enhancers associated with T_H2 memory differentiation and asthma susceptibility. *Nature Immunol* 2014; 15: 777-788. PMC4140783
- 245. Tsagaratou A, Äijö T, Yue X, Lio C-W, Huang Y, Jacobsen SE, Vijayanand P, Lähdesmäki H, **Rao A**. Dissecting the dymanic changes of 5-hydroxymethylcytosine in T-cell development and differentiation. *Proc Natl Acad Sci USA* 2014; 111: E3306-3315. PMC4136618
- 246. <u>Chen RQ</u>, Bélanger S, Frederick MA, Li B, Johnston RJ, Xiao N, Liu Y.-C., <u>Sharma S</u>, Peters B, **Rao A**, Crotty S, <u>Pipkin ME</u>. In vivo RNA interference screens identify regulators of antiviral CD4(+) and CD8(+) T cell differentiation. *Immunity* 2014; 41: 325-338. PMC4160313
- 247. Pereira RM, Martinez GJ, Engel I, Cruz-Guilloty F, Lio CWJ, Barboza B, Berg LJ, Kronenberg M, Lee Y, Bandukwala HS, **Rao A**. Jarid2 is induced by TCR signalling and controls iNKT cell maturation. *Nature Comm* 2014; <u>5</u>: 4540. PMC4314221
- 248. Huang Y, **Rao A**. Connections between TET proteins and aberrant DNA modification in cancer. *Trends in Genetics* 2014; 30: 464-474. PMC4337960
- 249. Ko M, An J, Pastor WA, Koralov SB, Rajewsky K, **Rao A**. TET proteins and 5-methylcytosine oxidation in hematological cancers. *Immunol Rev* 2015; <u>263</u>: 6-21. PMC4617313
- 250. Chavez L*, Huang Y*, Luong K, Agarwal S, Iyer LM, Pastor WA, Hench VK, Frazier-Bowers SA, Korol E, Liu S, Tahiliani M, Wang Y, Clark TA, Korlach K, Pukkila PJ, Aravind L, **Rao A**. Simultaneous sequencing of oxidised methylcytosines produced by TET/JBP dioxygenases Coprinopsis cinerea. *Proc Natl Acad Sci USA* 2014; 111: E5149-58. PMC4260599
- 251. Gjini E, Mansour MR, Sander JD, Moritz N, Nguyen AT, Kesarsing M, Gans E, He S, Chen S, Ko M, Kuang YY, Yang S, Zhou Y, Rodig S, Zon LI, Joung JK, **Rao A**, Look AT. A zebrafish model of myelodysplastic syndrome produced through Tet2 genomic editing. *Mol Cell Biol* 2015; 35: 789-804. PMC4323485
- 252. Martinez GJ*, Pereira RM*, Äijö T*, Kim EY, Marangoni F, Pipkin ME, Togher S, Heissmeyer V, Zhang Y-C, Crotty S, Lamperti ED, Ansel KM, Mempel TR, Lähdesmäki H, Hogan PG, **Rao A**. The transcription factor NFAT promotes exhaustion of activated CD8⁺ T cells. *Immunity* 2015; <u>42</u>: 265-278. PMC4346317
- 253. Etchegaray JP, <u>Chavez L</u>, <u>Huang Y</u>, Ross K, Choi J, Martinez-Pastor B, Walsh R, Sommer CA, Lienhard M, Gladden A, Kugel S, Silberman DM, Ramaswamy S, Mostoslavsky G, Hochedlinger K, Goren A, **Rao A**, Mostoslavsky R. The histone deacetylase Sirt6 controls embryonic stem cell fate via

- Tet-mediated production of 5-Hydroxymethylcytosine. *Nature Cell Biology* 2015; <u>17</u>: 545-557. PMC4593707
- 254. Chang X, Li B, **Rao A**. RNA binding protein hnRNPLL regulates mRNA splicing and stability during B cell to plasma cell differentiation. *Proc Natl Acad Sci USA* 2015; <u>112</u>: E1888-97. PMC4403190
- 255. Balasubramani A, Larjo A, Bassein JA, Chang X, Hastie RB, Togher SM, Lähdesmäki H, **Rao A**. Cancer-associated ASXL1 mutations may act as gain-of-function mutations of the ASXL1-BAP1 complex. *Nature Comm.* 2015; 6: 7037. PMC4557297
- 256. Kang J, Lienhard M, Pastor WA, Chawla A, Novotny M, Tsagaratou A, Lasken RS, Thompson EC, Surani MA, Koralov SB, Kalantry S, Chavez L, **Rao A**. Simultaneous deletion of the methylcytosine oxidases Tet1 and Tet3 increases transcriptome variability in early embryogenesis. *Proc Natl Acad Sci USA* 2015; 112: E4236-45. PMC4534209
- 257. An J, González-Avalos E, Chawla A, Jeong M, López-Moyado IF, Li W, Goodell MA, Chavez L, Ko M, Rao A. Acute loss of *TET* function results in aggressive myeloid cancer in mice. *Nature Comm* 2015, 6:10071. PMC4674670
- 258. Ko M, An J, **Rao A**. DNA methylation and hydroxymethylation in hematologic differentiation and transformation. *Curr Opin Cell Biol* 2015; 37: 91-101. PMC4688184
- 259. Martinez GJ, Hu JK, Pereira RM, Bild N, Crampton JS, Crotty S, **Rao A**. Cutting Edge: NFAT transcription factors promote the generation of follicular helper T cells in response to acute viral infection. *J Immunol* 2016; 196: 2015-2019. PMC4761453
- 260. Yue X, Trifari S, Äijö T, Tsagaratou A, Pastor WA, Zepeda-Martinez JA, Lio, C.-W. J., Li. X, Huang Y, Vijayanand P, Lähdesmäki H, **Rao A**. Control of Foxp3 stability through modulation of TET activity. *J Exp Med* 2016; 213: 377-397. PMC4813667
- 261. Äijö T, <u>Huang Y</u>, Mannerström H, <u>Chavez L</u>, <u>Tsagaratou A</u>, **Rao A**, Lähdesmäki H. A probabilistic generative model for quantification of DNA modifications enables analysis of demethylation pathways. *Genome Biology* 2016; 17: 49. PMC4792102
- 262. Montagner S, Leoni C, Emming S, Della Chiara G, Balestrieri C, Barozzi I, Piccolo V, <u>Togher S, Ko M,</u> **Rao A**, Natoli G, Monticelli S. TET2 Regulates Mast Cell Differentiation and Proliferation through Catalytic and Non-catalytic Activities. *Cell Reports* 2016; 15: 1566-1579.
- 263. Zhang X, Su J, Jeong M, <u>Ko M</u>, <u>Huang Y</u>, Park HJ, Guzman A, Lei Y, Huang Y-H, **Rao A**, Li W, Goodell MA. DNMT3A and TET2 Compete and Cooperate to Repress Lineage-Specific Factors in Hematopoietic Stem Cells. *Nature Genetics* 2016; 48: 1014-1023. PMC4957136
- 264. Tsagaratou A, González-Avalos E, Rautio S, Scott-Browne JP, Togher S, Pastor WA, Rothenberg EV, Chavez L, Lähdesmäki H, **Rao A**. TET proteins regulate lineage specification and TCR-mediated expansion of iNKT cells. *Nature Immunology* 2016; <u>18</u>: 45-53. PMC5376256
- 265. <u>Scott-Browne JP</u>, <u>López-Moyado IF</u>, <u>Trifari S</u>, <u>Wong V</u>, <u>Chavez L</u>, **Rao A**, Pereia RM. Dynamic Changes in Chromatin Accessibility Occur in CD8+ T Cells Responding to Viral Infection. *Immunity* 2016; 45: 1327-1340. PMC5214519
- 266. Äijö T, Yue X, Rao A, Lähdesmäki H. LuxGLM: a probabilistic covariate model for quantification of DNA methylation modifications with complex experimental designs. *Bioinformatics* 2016; <u>32</u>: i511-i519. PMC5013920
- 267. Spira A, Disis ML, Schiller JT, Vilar E, Rebbeck TR, Bejar R, Ideker T, Arts J, Yurgelun MB, Mesirov JP, **Rao A**, Garber J, Jaffee EM, Lippman SM. Leveraging premalignant biology for immune-based cancer prevention. *Proc Natl Acad Sci USA* 2016; 113:10750-8. PMC5047191
- 269. Li X, Yue X, Pastor WA, Lin L, Evans SM, Chavez L, **Rao A**. Tet proteins influence the balance between neuroectodermal and mesoderm fate choice by inhibiting Wnt signaling. *Proc Natl Acad Sci USA* 2016; 113: 8267-8276. PMC5187696
- 270. Lio C-W J*, Zhang J*, González-Avalos E, Hogan PG, Chang X, **Rao A**.Tet2 and Tet3 cooperate with B-lineage transcription factors to regulate DNA modification and chromatin accessibility. *Elife* 2016; <u>5</u>: e18290. PMC5142813

- 271. Mognol G*, Spreafico R*, Wong V*, Scott-Browne JP, Togher S, Hoffmann A, Hogan PG, Trifari S, **Rao A**. Exhaustion-associated regulatory regions in CD8⁺ tumor-infiltrating T cells. *Proc Natl Acad Sci USA* 2017; 114: E2776-E2785. PMC5380094
- 272. Spira A, Yurgelun MB, Alexandrov L, **Rao A**, Bejar R, Polyak K, Giannakis M, Shilatifard A, Finn OJ, Dhodapkar M, Kay NE, Braggio E, Vilar E, Mazzilli SA, Rebbeck TR, Garber JE, Velculescu VE, Disis ML, Wallace DC, Lippman SM. Precancer Atlas to drive Precision Prevention Trials. *Cancer Res* 2017; 77: 1510-1541
- 273. Tsagaratou A, Lio CJ, Yue X, **Rao A**. TET Methylcytosine Oxidases in T Cell and B Cell Development and Function. Review in Front Immunol 2017;8:220. PMC5374156
- 274. Khoueiry R, Sohni A, Thienpont B, Luo X, Vande Velde J, Bartoccetti M, Boeckx B, Zwijsen A, **Rao A**, Lambrechts D, Koh P. Lineage-specific functions of TET1 in the post-implantation mouse embryo. Nature Genetics 2017.
- 275. Pereira RM, Hogan PG, **Rao A**, Martinex GJ. Transcriptional and epigenetic regulation of T cell hyporesponsiveness. *Review in J Leukocyte Biology*. Submitted.

In preparation

- 276. Scott-Browne JP, Lio C-W J, Rao A. TET proteins in normal and induced differentiation. *Review in Curr Opin in Genetics and Development*. Submitted.
- 277. Georges R*, Kang J*, Zunder ER, Frei AP, Nolan GP, Chavez L, **Rao A**. Distinct roles of TET proteins in reprogramming of somatic cells into induced pluripotent stem cells. *In preparation*.
- 278. Georges R, Rivas M, Gonzales-Avalos E, Kang J, Zhong S, **Rao A**. Single cell analysis of inter- and intra-embryo transcriptional variation in 2-cell embryos from TET-deficient mice. *In preparation*.
- 279. Pipkin ME, Äijö T, Yigit E, Djuretic IM, Zhang Q, Ki L, Wang J-P, Peters B, Lähdesmäki H, **Rao A**. Nucleosome organization is specified by Gata3 and Runx3 occupancy in helper and cytolytic T cells. *In preparation*.
- 280. Pipkin ME, Martinez GJ, Äijö T, Cruz-Guilloty F, Oh-hora M, Greenbaum JA, Lähdesmäki H, Peters B, Hogan PG, **Rao A**. Involvement of the calcineurin/NFAT pathway in transcriptional elongation in restimulated memory CD8⁺ T cells. *In preparation*.