Prof. Ravi Kumar Gutti

Contact Information

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Email: guttiravi@gmail.com ***Designation:*** Professor

Web of Science (N-2134-2019); ***ORCID*** (0000-0002-0912-5796); ***Google Scholar*** (vjy62H4AAAAJ)

Website http://sls.uohyd.ac.in/new/fac_details.php?fac_id=60 or http://uohyd.irins.org/profile/71257

Summary

Ph.D. in Molecular Biology and Biotechnology with vast International experience with proven expertise at managing projects, solving problems, mentoring and training. Strong skills in Stem cells, Applied Biology, Biochemistry, Molecular, Cellular and Developmental Biology, Regenerative and Translational medicine with great ability to work effectively in teams and independently.

Education

1997-03	Ph. D. Molecular Biology and Biotechnology	Indian Agri. Res. Instt., India
1995-97	M. Sc. Biotechnology	University of Hyderabad, India
1992-95	B. Sc. Biochemistry	Andhra University, India

Technical Qualifications

2001	Post Graduate Diploma in Env. Edu. & Mgmt.	University of Hyderabad, India
1999	Post Graduate Diploma in Computer Science	University of Hyderabad, India

Professional Training

7/18-present	Professor in Biochemistry	University of Hyderabad, INDIA
12/16-6/18	Associate Professor in Biochemistry	University of Hyderabad, INDIA
11/10-12/16	Assistant Professor in Biochemistry	University of Hyderabad, INDIA
08/10-11/10	Sr. Research Fellow and Instructor at Department of Medical Oncology and HMS	Dana-Faber Cancer Institute and Harvard Medical School, Boston, USA
06/08-07/10	Sr. Research Fellow at Newborn Medicine, Clinical Trials Office and Technology & Innovation Development Office	Children's Hospital Boston and Harvard Medical School, Boston, USA
02/04-05/08	Sr. Postdoctoral Fellow	NICHD, NIH, Bethesda, USA
06/03-01/04	Postdoctoral Research Associate	University of S. Florida, Tampa, USA
05/02-05/03	Scientific Researcher	RWTH Aachen, Aachen, Germany

Membership of Professional Societies

2018-present	Indian Science Congress Association, Life Member L35937
2018-present	Indian Society of Cell Biology, Life Member 2018005
2018-present	Indian Society of Chemists and Biologists, Life Member LF-880/18
2012-Present	Indian Immunology Society, Life Member LM/IIS262/10/12
2013-Present	Asia-Pacific Chemical, Biological & Environmental Engineering Society, Senior Member
2011-Present	Society for Biological Chemists, Life Member 2860
2011-Present	Society for Reproductive Biology and Comparative Endocrinology, Life Member
2022-present	Genetics Society of America, member 439871
2022-present	Asian Oncology Society, Life Member AOS0470
2022-present	American Society of Transplantation and Cellular Therapy, member 14196

2021-present London Stem Cell Network Member, Life Member 1368
2020-present Society for Immunology & Immunopathology, Life Member SIIP/LM-342
2022-present British Society of Immunology, Member 68813

Editorial and Journal Reviewer Activities

2013-present Biomed Research International
2012-present Journal of Cancer Science & Therapy
2009-present International Journal of Laboratory Hematology.
2009-present Journal of Cancer Research and Clinical Oncology
2014-present Blood
2014-present Cancer Group
2015-present Tumor Biology
2015-present Cellular Physiology and Biochemistry
2015-present Veterinary Microbiology
2016-present Acta Haematologica
2016-present Medicine (Wolters Kluwer Health, ***Academic Editor***)
2017-present Cell death and differentiation
2017-present Platelets
2017-present Biochimie
2017-present Bioscience Reports
2018-present International Journal of Laboratory Hematology.
2020-present Cell Death and Disease

Honors and Prizes

2023 Contribution Award **by** the Korean Society of Hematology (KSH) (March 2023)
2022 Global Investigator Award by Korean Society of Laboratory Medicine at 63rd Annual Meeting (Oct 2022).
2022 Overseas Contribution Award by Korean Bone Marrow Transplantation Society (Sept '22).
2022 Asian Oncology Society Best Presentation Award (2022)
2021 Review Editor position in RNA (Frontiers in Genetics and Frontiers in Molecular Biosciences).
2021 External Subject Expert of Doctoral Advisory Committee of Brien Holden Eye Research Centre, LVPEI
2021 External Expert of PhD Admissions Committee of CCMB, Hyderabad
2021 Global Investigator Award by Korean Society for Laboratory Medicine (Oct 2021)
2021 External Expert for IBSC Committee of Ganga Kaveri Seeds Pvt. Ltd,
2021 External Expert for IBSC Committee of Nectar Therapeutics Pvt. Ltd.
2021 IC-SCR member formulated by Transcell Biologics Private Limited
2021 BOS External Expert of Sri Padmavati Mahila Visvavidyalayam Tirupati
2021 External Expert Faculty recruitment, GITAM Institute of Science, Dept of Biotechnology (1-2 June, 2021)
2021 2021 ICKSH Award by International Conference & 62nd Annual Meeting, hosted by the Korean Society of Hematology (KSH) (April 2021)
2020 Global Investigator Award by Korean Society for Laboratory Medicine (Sept 2020)
2020 Korean Society of Bone Marrow Transplantation Award (Sept 2020)
2020 Global Health Award-Keystone by during Advances in Cancer Immunotherapy (July 2020)
2020 Expert Member on the Professor selection committee of Biotechnology Dept. of GITAM University
2020 Elected as **"Fellow of the Telangana Academy of Sciences (FTAS)"** for the year 2019 in Medical, Health and Pharmaceutical Sciences.
2019 External Expert to Center for Human Disease Research at BITS Pilani, Hyderabad
2019 International Association for Comparative Research on Leukemia and Related Diseases Award
2019 Singapore Stem Cell Society Award to PhD Student Ms. Swati Dahariya to present her research work titled "The long non-coding RNA landscape of blood cells: hematopoietic stem cells, erythroblast, and megakaryocyte" at SCSS-ISCT Joint Symposium 2019 (Nov 2019).
2019 APBMT& ICBMT 2019 travel award to Dr. Indira Paddibhatla, WOS-A Scientist for the work entitled "Histone Methyltransferase, SETDB1 epiegenetically modulates the fate of blood cells by affecting hematopoietic genes along with Hox gene expression" in 24th International Congress of APBMT& ICBMT 2019 held in Busan, South Korea in Aug 2019
2019 APBMT& ICBMT 2019 travel award to Dushyant Kumar Gautam for the work entitled "Studying the

effects of Methotrexte on haematopoiesis and NF-κB pathway using in vitro and in vivo model systems" in 24th International Congress of APBMT& ICBMT 2019 held in Busan, South Korea in Aug 2019.

2019 External Expert to Evaluate the Center for Human Disease Research, BITS Pilani, Hyderabad
2019 Japanese Society of Hematology Award, Tokyo, Japan
2019 Global Health Award-Keystone by University of Hong Kong and the Croucher Foundation
2019 LMCE 2019 Award to Ph.D. student Mr. Durga Shankar Sharma at Laboratory Medicine Congress & KSLM 60th Annual Meeting
2019 Korean Cancer Association Award, Seoul
2019 Board of Studies Advisory Committee member of NIT, Warangal
2019 Korean Society of Hematology Award, Seoul
2018 PhD student Ms. Swati Dahariya Selected for Newton Bhabha PhD Placement Programme 2018-19 to work at University of Cambridge (UK) (Dr. Anton Enright, Director of Studies in Natural Sciences)
2018 Korean Society of Laboratory Medicine Award, Seoul
2018 FIRM 2018 Award from Tissue and Cell Engineering Society, UK
2018 Chancellor's Award of University of Hyderabad.
2018 Young Scientist Fellow Award to Ph.D. student Mr. Sanjeev Raghuwanshi at 24th IUBMB and 15th FAOBMB Congress, Seoul, Korea for our miRNA research
2017 University Gold Medal to Ms. Rucha Hebalkar**,** IMSc Systems Biology project student
ICSCR member of Transcell Biologics
2017 SCSS 2017 Travel Award to Ph.D. Student Mr. Sanjeev Raghuwanshi to attend meeting on "Advances in Cell Therapy" at Singapore in Nov. 2017.
2017 PPSSC 2017 Travel Award to Ph.D. Student Mr. Sanjeev Raghuwanshi to attend meeting on 10th Pan Pacific Symposium on Stem Cells and Cancer Research at Taiwan in Apr. 2017.
2017 Royal Society Award (UK) for Established Scientists.
2016 DBT Nominee for IBSC Committee of Nectar Therapeutics Pvt. Ltd.(USA)
2016 Pan Pacific Symposium on Stem Cells and Cancer Research (PPSSC) Award, Taiwan
2015 SCSS 2015 Travel Award to Ph.D. Student Mr. Ram Babu Undi to attend meeting on "Opportunities & Challenges in Stem Cell Based Medicine" at Singapore in Nov. 2015.
2015 DAAD-Fellowship to Ph.D. student Ms. Itishri Sahu for Indo-German Sandwich Program
2015 ICMR Tilak Venkoba Rao Award – 2012 in Physiology
2014 Young Scientist Fellow Award to Ph.D. student Mr. Rambabu Undi at 15th IUBMB 24th FAOBMB-TSBMB conference, Taiwan
2014 ISSCR-SCSS 2014 Travel Award to Ph.D. Student Mr. Ravinder Kandi to attend meeting on Global Controls in Stem Cells at Singapore in Nov. 2014.
2014 FIRM 2014 Award from Tissue and Cell Engineering Society and Keele University, UK
2013 Best Paper Award at Bioquest 2013
2012 Best Presentation at World Congress on Biotechnology-2012
2011 Innovative Young Biotechnologist Award (IYBA-DBT)
2009 XXII congress of International Society on Thrombosis and Haemostasis Award as Top Poster
2008 American Society for Biochemistry and Molecular Biology (ASBMB) Fellowship, USA
2007 Scientific Travel Award winner of Sigma-Aldrich, USA
2004 NIH Postdoctoral Visiting Fellowship, NICHD, Bethesda, MD, USA
2002 International Association for Plant Tissue Culture(IAPTC) Fellowship,Orlando, Florida, USA
2001 Student Award**,** Society on Invitro Biology (SIVB), St. Louis, Missouri, USA.
1999 Senior Research Fellowship by Council of Scientific and Industrial Research (CSIR), GOI
1998 Junior Research Fellowship (NET) by Council of Scientific and Industrial Research(CSIR), GOI
1997 Graduate Aptitude Test in Engineering (GATE), India.
1997 Indian Agricultural Research Institute (ICAR) Fellowship, Govt. of India
1995 Dept. of Biotechnology (DBT) Scholarship, Govt. of India

Technical Expertise

Tissue Culture: Primary mice MEC purification, culture and transplantation, Primary mice (E13.5 liver, neonatal liver and adult bone marrow progenitors) and Human Hematopoetic Stem Cell (CD34+ Cord Blood and Peripheral Blood), Leukemia Cell lines maintenance.

Molecular qRT-PCR, RT-PCR, 5' RACE PCR and cloning cDNA, RAPD, Southern hybridization, Northern

Biology:	Hybridization, Cloning strategies, microRNA arrays, Micro arrays for mouse and human expression chips, Developing Pre- and Anti-miRNA cell culture systems.
Cell Biology and Protein Related:	Stem cell isolation, Western Blotting, Immunoprecipitation, Protein phosphorylation IPs, Nuclear and Cytoplasmic protein fraction separation, Flow cytometry, Transfections, Caspase-3 activity assay and Antibody Microarrays, ELISA, Immunoflorescence microscopy.
Protein Purification:	Antibody purification, Ion-exchange Chromatography, Affinity Chromatography and Enzyme assays.
Animal Handling:	Maintained KO and transgenic mice of Gonadotropin Regulated Testicular RNA Helicase. Also, maintaining WT mouse colonies.
Clinical Trials &Intellectual Property:	Licensing agreements with private sector entity together with evaluation of technology for patentability and commercialization along with Clinical Trial & Material Transfer Agreements.

Report of Teaching and Training

2017-now	Developmental Biology-MSc and IMSc, Biobanking-PG Certificate Course (Proposed)
2011-now	Molecules, Genes and information Processing- IMSc, Metabolic Pathways-IMSc, Intermediary metabolism-M.Sc, Biology Lab-IMSc, Lab Technique- IMSc, Clinical and nutritional biochemistry-M Sc
2009-now	Visiting faculty to teach Molecular Biology and Non-coding RNA at Department of Biochemistry and Zoology, Government Degree College, Kakatiya University, Nirmal, Telangana, India.
2008-2011	Leading workshops and organized classes for Faculty and Postdoctoral fellows at Harvard Medical School on miRNA in Harvard Catalyst program of Clinical and Translational Research, Boston, USA. (http://repository.countway.harvard.edu/xmlui/handle/10473/3518)
1999-2000	Organized practical training classes of tissue culture to postgraduate students at National Research Centre on Plant Biotechnology, IARI, Pusa Campus, New Delhi.

Supervisory and Training Responsibilities

2010-till date	3 Ph.D. Students (Enrolled), 2 Postdoctoral Fellow (Enrolled), 7 Ph.D. students (Submitted and Awarded), 5 JRF, 2 SRF, 1 Project Assistant and 40 Master Students
2008-2010	Supervised and trained three clinical fellows and one medical graduate student
2004-2008	Supervised and trained two summer interns and three Jr. postdoctoral fellows
2003-2004	Supervised and trained one full time technician and summer intern
2002-2003	Supervised and trained two graduate students

Administrative Responsibilities

2022-present	External Subject Expert of Doctoral Committee of Brien Holden Eye Research Centre, LVPEI
2021-present	External Expert of PhD Admissions Committee of CCMB, Hyderabad
2021--present	External Expert for IBSC Committee of Ganga Kaveri Seeds Pvt. Ltd, Hyderabad
2021-present	Expert Member on the selection committee of Biotechnology Faculty of GITAM University
2021-present	Interdepartmental Assets and Stock Verification Committee
2020-22	Dept of Biochemistry Purchase Committee
2020-22	Expert Member on the selection committee of Biotechnology Faculty of GITAM University
2019	External Expert to Evaluate the Center for Human Disease Research, BITS Pilani, Hyderabad
2019-present	Admissions Committee Member of Dept of Biochemistry
2019-present	External Expert for IBSC Committee of Nectar Therapeutics Pvt. Ltd.(USA)
2019-present	Board of Studies member of NIT Warangal
2019-present	Committee member to NIAB PhD Students
2019-present	Advisory member to Marathwada University, Nanded
2019-present	Board of Studies Committee member to Telangana University
2018-present	Reviewer for Netherlands Organisation for Scientific Research grants
2018-present	Examinership (Biochemistry) at Banaras Hindu University
2018-present	Advisory Committee for Central Facility for Nanotechnology (CFN), UoH
2017-present	NIRF ranking committee of University of Hyderabad
2017-present	Nodal Officer from SLS for drafting Institution of Eminence Application to UGC
2017-present	Academic Journals Expert Committee of University of Hyderabad.
2017-present	Committee to collate and edit the Annual Report of the University of Hyderabad.

2015-present Committee member of Waste Water Treatment Wetlands Technology (ICW)
2014-2017 Ph.D. Course Work Coordinator
2014 Refresher Course in Biochemistry Coordinator for UGC Training
2013-present Member of Grievance Committee
2011-present Incharge of Animal Facility
2011-2012 Incharge of M. Sc. Biochemistry Laboratory-I
2008-2010 Managed lab supplies and mice colonies
2004-2008 Managed mice colonies, lab radiation safety compliance and lab supplies

Report of Local and International Invited Teaching and Presentations

2021 Speaker for talk titled "A novel role of let-7b/ LIN28B/IMP-1/IGF-II axis as a molecular regulator of megakaryocyte development during aging" at Hematopoietic Stem Cells: Biology, Disease and Therapy, Penn Institute for Regenerative Medicine, USA (9 March, 2021)

2020 Speaker for talk titled "Understanding Thrombocytopenia: Role of let-7b/ LIN28B/IMP-1/IGF-II axis in Neonatal and Adult Megakaryopoiesis at Laboratory Medicine Congress & Exhibition & KSLM 61st Annual Meeting (LMCE 2020). (25 Sept, 2020)

2020 Speaker for talk titled "Differential regulation of lncRNAs and SMAD independent ERK/1/2 and PI3K/AKT pathways are involved in PMA-induced megakaryocytic differentiation of megakaryoblasts" at Asian Oncology Society (AOS) 2020 (Nov 2020).

2020 Speaker for talk titled "Understanding Thrombocytopenia:Role of let-7b/ LIN28B/IMP-1/IGF-II axis in Neonatal and Adult Megakaryopoiesis"at International Congress of BMT 2020, S. Korea (11 Sept, 2020)

2020 Speaker for talk titled "MicroRNA therapeutics : Discovering novel targets and developing specific Therapy" at Refresher course in Life Sciences Course, Osmania University (9 Oct, 2020)

2020 Speaker for talk titled ""Toll-like Receptor Signalling: Role in Megakaryocyte Development and Immune Regulation" in International Conference on "Immunology in 21st Century for Improvising Health, Aug. 2020.

2020 Speaker on "Natural Products as Alternative Therapies: Role in Inducing Immune Response through Platelet Production as Thrombopoietin Mimetics in Drug Resistance"at Ashok Singhal Institute of Traditional Science and Technology (ASITST) of Veer Bahadur Singh Purvanchal University, Jaunpur, UP, June 2020 Webinar.

2019 Speaker for presentation titled "MicroRNA therapeutics: Discovering novel targets and developing specific therapy" at Bhavan's Vivekananda College of Science, Humanities and Commerce in Aug 2019

2019 Invited Speaker at 81st Annual Meeting of the Japanese Society of Hematology (Oct 2019)

2019 Invited Speaker at 45th Annual Meeting of Korean Cancer Association Conference (June 2019)

2019 Invited Speaker to two days seminar titled "Natural products in the era of drug resistance" from March 2-3, 2019 at SRTM University, Nanded.

2019 Invited Speaker at Korean Society of Hematology Conference, Seoul, Korea (March 2019)

2018 Invited Speaker at MNR Hospital, Lecture on"Thrombocytopenia" (November 2018)

2018 Invited Speaker at Thermo Fisher meeting-Lecture on "Real-Time PCR: an Effective Tool for Hematopoietic Stem Cell Research" (June 2018)

2018 Invited Speaker at Science Academies-Lecture Workshop of Telangana University on RNA Silencing: A Potential Tool For Functional Genomics, Health Care and Crop Improvement (Jan 2018)

2017 Invited Speaker under TIFR-UoH Life Sciences Seminar Series

2017 Resource Person for teaching Basics of Stem Cells to TGT and PGT Teachers across India of Jawahar Navodaya Vidyalaya at Hyderabad (Oct 2017)

2017 Resource Person for teaching Stem Cell Technology to Assistant Professors of Refresher Course in University of Hyderabad (Nov 2017)

2017 Invited talk on "Stem cell technology and its applications" at UGC-Academic Staff College JNTU Hyderabad (Feb 2017)

2016 Invited workshop for MTech Biotechnolgy students on Stem Cell and Tissue Engineering at JNTU, Hyderabad (Feb 2016)

2016 Invited talk on miRNA in Cellular Therapies: Role in Cord Blood and Peripheral Blood Derived Megakaryocytes. 9th Pan Pacific Symposium on Stem Cells and Cancer Research (PPSSC), Taiwan, May 2016

2016 Invited talk on miRNA in Cellular Therapies: Role in Cord Blood and Peripheral Blood Derived Megakaryocytes at Academia Sinica, Taipei, Taiwan (May 2016)

2016 Invited as a judge for KVS National level 43rd Jawaharlal Nehru National Science, Mathematics and Environment Exhibition for children-2016 at K. V. Begumpet (April 2016)

2016 Advances in Stem Cell Technology at National Seminar on Modern Approaches in Animal Sciences and Applied Biology at Nizamabad (Feb 2016)

2014 Role of miR-9 in regulation of chemokine receptor CXCR4 in cord blood and peripheral blood derived megakaryocytes at International Conference on Autoimmunity and Transplantation, Goa (Oct 2014)

2013 Role of microRNAs in Developmental Megakaryocytopoiesis at Bioquest 2013, Kerala, India (Aug 2013)

2012 microRNAs: Emerging roles in developmental megakaryocytopoiesis at 3rd International Conference on Stem Cells and Cancer (ICSCC-2012): Proliferation, Differentiation and Apoptosis, New Delhi (Oct 2012)

2010 Invited talk on Molecular mechanisms causing hyperproliferation of Cord blood cells at Institute for Cell Engineering, Stem Cell Biology Program, Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins School of Medicine, Baltimore, USA (July' 2010)

2010 Oral presentation in Hematology section of Pediatric Academic Societies (PAS) 2010, Vancouver, Canada (Topic: Developmental Differences in the Lin28b/let7b Axis Contribute to the High Proliferative Rate of Neonatal Megakaryocyte Progenitors)

2010 Invited talk at MK Joint meeting of Boston on Role of Let-7b in the developmental differences in megakaryocytopoiesis at Harvard Medical School. (May'10)

2010 Invited talk at Eastern New Mexico University, Portales, NM on Developmental Biology.

2010 Invited Talk on Molecular Mechanisms involved in Proliferation of Cord Blood Stem Cells at Dana-Farber Cancer Institute and Harvard Medical School (Apr'10)

2010 Children's Hospital Immunology Seminar at Harvard Medical School on Betterment of Child Health(Mar'10)

2010 Invited Talk on Hematopoietic Stem Cells at Alma College, MI, USA (Feb'10)

2009 Invited Talk on Improving Child Health and Human Development (Dec'09) at IIT Kharagpur.

2009 Invited Talk on Megakaryocytopoiesis (DEC'09) at NISER, Bhubaneswar, India.

2009 Visiting faculty to teach Molecular Biology and Non-coding RNA at Department of Biochemistry and Zoology, Government Degree College, Kakatiya University, Nirmal, Andhra Pradesh, India.

2009 Leading Workshop for faculty and postdoctoral fellows at Countway Library of Medicine, Harvard Medical School, Boston in Harvard Catalyst program of Clinical and Translational Research (Topic: Introduction and analysis of MicroRNAs, http://vimeo.com/7330116)

2009 Oral presentation in Hematology section of Pediatric Academic Societies (PAS) 2009, Baltimore, USA (Topic: Different micro RNA expression profiles between neonatal and adult megakaryocytes might contribute to their substantial biological differences)

2008 Invited Talk on GRTH/DDX25 role in Apoptosis at Weill Medical Center, Cornell University, NY, USA(Feb)

2008 Invited Talk on Molecular Regulation of Apoptosis by GRTH/DDX25 at Columbia University, USA (Jan '08)

2007 Oral presentation in Male reproductive physiology section of 89th Annual meeting of Endocrine Society-ENDO 2007, Toronto, Canada (Topic: Gonadotropin-Regulated testicular RNA Helicase (GRTH/DDx25), a master regulator of spermatogenesis, prevents testicular germ cell apoptosis)

2002 Oral presentation at International Association for Plant Tissue Culture(IAPTC) at 10th IAPTC Conference in Orlando, Florida, USA (Topic: Development of Novel White Rust Resistant Genetic Stocks in Crop *Brassicas* by somatic hybridization)

Report of Clinical and Technological Innovations

2016-2017	Identified novel Tpo mimetics from plant sources.
2014-2015	Identified potential miRNA involved in organellar biogenesis.
2013-2014	Identified miRNA involved in Vincristine Resistance in Megakaryoblastic Leukemia.
2011-2013	Identified different micro RNA expression profiles between neonatal and adult megakaryocytes. Awareness of these developmental differences could lead to improved therapies for neonatal thrombocytopenia and for the delayed platelet engraftment that frequently complicates transplantation with cord blood-derived stem cells.
2008-2010	Identified mechanisms responsible for the hyperproliferative phenotype of neonatal megakaryocytes and its ex vivo manipulation. This will provide new therapies targeting hematologic disorders associated with hyperproliferation such as Leukemia.
2004-2008	Identified two polymorphic forms of GRTH by genetic screening of *GRTH/DDX25* in fertile and 143 infertile Japanese men with non-obstructive azoospermia. These studies will help to screen the cause of male infertility in Humans by identifying mutations in GRTH gene and to treat them for the respective clinical conditions.

2003-2004 Tested Histone Deacetylase Inhibitor LBH 589 which is in Phase II Clinical Trials against human Leukemia with constitutively active mutant FLT-3 tyrosinekinase

Report of Scholarship

Publications (Journals)

2023 Jagtap YA, Kumar P, Kinger S, Dubey AR, Choudhary A, **Gutti RK**, Singh S, Jha HC, Poluri KM, Mishra A. Disturb mitochondrial associated proteostasis: Neurodegeneration and imperfect ageing. ***Front Cell Dev Biol***. 2023 Mar 10;11:1146564.

2023 Sangeeth A, Malleswarapu M, Mishra A, **Gutti RK**. Long Non-Coding RNAs as Cellular Metabolism and Haematopoiesis Regulators**.** ***J Pharmacol Exp Ther***. 2023 Jan;384(1):79-91.

2023 Dahariya S, Raghuwanshi S, Thamodaran V, Velayudhan SR, **Gutti RK**. Role of Long Non-Coding RNAs in Human-Induced Pluripotent Stem Cells Derived Megakaryocytes: A p53, HOX Antisense Intergenic RNA Myeloid 1, and miR-125b Interaction Study. ***J Pharmacol Exp Ther***. 2023 Jan;384(1):92-101.

2022 Sangeeth A, Malleswarapu M, Mishra A, **Gutti RK.** Long non-coding RNA Therapeutics: Recent advances and challenges. ***Curr Drug Targets***. 2022 Sep 19. doi: 10.2174/1389450123666220919122520.

2022 Amanullah A, Upadhyay A, Dhiman R, Singh S, Kumar A, Ahirwar DK, **Gutti RK**, Mishra A. Development and Challenges of Diclofenac-Based Novel Therapeutics: Targeting Cancer and Complex Diseases. ***Cancers (Basel).*** 2022 Sep 9;14(18):4385.

2022 Dubey AR, Mishra R, Sundaria N, Jagtap YA, Kumar P, Kinger S, Choudhary A, Jha HC, Prasad A, **Gutti RK**, Mishra A. Resveratrol Promotes LRSAM1 E3 Ubiquitin Ligase-Dependent Degradation of Misfolded Proteins Linked with Neurodegeneration. ***Cell Physiol Biochem***. 2022 Sep 28;56(5):530-545.

2022 Bhattacharya M, **Gutti RK.** Non-coding RNAs: are they the protagonist or antagonist in the regulation of leukemia? ***Am J Transl Res.*** 2022 Mar 15;14(3):1406-1432.

2021 Gautam DK, Chimata AV, **Gutti RK**, Paddibhatla I. Comparative hematopoiesis and signal transduction in model organisms. ***J Cell Physiol***. 2021 Aug; 236(8):5592-5619. doi: 10.1002/jcp.30287.

2021 Dahariya S, Raghuwanshi S, Sangeeth A, Malleswarapu M, **Gutti RK.** Megakaryoblastic leukemia: a study on novel role of clinically significant long non-coding RNA signatures in megakaryocyte development during treatment with phorbol ester. 2021 ***Cancer Immunol Immunother*** 70, 3477–3488.

2021 Sharma DS, Paddibhatla I, Raghuwanshi S, Malleswarapu M, Sangeeth A, Kovuru N, Dahariya S, Gautam DK, Pallepati A, **Gutti RK.** Endocannabinoid system: Role in blood cell development, neuroimmune interactions and associated disorders. ***J Neuroimmunol***. 2021 Jan 28;353:577501. doi: 10.1016/j.jneuroim.2021.577501.

2021 Kovuru N, Raghuwanshi S, Sangeeth A, Malleswarapu M, Sharma DS, Dahariya S, Pallepati A, **Gutti RK.** Co-stimulatory effect of TLR2 and TLR4 stimulation on megakaryocytic development is mediated through PI3K/NF-κB and XBP-1 loop. ***Cell Signal.*** 2021 Jan 11;80:109924.

2021 Sharma DS, Raghuwanshi S, Narasaiah K, Dahariya S, Gautam DK, Paddibhatla I and **Gutti RK.** Virodhamine, an endocannabinoid induce megakaryocyte differentiation by regulating MAPK activity and function of mitochondria. ***J. Cell Physiology.*** 2021 Feb;236(2):1445-1453.

2020 Raghuwanshi S, Dahariya S, Sharma DS, Kovuru N, Sahu I, **Gutti RK.** RUNX1 and TGF-β signaling Cross Talk Regulates Ca2+ Ion Channels Expression and Activity during Megakaryocyte Development, ***FEBS Journal***. 2020 Dec;287(24):5411-5438.

2020 Pelzl L, Sahu I, Ma K, Heinzmann D, Bhuyan AAM, Al-Maghout T, Sukkar B, Sharma Y, Marini I, Rigoni F, Artunc F, Cao H, **Gutti R**, Voelkl J, Pieske B, Gawaz M, Bakchoul T, Lang F. Beta-Glycerophosphate-Induced ORAI1 Expression and Store Operated Ca2+ Entry in Megakaryocytes. ***Sci Rep***. 2020 Feb 3;10(1):1728.

2020 Kovuru N, Raghuwanshi S, Sharma DS, Dahariya S, Pallepati A, **Gutti RK.** Endoplasmic reticulum stress induced apoptosis and caspase activation is mediated through mitochondria during megakaryocyte differentiation. ***Mitochondrion.*** 2020 Jan;50:115-120.

2019 Dahariya S, Paddibhatla I, Kumar S, Raghuwanshi S, Pallepati A, **Gutti RK.** Long non-coding RNA: Classification, biogenesis and functions in blood cells. ***Molecular Immunology***. 2019 Aug;112:82-92.

2019 Kovuru N, Raghuwanshi S, **Gutti RK.** Exosome mediated differentiation of megakaryocytes: a study on TLR mediated effects. ***J Thromb Thrombolysis***. 2019 Jul;48(1):171-173.

2019 Raghuwanshi S, Sharma DS, Kandi R, Kovuru N, Dahariya S, Musvi SS, Venkatakrishnan AC, Pallepati A, **Gutti RK.** Pituitary adenylate cyclase-activating polypeptide (PACAP): Differential effects on neonatal vs adult megakaryocytopoiesis. ***Thromb Res.*** 2019 Mar;175:59-60.

2019 Raghuwanshi S, Dahariya S, Musvi SS, Gutti U, Kandi R, Undi RB, Sahu I, Gautam DK, Paddibhatla I, **Gutti RK**. MicroRNA function in megakaryocytes.***Platelets.*** 2019;30(7):809-816.

2018 U Gutti, JK Komati, A Kotipalli, RGV Saladi, **RK Gutti.** *Justicia adhatoda* induces megakaryocyte differentiation through mitochondrial ROS generation. ***Phytomedicine*** 2018 Apr 1;43:135-139.

2018 Bansal P, Dahate P, Raghuwanshi S, Sharma DS, Kovuru N, Gutti U, Yarla NS, **Gutti RK.**. Current Updates on Role of Lipids in Hematopoiesis. ***Infect Disord Drug Targets.*** 2018;18(3):192-198.

2018 Sahu I, Hebalkar R, Kar S, SreeVidya T, Gutti U, **Gutti RK.**Systems biology approach to study the role of miRNA in promoter targeting during megakaryopoiesis. ***Exp. Cell Res.*** 2018 May 15;366(2):192-198.

2018 Raghuwanshi S, Dahariya S, Kandi R, Gutti U, Undi RB, Sharma DS, Kovuru N, Sahu I, Yarla NS, Saladi RGV, **Gutti RK.** Epigenetic mechanisms: Role in hematopoietic stem cell lineage commitment and differentiation. ***Curr Drug Targets.*** 2018;19(14):1683-1695.

2018 Raghuwanshi S, Gutti U, Kandi R, **Gutti RK.** MicroRNA-9 promotes cell proliferation by regulating RUNX1 expression in human megakaryocyte development. ***Cell Prolif.*** 2018 Feb;51(1).

2017 Al-Maghout T, Pelzl L, Sahu I, Sukkar B, Zohreh H, **Gutti R**, Laufer S, Voelkle J, Pieske B, Gawaz M, Lang F. P38 Kinase, SGK1 and NF-κB Dependent Up-Regulation of Na+/Ca2+ Exchanger Expression and Activity Following TGFß1 Treatment of Megakaryocytes. ***Cell Physiol Biochem*** 2017 Aug 15;42(6):2169-2181

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Grants

S. No.	Title of Project	Funding Organization	Amount (L. Rs)
1.	Potential role of miR-9 regulation in CXCR-4 expression at different developmental stages of human megakaryocytes	DBT (Innovative Young Biotechnologist Award)	41.81
2.	Role of Toll-like Receptor Signaling Mediated Disease Resistance in Indian Poultry	DBT (National Institute of Animal Biotechnology)	27.25
3.	Targeted Inhibition of Signaling Cascades of Leukemia Stem Cell Eradication	UGC (Universities with Potential of Excellence Phase-II)	3
4.	miR-9/Runx1 mediates developmental regulation of distinct megakaryocytopoiesis	DBT (Rapid Grant for Young Investigators)	33.25
5.	Identification and characterization of novel microRNA of clinical importance from neonatal and adult derived megakaryocytes	UGC	9.6
6.	Potential signaling pathways in molecular regulation of different developmental stages of human megakaryocytes	DST-SERB	52.9
7.	Molecular regulation of the differences between neonatal and adult megakaryocytopoiesis leading to bleeding disorders	DBT(Human Developmental and Disease Biology Taskforce)	25
8.	Structural studies of H. pylori virulence factors and understanding the basis of molecular interaction with host proteins	DBT (Rapid Grant for Young Investigators) as Co-PI, PI: Dr. Mohd. Akif	33.4
9.	Uncovering the role of Rab family of GTPases on alpha-synuclein toxicity in the Drosophila Parkinson's disease model	DBT (Rapid Grant for Young Investigators)as Co-PI, PI: Dr.G. B. Madhu Babu	39.92
10.	SETDB1 in hematopoiesis and hematopoietic tumors: Target genes and their regulation	Mentor: Ravi Kumar Gutti. PI: Dr. Indira Paddibhatla DST-WOS-A program	30
11.	Toll-like Receptor Signalling: Significance in Megakaryocyte Development and Platelet Production	DST-SERB	46.2
12.	From small to big: microRNAs as new players in developmental megakaryocytopoiesis	ICMR	46.6
13.	Long non-coding RNA Regulation: Role in megakaryocyte development	CSIR	18
14.	Role of Long non-coding RNA in hiPSC derived Megakaryocytes: A lncRNA, miRNA and cell cycle regulators interaction study	Institution of Eminence Grant	50
15.	Cannabinoid Receptor Signaling in Megakaryocyte Development: Significance in Neuro-immune Regulation	DST-SERB	42.5

Additional Research Training

- **Networks in Biological Sciences workshop** under the **Institute for Mathematical Sciences Program** of **National University of Singapore** from **June 1 to June 14, 2015**.
- **Fellow** at **Technology and Innovation Development Office and Clinical Trials Office**, **Harvard Medical School and Children's Hospital Boston,** Boston, MA on licensing agreements with private sector entity together with evaluation of technology for patentability and commercialization along with Clinical Trial Agreements.
- Introduction to Clinical Research at Children's Hospital Boston, **Harvard Medical School**, Boston, MA, USA.
- Technology Transfer from The Foundation for Advanced Education in the Sciences, Inc. at **National Institutes of Health(NIH)**, Bethesda, MD, USA.
- National Center for Biotechnology Information's (NCBI) Identification and Correlation of Disease Genes to Phenotypes from **National Institutes of Health(NIH)**, Bethesda, MD.
- National Center for Biotechnology Information's (NCBI) Structural Analysis Quickstart from **National Institutes of Health (NIH)**, Bethesda, MD, USA
- Cell Cycle: Principles and Methods from The Foundation for Advanced Education in the Sciences, Inc. at **National Institutes of Health(NIH)**, Bethesda, MD, USA.
- Radiation Safety in the Laboratory from **National Institutes of Health(NIH)**, Bethesda.
- Guidelines for Animal Users from **National Institutes of Health (NIH)**, Bethesda, MD.
- Rodent Workshop: Hands-On Animal Techniques from **National Institutes of Health(NIH)**, Bethesda, MD, USA.
- National Center for Biotechnology Information's (NCBI) BLAST Quick start from **National Institutes of Health(NIH)**, Bethesda, MD, USA.
- National Center for Biotechnology Information's (NCBI) MapViewer-Quickstart from **National Institutes of Health(NIH)**, Bethesda, MD, USA.
- National Center for Biotechnology Information's (NCBI) Making Sense of DNA and Protein Sequences from **National Institutes of Health(NIH)**, Bethesda, MD, USA.
- Summer Training Program at **ICRISAT (**International Crop Research Institute for the Semi-arid Tropics**), Asia Centre** on "Application of Molecular Biology Techniques for the improvement of Cereal Crops" under the guidance of Dr. N. Seetharama.

Coordination of Research Symposia and Workshops

Coordinated 2nd International Conference on Genome Architecture and Cell Fate Regulation from 3-6 Dec, 2018
Coordinated an International workshop between **Academia Sinica**, Taiwan and University of Hyderabad, India on 31st October, 2011 at C.V. Raman Auditorium, University of Hyderabad, India.
Co-ordinated a Symposium **"Re-searching Science 2012"** as a part of Junior Science Club from 28-29 September, 2012 at C.V. Raman Auditorium, University of Hyderabad, India.
Co-ordinated **"Vigyanotsav 2013"** a 2-day symposium of Junior Science Club at DST Auditorium, HCU from Jan 18-19, 2013.
Coordinated 82nd Annual meeting of the **Society of Biological Chemists** (India and International Conference on genomes: Mechanism and Function) from Dec 2-5, 2013 at University of Hyderabad, India.
Organized **UGC Refresher Course in Biochemistry** at UoH for 21 days in Nov 2014.
Organized **International Symposium cum Workshop on Frontiers in Comparative Endocrinology and Neurobiology**-2014 (FCEN-2014) in November, 2014.
Co-ordinated "**Disposal of Hazardous Waste**" Workshop sponsored by UPE-2 (August 12, 2015)
Organized GIAN Program sponsored by MHRD on **"Basics and Therapeutic Applications of Pluripotent Stem Cells"** from July 17-27, 2017
Organized 2nd International Conference on "Genome Architecture and Cell Fate Regulation" from 3-6 Dec, 2018.

Importance of the Research Work

Our laboratory research focuses on studying the molecular regulation of developmental megakaryocytopoiesis (platelet production process). Neonatal cord blood (CB) cells are promising alternatives to adult bone marrow (PB) in cellular therapies. The CB-derived cells have higher differentiation and proliferation potential for clinical application in regenerative medicine as compared to PB-derived cells. CBs cells have potential to either remain as

a stem cell or become progenitor with a more specialized function such as erythrocytes or megakaryocytes (MK). MKs are responsible for the production of platelets, which are necessary for normal blood clotting. Thrombocytopenia, defined as a platelet count $<150 \times 10^9$/L is common among sick infants. Neonates are affected by disorders of megakaryocytopoiesis that predominantly or exclusively present during this developmental stage, including transient myeloproliferative disorder (TMD) and thrombocytopenia-absent radius (TAR) syndrome. We hypothesize that developmental differences between CB and PB-MKs contribute to the vulnerability of neonates to develop severe thrombocytopenia and non-coding RNAs may play a critical role in the regulation of developmental megakaryocytopoiesis.

Upto 50% neonates admitted to the NICU frequently develop thrombocytopenia. Currently, the only treatment option for the vast majority of thrombocytopenic neonates is to administer platelet transfusions. Recently, however, two novel thrombopoiesis-stimulating agents were approved by the FDA for the treatment of immune thrombocytopenic purpura. Both agents act by stimulating the thrombopoietin receptor on megakaryocytes and their progenitor cells.

Our research intends to discuss the potential role of non-coding RNA in developmental megakaryocytopoiesis. Over the last several years, we and others have shown that there are substantial biological differences between neonatal and adult megakaryocytes in regard to their proliferative potential, ploidy, maturational status, and (most importantly) response to Tpo. We feel that a thorough discussion of these differences is warranted in light of the new availability of these thrombopoietic agents and their potential use in thrombocytopenic neonates. The intention of our work would be to provide neonatologists -who are frequently confronted with the issue of severe thrombocytopenia- with clear insights into the molecular regulation of megakaryocytopiesis.

In future from the clinical perspective, we would like to explore the role of non-coding RNA in the pathogenesis of neonatal diseases and adult myeloproliferative disorders in which the target pathways might be abnormally reactivated. From a biological perspective, we would like to explore the mechanisms regulating the developmental changes in non-coding RNA expression, which are currently not understood.