Dr.K. Purna Sai

Principal Scientist

Head & Associate Professor - AcSIR

Biological Materials

CSIR-Central Leather Research Institute

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Academic Qualifications

M.Sc. Ethiraj College for Women, University of Madras, Chennai

Ph.D in Zoology-Biotechnology CSIR-Central Leather Research Institute, University of Madras, Chennai

Post Doc: Department of Biotechnology Fellowship for RA at CSIR-Centre for Cellular and Molecular Biology

Areas of Interest

Wound healing, Biomaterials, Drug delivery, Nanomaterials, Peptides, Collagen- ECM interactions, cancer biology

Membership in Professional Societies

Member of wound healing society of India

List of Extramural Projects Handled

Title of the project

Year

Funding agency

Bio therapeutic Peptides

2018-2020

CSIR Inhouse

Enzyme based nanocomposite for periodontal wound healing and regeneration

2018-2020

Indian council of Medical Research (Govt. Of India)

Development of theranostic based wound healing and monitoring system for detection of healing pathways which impair healing by biosensor/biochip.

2018-2020

Indian council of Medical Research (Govt. Of India)

Intriguing role of scaffold proteins and their potential application in therapeutics (AORC- INSPIRE programme)

2017-2022

Department of Science and Technology (Govt. Of India)

Fabrication of nanofibers for the concomitant delivery of si RNA and a chemotherapeutic agent to overcome drug resistance in the management of cancer

2016-2019

Department of Health Research, Indian council of Medical Research (Govt. Of India)

Bioprospecting of coumarins obtained from medicinal plants and their synthetic derivatives for the anti-microbial, antifeedant and anti-cancer activity.

2013-2016

Department of Biotechnology (Govt. Of India)

Studies on Bio-Nano Material and their characterization (AORC- INSPIRE programme)

2013-2018

Department of Science and Technology (Govt. Of India)

Advanced drug delivery systems (ADD)

2012-2017

Council of Scientific and Industrial Research (Govt. Of India)

Understanding the interaction of collagen with functionalized nanoparticles including identification of new crosslinking agents (STRAIT)

2012-2017

Council of Scientific and Industrial Research (Govt. Of India)

Nanomaterials: Applications and Impact on Safety, Health and Environment(NanoSHE)

2012-2017

Council of Scientific and Industrial Research (Govt. Of India)

Synthesis, Characterization and Biological application of Nanocomposite materials. (AORC- INSPIRE programme)

2012-2017

Department of Science and Technology (Govt. Of India)

Identification and characterization of proteoglycans in frog skin and their implications in wound healing.

2007-2010

Department of Biotechnology (Govt. Of India)

Identification and characterization of anti-angiogenic principle from amphibian skin and its implication in pathological conditions.

2007-2010

Department of Science and Technology (Govt. Of India)

Development and standardization of therapeutic herbal formulations for the management of Alopecia and skin disorders.

2005-2008

Department of Science and Technology (Govt. Of India)

Ph.D : Thesis Supervised:

1. Molecular cloning and characterization of cDNAs encoding Glyceraldehyde - 3 - phosphate dehydrogenase and NC1 domain of Collagen XVIII from Indian shrub frog, Polypedates maculatus by Nirupa Mogili

2. Design and development of zein based micro and nanocarriers – a promising delivery system for therapeutics by Karthikeyan

3. Molecular insights into abnormal wound healing: emphasis on the pivotal role of dermatopontin by Venkat Raghavan

4. Nano-TiO2 Impregnated Biocomposites: A Broad Spectrum Application From Healthcare To Environment by Babitha Sekhar

5. Design and fabrication of stabilized collagen and nanomaterials for therapeutic and industrial application by Rachita Lakra

6. Strategic design of hormone impregnated biocomposites: Implications on skin and neural regeneration by Aishwarya Satish

7. Strategically designed proteolytic enzyme impregnated biomimetic nanocomposite: application in skin, cardiac and periodontal tissue regeneration by Shoba Ekambaram

Patents filed

Dr. K. Purna sai and Ms. Aishwarya Sathish. An alginate based collagenous biocomposite for wound healing application and a process for the preparation thereof. 14-02-2019 201911005786 Project :CSC0302

List of Publications

A Solaimuthu, P Murali, Purna Sai Korrapati. Nano-biosensors and their relevance in Tissue Engineering. Current Opinion in Biomedical Engineering.2020

Krishnamoorthy Rajavenkatesh, Murali Padmaja, Indrakumar Janani, Satish Aishwarya, Korrapati Purna Sai, Sathiah Thennarasu. Design and synthesis of a novel peptide for selective detection of cancer cells.. Chemical Biology & Drug Design. 2020

S Rathinavel, E Shoba, Purna Sai Korrapati, S Dharmalingam. Design and fabrication of electrospun SBA-15 incorporated PVA with Curcumin: a biomimetic nano scaffold for skin tissue engineering. Biomedical Materials.2020

Janani Indrakumar, Purna Sai Korrapati. Steering Efficacy of Nano Molybdenum Towards Cancer: Mechanism of Action. Biological trace element research.2020. 194 (1), 121-134

PoornimaBalan,JananiIndrakumar, PadmajaMurali and PurnaSai Korrapati. Bi-faceted delivery of phytochemicals through chitosan nanoparticles impregnated nanofibers for cancer therapeutics. International journal of biological macromolecules.2019.

V Vijayan, S Sreekumar, F Singh, D Govindarajan, R Lakra, Purna Sai Korrapati, Manikantan Syamala Kiran. Praseodymium–Cobaltite-Reinforced Collagen as Biomimetic Scaffolds for Angiogenesis and Stem Cell Differentiation for Cutaneous Wound Healing .2019. ACS Applied Bio Materials 2 (8), 3458-3472

Natarajan Duraipandy, Govindarajan Dharunya, Rachita Lakra, Purna Sai Korrapati, Manikantan Syamala Kiran. Fabrication of plumbagin on silver nano framework for tunable redox modulation: Implications for therapeutic angiogenesis. Journal of cellular physiology.2019.234 (8), 13110-13127

A Satish, Purna Sai Korrapati. Strategic design of peptide-decorated aligned nanofibers impregnated with triiodothyronine for neural regeneration. Journal of tissue engineering and regenerative medicine.2019

A Satish, Purna Sai Korrapati. Nanofiber-Mediated Sustained Delivery of Triiodothyronine: Role in Angiogenesis. AAPS PharmSciTech. 2019. 20 (3), 110

S Rallapalli, S Guhathakurta, S Narayan, DK Bishi, V Balasubramanian, Purna Sai Korrapati .Generation of clinical-grade red blood cells from human umbilical cord blood mononuclear cells. Cell and tissue research. 2019. 375 (2), 437-449.

A Satish, R Aswathi, JC Maria, Purna Sai Korrapati.Triiodothyronine impregnated alginate/gelatin/polyvinyl alcohol composite scaffold designed for exudate-intensive wound therapy. European Polymer Journal.2019. 110, 252-264.

Dharunya Govindarajan, Rachita Lakra, Purna Sai Korrapati, Jayavel Ramasamy, Manikantan Syamala Kiran. Nanoscaled Biodegradable Metal-Polymeric Three-Dimensional Framework for Endothelial Cell Patterning and Sustained Angiogenesis. ACS Biomaterials Science & Engineering. 2019.5: 2519-2531.

IndrakumarJanani, RachitaLakra,Manikantan SyamalaKiran , Purna Sai Korrapati. Selectivity and sensitivity of molybdenum oxide-polycaprolactone nanofiber composites on skin cancer: Preliminary in-vitro and in-vivo implications. Journal of Trace Elements in Medicine and Biology 2018. 49, 60-71.

EkambaramShoba, RachitaLakra, Manikantan SyamalaKiran, Purna Sai Korrapati Strategic design of cardiac mimetic core-shell nanofibrous scaffold impregnated with Salvianolic acid B and Magnesium L-ascorbic acid 2 phosphate for myoblast differentiation. Materials Science and Engineering: C. 2018.90, 131-147.

V. S. Simi, Aishwarya Satish, Purna Sai Korrapati and N. Rajendran. In-vitro biocompatibility and corrosion resistance of electrochemically assembled PPy/TNTA hybrid material for biomedical applications. Applied Surface Science 2018. 445, 320-334.

N Duraipandy, Rachita Lakra, Purna Sai Korrapati, Perumana R Sudhakaran, Manikantan Syamala Kiran. Targeting Pyruvate Kinase M2, β Catenin Signaling by Juglone Silver Nano Framework for Selective Cancer Cell Death. ChemistrySelect.2018. 3:2894-2903

S Babitha, Meenakshi Annamalai, Michal Marcin Dykas, Surajit Saha, Kingshuk Poddar, Jayarama Reddy Venugopal, Seeram Ramakrishna, Thirumalai Venkatesan, Purna Sai Korrapati. Fabrication of a biomimetic ZeinPDA nanofibrous scaffold impregnated with BMP-2 peptide conjugated TiO2 nanoparticle for bone tissue engineering. Journal of tissue engineering and regenerative medicine.2018. 12(4):991-1001

S Babitha, Purna Sai Korrapati. Biodegradable zein–polydopamine polymeric scaffold impregnated with TiO2 nanoparticles for skin tissue engineering. Biomedical Materials.2017.9: 055008

Aishwarya Satish, Purna Sai Korrapati. Tailored release of triiodothyronine and retinoic acid from a spatio-temporally fabricated nano fiber composite instigating neuronal differentiation. Nanoscale.2017.9(38)14565-14580

D Govindarajan, N Duraipandy, KV Srivatsan, R Lakra, Purna Sai Korrapati, Fabrication of Hybrid Collagen Aerogels Reinforced with Wheat Grass Bio-Actives as Instructive Scaffolds for Collagen Turnover and Angiogenesis for Wound Healing Applications ACS Applied Materials & Interfaces.2017. 9 (20), 16939–16950

Ekambaram Shoba, Rachita Lakra, Manikantan Syamala Kiran, Purna Sai Korrapati, Fabrication of core–shell nanofibers for controlled delivery of bromelain and salvianolic acid B for skin regeneration in wound. Biomed. Mater. 2017. 12, 035005.

Venkat Raghavan Krishnaswamy, Uma Maheshwari Balaguru , Suvro Chatterjee and Purna Sai Korrapati. Dermatopontin augments angiogenesis and modulates the expression of transforming growth factor beta 1 and integrin alpha 3 beta 1 in endothelial cells. European Journal of Cell Biology.2017. 96(3):266-275

S. Babitha, Lakra Rachita, K. Karthikeyan, Ekambaram Shoba, Indrakumar Janani, Balan Poornima and Purna Sai Korrapati. Electrospun protein nano fibers in healthcare: A review. International Journal of Pharmaceutics.2017.523,52–90

Balan Poornima, Purna Sai Korrapati. Fabrication of chitosan-polycaprolactone composite nano fibrous scaffold for simultaneous delivery of ferulic acid and resveratrol. Carbohydrate Polymers.2017. 157, 10, 1741–1749.

C Karthick, K Karthikeyan, Purna Sai Korrapati, A Kalilur Rahiman. Antioxidant, DNA interaction, molecular docking and cytotoxicity studies of aminoethylpiperazine-containing macrocyclic binuclear copper (II) complexes. Applied Organometallic Chemistry 2016, 31 (8):1-15

Dharunya G, Duraipandy N, Lakra R, Purna Sai Korrapati, Jayavel R, Kiran MS. Curcumin cross - linked collagen aerogels with controlled anti-proteolytic and pro-angiogenic efficacy. Biomed Mater.2016. 11 (4):045011.

Narendra Reddy Chereddy, M.V. Niladri Raju, B. Manohar Reddy, Venkat Raghavan Krishnaswamy, Purna Sai Korrapati, B. Jagan Mohan Reddy, Vaidya Jayathirtha Rao. A TBET based BODIPY-rhodamine dyad for the ratio metric detection of trivalent metal ions and its application in live cell imaging. Sensors & Actuators: B. Chemical.2016,237:605-612.

S. Mohanapriya, M. Mumjitha, S. Babitha, Purna Sai Korrapati, V. Raj. Fabrication and Characterization of Poly (vinyl alcohol)-TiO2 Nano composite films for Orthopaedic applications. Journal of the Mechanical Behavior of Biomedical Materials.2016,63:141-146.

Purna Sai Korrapati, K. Karthikeyan, Aishwarya Satish, Venkat Raghavan Krishnaswamy, Jayarama Reddy Venugopal, Seeram Ramakrishna. Recent advancements in nano technological strategies in selection, design and delivery of biomolecules for skin regeneration. Materials Science and Engineering C .2016, 67: 747–765.

Srivatsan, Rachita Lakra, Korrapati. Purna Sai and M. S. Kiran Effect of bimetallic iron: zinc nanoparticles on collagen stabilization, K.V., J. Mater. Chem. B, 2016, 4: 1437-1447

Subramaniyan Janakipriya, Narendra Reddy Chereddy, Purnasai Korrapati, Sathiah Thennarasu, Asit Baran Mandal. Selective interactions of trivalent cations Fe 3+, Al 3+ and Cr 3+ turn on fluorescence in a naphthalimide based single molecular probe. Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy.2016, 153:465-470.

Rachita Lakra, Manikantan Syamala Kiran, Korrapati Purna Sai. Fabrication of homobifunctional crosslinker stabilized collagen for biomedical application. Biomedical Material Mater. 2015. 10: 065015

Aishwarya Satish and Purna Sai Korrapati. Fabrication of a triiodothyronine incorporated nano fibrous biomaterial: its implications on wound healing. RSC Adv., 2015,5: 83773-83780

Kunnavakkam Vinjimur Srivatsan, Natarajan Duraipandy, Rachita Lakra, Sandhiya K, Usha Ramamurthy, Purna Sai Korrapati and Manikantan Syamala . Nano-caged shikimate as a multi-site cross-linker of collagen for biomedical applications. RSC Adv.2015,5: 22106-22116

Karthikeyan K., Sowjanya Satya Rajeswari, Aditya D V Yugandhar, Gopinath S and Purnasai Korrapati. Design and development of topical dosage form for the convenient delivery of electrospun drug loaded nano fibers. RSC Adv.2015; 5(65): 52420-52426.

Kunnavakkam Vinjimur Srivatsan, N Duraipandy, Shajitha Begum, Rachita Lakra, Usha Ramamurthy, Purna Sai Korrapati, Manikantan Syamala Kiran. Effect of curcumin caged silver nanoparticle on collagen stabilization for biomedical applications. International Journal of Biological Macromolecules. 2015, 75: 306–315.

Narendra Reddy Chereddy, Peethani Nagaraju, MV Niladri Raju, Venkat Raghavan Krishnaswamy, Purna Sai Korrapati, Prakriti Ranjan Bangal, Vaidya Jayathirtha Rao. A novel FRET 'off–on' fluorescent probe for the selective detection of Fe 3+, Al 3+ and Cr 3+ ions: Its ultrafast energy transfer kinetics and application in live cell imaging. Biosensors and Bioelectronics, 2015, 68:749–756.

S. Babitha and Purna Sai Korrapati. TiO2 immobilized zein microspheres: a biocompatible adsorbent for effective dye decolourisation. RSC Adv., 2015, 5: 26475.

K. Karthikeyan, Krishnaswamy VR, Lakra R, Kiran MS, Korrapati Purna Sai. Fabrication of electrospun zein nanofiber for the sustained delivery of siRNA. J Mater Sci: Mater Med .2015. 26:101. DOI 10.1007/s10856-015-5439-x.

Indra R, Purna Sai Korrapati, Rajaram A, Rajaram R. Effect of Cr (VI) and Ni (II) metal ions on human adipose derived stem cells. Bio metals. 2015, 28(1): 21-33. doi: 10.1007/s10534-014-9800-1.

Krishnaswamy VR, Korrapati Purna Sai. Role of Dermatopontin in re-epithelialization: Implications on keratinocyte migration and proliferation. Sci Rep. 2014.Dec 9; 4:7385. doi: 10.1038/srep07385.

Narendra Reddy Chereddy, M V Niladri Raju, Peethani Nagaraju, Venkat Raghavan Krishnaswamy, Purna Sai Korrapati, Prakriti Ranjan Bangal, Vaidya Jayathirtha Rao.A-naphthalimide-based-PET-probe-with-Fe3-selective-detection-ability-theoretical-and-experimental-study.Analyst 2014. Dec;139(24):6352-6.

N. Duraipandy, R. Lakra, S. Kunnavakkam Vinjimur, U. Ramamoorthy, Purna Sai Korrapati and M. S. Kiran. Plumbagin caged silver nanoparticle stabilized collagen scaffold for wound dressing. J. Mater. Chem. B, 2014. 3 (7), 1415-1425

E. Shoba, R. Lakra, M. S. Kiran and Purna Sai Korrapati. Design and development of papain–urea loaded PVA nanofibers for wound debridement. RSC Adv., 2014. 4, 60209. DOI: 10.1039/C4RA10239H.

N. Duraipandy, Rachita Lakra, Srivatsan Kunnavakkam Vinjimur, Debasis Samanta, Purna Sai Korrapati and Manikantan Syamala Kiran.Caging of plumbagin on silver nanoparticles imparts selectivity and sensitivity to plumbagin for targeted cancer cell apoptosis. Metallomics, 2014. 6, 2025-2033

Krishnaswamy VR, Manikandan M, Munirajan AK, Vijayaraghavan D, Korrapati Purna Sai. Expression and integrity of dermatopontin in chronic cutaneous wounds: a crucial factor in impaired wound healing. Cell Tissue Res. 2014. 358(3):833-41. doi: 10.1007/s00441-014-2000-z.

K. Karthikeyan, Ezhilarasan Vijayalakshmi, Korrapati Purna Sai. Selective Interactions of Zein Microspheres with Different Class of Drugs: An In Vitro and In Silico Analysis. AAPS PharmSciTech. 2014. 15(5):1172-80.

V. R. Krishnaswamy, R. Lakra and Purna Sai. Korrapati Keloid collagen–cell interactions: structural and functional perspective. RSC Adv., 2014. 4, 23642. DOI: 10.1039/C4RA01995D.

C. Karthick, P. Gurumoorthy, M.A. Imran Musthafa, Rachita Lakra, Purna Sai Korrapati, A. Kalilur Rahiman. 2014. Dinuclear phenoxo-bridged “end-off” complexes containing a piperazine that shows chemical nuclease and cytotoxic activities, Journal of Coordination Chemistry, DOI:10.1080/00958972.2014.920501.

Alorpava Mary Loordhuswamy, Venkat Raghavan Krishnaswamy, Purna Sai Korrapati, Senthilram Thinakaran, Giri Dev Venkateshwarapuram Rengaswami. Fabrication of highly aligned fibrous scaffolds for tissue regeneration by centrifugal spinning technology. Materials Science and Engineering: C.2014,42: 799-807.

Rachita Lakra, Manikantan Syamala Kiran, Ramamoorthy Usha, Ranganathan Mohan,Raja Sundaresan, Purna Sai Korrapati. Enhanced stabilization of collagen by furfural. International Journal of Biological Macromolecules. 2014.65, 252–257.

Malathi Sampath, Rachita Lakra, Purna Sai Korrapati, Balasubramanian S. Curcumin loaded poly (lactic-co-glycolic) acid nanofiber for the treatment of carcinoma. Colloids and Surfaces B: Bio interfaces. 2014. 117, 128–134.

Narendra Reddy Chereddy, Purna Sai Korrapati, Sathiah Thennarasu, Asit Baran Mandal. Tuning copper (II) ion selectivity: the role of basicity, size of the chelating ring and orientation of coordinating atoms. Dalton Transactions. 2013. 42, 12873-12877.

M Chamundeeswari, B Santhosh Kumar, T Muthukumar, L Muthuraman,Korrapati Purna Sai, TP Sastry. Iron nanoparticles from blood coated with collagen as a matrix for synthesis of nanohydroxyapatite. Bulletin of Materials Science.2013.36: 1165-1170.

Narendra Reddy Chereddy, Subramaniyan Janakipriya, Purna Sai Korrapati, Sathiah Thennarasu, Asit Baran Mandal. Solvent-assisted selective detection of sub-micromolar levels of Cu 2+ ions in aqueous samples and live-cells. Analyst. 2013.138: 1130-1136.

S Babitha, Purna Sai Korrapati. Biosynthesis of titanium dioxide nanoparticles using a probiotic from coal fly ash effluent. Materials Research Bulletin.2013. 48: 4738–4742.

Karthikeyan. K, Soma. G, Rama. R, Purna Sai Korrapati. Electrospun Zein/Eudragit Nanofibers based Dual Drug Delivery System for the Simultaneous Delivery of Aceclofenac and Pantoprazole. International Journal of Pharmaceutics. 2012.438:117– 122.

K. Karthikeyan, Rachita Lakra, Rama Rajaram, Purna Sai Korrapati. Development and Characterization of Zein based Micro Carrier system for Sustained Delivery of Aceclofenac Sodium. AAPS PharmSciTech. 2012.13, 143-149.

Nirupa Shyam Mogili, Venkat Raghavan Krishnaswamy, Meenakshi Jayaraman, Rama Rajaram, Alamelu Venkatraman, Korrapati Purna Sai. Altered angiogenic balance in keloids: a key to therapeutic intervention. Translational Research. 2012. 159:182-189.

C.H. Narendra Reddy, K. Suman, Korrapati Purna Sai, S. Thennarasu, A.B. Mandal. Design and synthesis of rhodamine based chemosensors for the detection of Fe3+ions. Dyes & Pigments.2012.95: 606-613.

Gladstone Christopher Jayakumar, Swarna Vinodh Kanth, Purna Sai Korrapati, Bangaru Chandrasekaran, Jonnalagadda Raghava Rao, Balachandran Unni Nair. Scleraldehyde as a stabilizing agent for collagen scaffold preparation. Carbohydrate polymers.2012. 87:1482-1489.

Venkat Raghavan K, Mary Babu, Rama Rajaram, Korrapati Purna Sai Efficacy of frog skin lipids in wound healing. Lipids in Health and Disease. 2010. 9:74.

N. Sitaram, Purna Sai Korrapati, Shashi Singh, Sankaran K and Nagaraj R. Structure- function relationship studies on the frog skin antimicrobial peptide Tigerinin 1: Design of analogs with improved activity and their action on clinical bacterial isolates. Antimicrob. Agents Chemother. 2002. 46: (7) 2279-2283.

Sathya Sai Kumar K.V., Purna Sai Korrapati. and Mary Babu.2002. Application of frog (Rana tigerina Daudin) skin collagen as a novel substrate in cell culture.J.Biomed. Mater. Res. 2002.61: (2):197-202.

Purna Sai Korrapati., Jagannadham MV., Vairamani M., Raju NP., Sharada Devi A., Nagaraj R and Sitaram N. Tigerinins: Novel antimicrobial peptides from the Indian frog Rana tigerina. J.Biol.Chem. 2001.276: 2701-2707.

Purna Sai Korrapati. and Mary Babu. Studies on the Rana tigerina skin collagen. Comp.Biochem. and Physiol. 2001.128: 81-90.

Purna Sai Korrapati. and Mary Babu. Collagen based dressings – a review. Burns. 2000. 26: 54-62.

Purna Sai Korapati. and Mary Babu. Growth potential of Rana tigerina skin lipids in cell cultures. In Vitro cell and Dev.Biol. (A). 1998.34: 561-567.

Purna Sai Korrapati. Neelakanta Reddy and Mary Babu..Investigations on wound healing by using amphibian skin. Indian J.Exp.Biol. 1995.33:673-676.

Awards & Honours

Student was conferred Young Scientist Research Award (I runner up) by K.V.Rao Scientific Society for the year 2014-15 in the field of Biology.

Awarded Long Term Research Fellowship by ICMR (2014-2015) to collaborate and work in National University of Singapore, Singapore.

Research work has been recognized during the young scientist seminar competitions conducted by CSIR-CLRI and awarded 1st prize in the years (2008, 2011, 2014, 2017, 2019).

Deputation to Newark (United States of America) for a training program in application of Electric cell-substrate impedance sensing system (ECIS ) by Nobel laureate Prof. Ivar Giaever and Prof. Charles R. Keese at Applied Biophysics. Cellular behavior such as cell motility, Membrane capacitance and wound healing assays can be quantitatively determined in vitro using this sensor.

Visited Koln (Germany) for Presenting the research findings in the European Tissue Repair Society meetings.

Awarded the Best Young Scientist sponsored by the Department of Science and Technology for the presentation on the Biomedical potential of Amphibian Skin at the Golden Jubilee National Symposium of the Zoological Society, Calcutta.

Awarded the best presentation award for the antiangiogenic principle work.

Deposited sequence of GAPDH and Endostatin from the frog Polypedates maculatus in GenBank. GenBank accession no for GAPDH: HM 582443.1 and Endostatin: HM802308.1

Obtained Caithness Medal, Prof. Dr S.G. Manavala Ramanujam and University of Madras Students Club Endowment Awards for Standing First in M.Sc. degree Examination of the University of Madras in 1993.

Recipient of Union Medals for Proficiency in M.Sc. Zoology University Examination, Ethiraj College for Women, Chennai.

Passed Junior Research Fellowship and National Lectureship (NET) in Council of Scientific and Industrial Research and U.G.C. Joint Examination held in December, 1992 even before completing M.Sc. Final Examination.

Merit certificate and scholarship for the first few top-rankers at All India Level in Class XII from C.B.S.E., New Delhi.

Shri. V. L. Ethiraj Medals for proficiency for the best outstanding student in both B.Sc. and M.Sc.

Prof. Tmt. Varanasi Varalakshmi Special Prize for Sanskrit and Certificate of Merit for topping in Sanskrit in the University Examination in B.Sc. I and II Years (1989-1990).

Shri. O.T. Raghavan Gold Medal for Proficiency in Cytogenetics in B.Sc.

Shri. T.N. Rajan Gold Medal for Proficiency in Zoology in B.Sc.

Smt. V. K. Prema Endowment Prize for best outstanding student in Zoology for three years in B.Sc.

Selected for the National Scholarship by the Ministry of Human Resource Development, Government of India for meritorious candidate in B.Sc. Zoology Examination in March 1991.

Selected and underwent internship under Tamilnadu National Science Talent Promotion Scheme in 1990 in Research and Industrial Methodology of the University of Madras (mainly at the Department of Zoology, University of Madras and associated Institutes).