

VIJAYASHREE NAYAK

Associate Professor

Ph.D., MAHE Manipal 1998

M.Sc., MAHE, Manipal 1993

Zuarinagar, Goa - 403726

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Department of Biological Sciences

BITS Pilani, K.K Birla Goa Campus

Ph.D. Thesis Title: “Anticancer activity of Tenosporacordifolia on HeLa cells in response to ^{60}Co gamma radiation and without radiation”

Research Interest: Our lab broadly focuses on couple of aspects like molecular mechanisms in Cancer and therapeutic applications of Tissue engineering. Current goal of our research is to obtain a detailed molecular understanding of cell cycle regulation loss and epithelial mesenchymal transition (EMT) in certain cancers. From various known factors responsible for progression towards cancer, we are particularly concerned with the role of chronic infections and bacterial mediated carcinogenesis. Our interest also lies in developing novel scaffolds for cell culture in tissue engineering applications and drug screening for anticancer activity.

Teaching Interest: Medical Microbiology, Human Genetics, Stem Cell Biology, Neurobiology, Human Genetics, Clinical and Molecular aspects of cancer

Educational Record:

Qualification/Degree (Mention Below)	Name of Degree	Univ./ Board	Discipline	Year of Passing
Secondary	SSLC	State Board		1985
(10+2)/Senior Secondary	PUC	State Board	PCMB	1987
Bachelors	B.Sc	Mangalore University	BZC	1990
Masters	M.Sc	Kasturba Medical College, Manipal	Medical Microbiology	1993
Ph.D.	Ph.D	MAHE, Manipal	Cancer Cytogenetics	1998

Ph.D. Thesis Title: “Anticancer activity of Tenosporacordifolia on HeLa cells in response to ^{60}Co gamma radiation and without radiation”

Name of the Advisor: Dr.Ganesh Chandra Jagetia

Employment record:

a) Associate Professor; Biotechnology, March 08 to March 09

Rajalaxmi College and Research Institute, Chennai

b) Professor: Industrial Biotechnology, MGR University, Chennai, May 07 to March 08

- b) Assistant Professor - Bio Technology; Oct'02- May 07
Sri Ramachandra Medical University, Chennai, India
- c) Research Associate- Biomedical Research; July'01- Mar'02
King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia
- d) Senior Research Fellow- Laser Technology; June'99- Jul'01
Department of laser technology, Manipal Academy of Higher Education (MAHE), (DU)
- e) Lecturer-Microbiology; Kasturba Gandhi College for
Women, Secunderabad, AP, India, Jun'98- May'99

Administrative experience:

- a) Nucleus Member: General Administration , Jan 2011 to March 2012
- b) Non resident Warden: CH4 Hostel, 2010 till date
- c) Senate Member: May 2013 onwards

Assignments handled on behalf of dept/institt:

Complete List of publication:

1. Yogesh D. Walwalkar¹, Rajni Gaiind² and Vijayashree Nayak¹ Study on Salmonella typhi occurrence in gall bladder of patients suffering from chronic cholelithiasis- a predisposing factor for carcinoma of gall bladder; Diagnostic Microbiology and Infectious Disease;2013 (Accepted)
2. Three dimensional supermacroporouscarrageenaan-gelatincryogel matrix for tissue engineering applications; Archaa Sharma, SumritaBhat, TanusreeVishnoi, vijayashreeNayak and Ashok Kumar; Biomed Research International, 2013 (Accepted)
3. Ganesh Chandra Jagetia¹ and **Vijayashree Nayak**² Activity by Accelerating Chromosome Damage in HeLa Cells Exposed to Different Doses of γ -Radiation, Medicinal and Aromatic Plant Science and Biotechnology ©2012 Global Science Books Accepted: 29 June, 2012
4. Krishnamurthy Nayak, **VijayashreeNayak** and Deccaraman M. Article: Formulating a Mathematical Model for the E-Nose Application through Genetic Algorithm (GA). International Journal of Computer Applications 51(1):7-13, August 2012
5. Krishnamurthy Nayak¹, Supreetha B.S.², Deccaraman M³, **Vijayashree Nayak**¹; E-Nose System to Detect E-Coli in Drinking Water of Udupi District; International journal of Engineering Research and Development, ISSN:2278:067X, Vol 1, issue 12 (July 2012), PP 58-64
6. Archana Sharma¹, Tanushree Vishnoi², Deepti Singh², **Vijayashree Nayak**¹ and Ashok Kumar^{2*} Three-Dimensional Carrageenan-Gelatin and PEG-Gelatin Supermacroporous Cryogel Matrix as New Design of Biomaterials, International proceedings, IIT Rourkela
7. Singh, Deepti; Tripathi, Anuj; **Nayak, Vijayashree**; Kumar, Ashok ; Proliferation of Chondrocytes on a 3-D Modelled Macroporous Poly(Hydroxyethyl Methacrylate)-Gelatin Cryogel, Journal of Biomaterials Science, Polymer Edition, Volume 22, Number 13, June 2011 , pp. 1733-1751(19)
8. L. Nirmala¹, VijayashreeNayak², SanjayKumarDhaker³ and Deccaraman; Immunization strategies and enhanced immunity of typhoid vaccine using potato starch polymer as an Adjuvant, Indian Journal of Science and Technology, Vol. 4 No. 4 (April 2011) ISSN: 0974- 6846
9. L. NIRMALA*, VIJAYASHREENAYAK¹ DEECARAMAN², IMMUNOEVALUATION OF TYPHOID ANTIGEN BY USING POTATO STARCH NATURAL BIODEGRADABLE POLYMER AS A SINGLE CONTACT USED AS AN ADJUVANT, **Research Article**, International Journal of Pharmacy and Pharmaceutical Sciences, ISSN- 0975-1491, vol 3, issue 4.2011

10. Deepthi Singh, **Vijayashree Nayak** and Ashok Kumar; Proliferation of Myoblast cells on three dimensional supermacroporous cryogels, International journal of Biological Sciences, July 2010, 6(4), 371-381.
11. V Anandan, **V. Nayak**, S. Sundaran, P. Srikanth An association of Alternaria alternata and Scopulariopsis brevicaulis in cutaneous phaeohyphomycosis Indian J of Dermatology Leprosy and Venerology (IJDVL) 245-248, 2008
12. Naveen Prasad, Viswanathan, Renuka Devi, **Vijayashree Nayak**, Johanna Rajkumar and Parthasarathy: Quantification of major phytochemicals present in Samanea saman. Plant Archives (November issue), Journal of Medicinal plants Research, Vol (9), 2008
13. Naveen Prasad, Viswanathan, Renuka Devi, **Vijayashree Nayak**, Johanna Rajkumar and Parthasarathy: Evaluation of antimicrobial properties of Samanea saman. Asian Journal of Microbiol. Biotech. Env. Sc., 2009, Vol 10, No. (4): 195-197
14. Naveen Prasad, **Vijayashree Nayak** et al: Evaluation of antimicrobial properties of Samanea saman. Asian Journal of Microbiol. Biotech. Env. Sc., Vol 10, No. (4), 2008: 195-198
15. **Vijayashree Nayak**, Deepthi Singh; Chondrocyte culture, characterization and growth on collagen scaffold biomaterials, Medical journal of D.Y Patil University MDYPU, Vol II, issue No.3, 2009
16. G.C. Jagetia and **Vijayashree N** (2001): Effect of Doxorubicin on cell survival and micronuclei formation in the cells exposed to different doses of gamma radiation. Straltherapy and Oncology, 176, 9, 422-28.
17. **Vijayashree N** and Karta V (2000) Spectroscopic study on Drug Characterisation and Quantitation: Proc. Nat. Las. Sym-NLS 2000, Pp: 313-14
18. G.C. Jagetia and **Vijayashree N** (1998): Evaluation of the antineoplastic activity of guduchi (Tinospora cordifolia) in cultured HeLa cells. Cancer Lett., 1998, 15, 127, 71-82.
19. G.C. Jagetia and **Vijayashree N** (1997): Micronuclei induction and its correlation to cell survival in HeLa cells treated with different doses of adriamycin, Cancer Lett., 110, 123-128.
20. G.C. Jagetia and **Vijayashree N** (1996): Treatment of mice with a novel antineoplastic agent taxol before irradiation increases the frequency of micronuclei in the bone marrow, Mutation Research, 349, 219-227

ORAL/POSTER PRESENTATIONS IN THE CONFERENCE

1. Archana Sharma, Ashok Kumar, Vijayashree Nayak: Gelatin-chitosan scaffolds for neural tissue Engineering, BIND-12, young researchers session, Dec 9th to 11th 2012, IISC. Bangalore
2. Prynka Dwivedi, Ashok Kumar, Vijayashree Nayak: gelatin chitosan scaffolds for cartilage cells, BIND-12, young researchers session, Dec 9th to 11th 2012, IISC. Bangalore
3. Archana Sharma, Ashok Kumar, Vijayashree Nayak: Preparation of hybrid scaffolds for neural tissue engineering, IIT, Rourkela
4. **Vijayashree N** & Manoj Hariharan "Therapeutic applications of nano gold particles" Symposium on Nano Materials and their Applications, Ferguson College, Pune, March 4th to 6th, 2009.
5. **Vijayashree N** & Deepthi "Chondrocyte culture on Collagen matrices" International Conference on Biomedical Engineering & Nanotechnology (on 21st to 23rd Oct, 2008), Kolhapur, Pune.
6. -Krishnamurthy N, **Vijayashree N** et al (2007) "Study of the effect of electro magnetic radiation over GST enzyme of the Swiss albino mice" in Indo-US symposium on engineering analysis and stimulation at Bangalore
7. -D Singh and **Vijayashree N** (2006) "Chondrocyte culture on 3D collagen matrices" International conference on design of biomaterials & XVII annual meeting of society for biomaterials and artificial organs, India, Dec 8-11, 2006
8. **Vijayashree N** et al, Effect of Taxol as an anticancer agent in mouse model, International conference on radiobiology (2005), Dept of Radiobiology, KMC Maniapl, India

9. -Krishnamoorthy N, **vijayashree N** et al (2008) EMG signal analysis for hand prosthetic Control, International conference in Vellore Institute of Technology, Tamilnadu
10. - **Vijayashree N** et al (2007) "Intiation of Bovine cartilage cell culture on collagen matrix In Vitro", International Conference on "Biomaterials, Biomodelling, Tissue Engineering & Therapeutic Applications". Bangalore
11. -**Vijayashree N** et al "Design of an Electrohydrodynamic Ion-Drag Micropump using Intellisuite as a tool", International conference in Bangalore
12. - Nirmala L and **Vijayashree N** (2007) Immunomodulation in combined usage of Hepatitis B surface antigen and Tetanus Toxoid as a single contact by using Chitosan Microparticles as a carrier particle, Loyola College, Chennai
13. - **Vijayashree N**, et al (2005) Rare lesion and rarer fungi, Oct 20-21, Microcon 2005, SRMC & RI, Chennai, India.
14. - **Vijayashree N** et al "Dose dependent anticancer activity of Cisplatin in HeLa Cells-A Invitro study" International symposium on Cellular and Molecular Medicine, Feb 27-29, CMC, Vellore, Chennai, India
15. - **Vijayashree N** et al National Confernce on "Leptospirosis" Madras Medical College, Chennai
16. - **Vijayashree N** et al National Conference on "Nosocomial infection and antibiotic susceptibility pattern" 2004, University of Pondichery, India
17. - **Vijayashre N** et al International conference on radiobiology, Dept of Radiobiology, KMC Manipal, India

List of PhD:

1. Deepthi Singh, Dr.MGR University, Chennai (Ph.D Awarded, 2011)
2. Mr.KrishnamoorthyNayak, MGR University, Chennai (thesis Submitted, 2013)
3. Ph.D. in progress, BITS Goa:
 1. Archana Sharma
 - 2.PriyankaDwiwedi,
 3. YogeshWalwalkar

List of funded projects:

1. Biodegradable scaffold for cartilage tissue engineering Funding Agency: BRNS Rs.23.00Lakhs
2. Advanced study to find out the correlation between S.typhi infection and gall bladder cancer Funding Agency: ABSTC, Rs.10.00Lakhs
3. A New 3D scaffold for tissue engineering and biomedical applications RIG: BITS, 2.00Lakhs

List of courses taught:

2009, SEM 1: Molecular and cell Biology, General Biology, Instrumental Methods of Analysis
 2010, SEM 11: General Biology, Microbiology Laboratory, Molecular Immunology
 2010, SEM 1: General Biology, IMA, Molecular Immunology
 2011, Sem 11: Molecular Immunology, General Biology, Measurement Techniques 1
 2011, Sem 1: Molecular Immunology, Stem Cell Biology, Instrumental Methods of Analysis
 2012, Sem 11: Animal Cell Techology, Molecular Immunology, Measurement Techniques 1
 2012, Sem 1: Biology Laboratory, Stem Cell and Regenerative Medicine, Molecular Immunology, IMA
 2013, Sem11: General Biology, Molecular Immunology, Biology Laboratory

ME, BTech students advised (with name, year of graduation, title)

Research Practice 1:2011H129009G; M.E. Biotech; RaghavendraPrasad Suryavanshi
Higher Degree Course work; 2011H129009G; M.E. Biotech; RaghavendraPrasad Suryavanshi
Research Practice 1:M.E. Biotech; Shibani Prasad Dash,2011
Research Practice 1 and 11: M.E. Biotech; Sukrita, 2013

LAB ORIENTED PROJECT:

2009B1A1601G;Naveena M: Symbiosis of Nitrogen fixing bacteria with plants and use of them as fertilizers

Gayathri; Cell and tissue culture; testing of anticancer activity

Nischay Isaac; Tissue Engineering

Megha Sharma; Cell and tissue culture

READING COURSE:

2012-2013: C382

1. 2008B1A1680G; KUNCHAPARTHI VAMSI; Study of Diabetes through metabolic Control Analysis
2. 2009B1A8319G; BONAGIRI SRIMAN; Study of Diabetes through metabolic Control Analysis
3. 2009B1A8661G; Srikanth Jammy, Neurobiology
4. 2009B1A1395G; Shashibhushan, Neurobiology
5. 2009B1A4628G; Vibhor Atreya, Neurobiology
6. 2009B1A1270G; Ankith Jain, Neurobiology
7. 2009B1A8155G; Suresh Kashikar, Neurobiology
8. 2009B1A3668G; Bharani Krishna, Neurobiology
9. 2009B1A8161G; Raghav Nyati, Neurobiology

STUDY ORIENTED PROJECT:

2010-2011

2009B1A13954; Shashi Bhushan: Quinolones resistant genes in E.coli

2009B1A8661G; Srikanth Jammy, Fluoro quinolone resistance genes in E.coli

2009B1A8664G; Chintan Zalani: S.typhi role in cancer

2009B1A8669G; Nilabh Sinha: S.typhi in cancer

2009B1A3331G; Neurotransmitters in facial expressions

2011H1290064; Nikhil Kulkarni

2009B1A1186G; Archana Naphade

2011-2012

2009B1A8636G; Vijay Kiran

2009B1A8161G; Raghav Nyati

2009B1A8319G; BONAGIRI SRIMAN

Vamsi; Growth promoting factors and signaling mechanism in cartilage tissue engineering

Maurya; Hepatocellular stem cell and cell signaling pathways

Raghavendra; Sources of Hepatocellular stem cell and application

Ayush; Growth factors in hepatocellular regeneration

Sriman; Diabetes-drug target in vivo and in vitro models

Srivastav; muscle and liver glycogen phosphorylase in vitro model

2012-2013

Need to be uploaded

COMPUTER ORIENTED PROJECT:2011-2012

2008B4A3083G; KeshavnishJaini
2008A3PS5026G; AkhilOswal
2009B1A8161G; RaghavNyati
2009B1A8664G; ChintanZalani, Computational data on DNA slicing

Contribution to the profession:

1. Arranged Guest Lectures
2. Institutional Collaborations
3. Introduced PS Station: Funskool India Ltd., Corlim, Goa
2011, 5 Students
2013, 10 students
4. WILP Duty
5. Institutional Collaborations: IIT Kanpur, Dr. Ashok Kumar
Safdurjung Hospital, New Delhi
6. Research scholars deputed for Research Training:
IIT Kanpur: PriyankaDwiwedi, Archana Sharma
ICMR and Safdurjung Hospital, New Delhi, NCBS Bangalore: YogeshWalwalkar
7. ACB Mentor: (2011 to 2012)
2010B2PS663G; GaddePratyush Kumar
2010 A8PS340G; DilbharRoshan
2011B2PS698G; Jome B John