

## CURRICULUM VITAE

**DR. PRADEEP KUMAR NAIK**

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### **EDUCATION:**

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- **Doctorate of Science (D.Sc.) in Life Science (October, 2015)**
  - Sambalpur University, Odisha, India
  - Thesis title: ‘**Rational design, chemical synthesis and experimental evaluation of novel tubulin-binding noscapinoids as potent anti-cancer drugs**’
- **Post Doctorate (July 2010 to July 2011)**
  - Emory University School of Medicine, Atlanta, Georgia, USA as BOYSCAST Fellow
  - Rational design of potent noscapine derivatives, their chemical synthesis and biological evaluation as anti-cancer drugs
- **Advanced P.G. Diploma in Bioinformatics (2003)**
  - Jawaharlal Nehru University, New Delhi, India
- **Doctor of Philosophy (Ph. D.) in Life Science (2001)**
  - Sambalpur University, Odisha, India
  - Thesis title: ‘**Role of ethylene in spikelet development of rice**’
- **Master of Philosophy (M. Phil.) in Life Science (1995)**
  - Sambalpur University, Sambalpur, Odisha, India
- **Master of Science (M. Sc.) in Life Science (1994)**
  - Sambalpur University, Odisha, India
- **Bachelor of Science (B. Sc.) in Botany Honours (1992)**
  - Sambalpur University, Odisha, India

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### **ACADEMIC / TEACHING EXPERIENCE:**

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- **Professor**, School of Life Sciences, Sambalpur University, Odisha, India, **23<sup>rd</sup> December to present**
- **Associate Professor**, Department of Biotechnology, Guru Ghasidas Vishwavidyalaya (A Central University), Bilaspur, Chhattisgarh, India, **7<sup>th</sup> February 2014 - 22<sup>nd</sup> December 2015**
- **Associate Professor**, Department of Biotechnology & Bioinformatics, Jaypee University of Information Technology, Solan, Himachal Pradesh, India, **1<sup>st</sup> August 2011 - 5<sup>th</sup> Feb, 2014**
- **Assistant Professor**, Department of Biotechnology & Bioinformatics, Jaypee University of Information Technology, Solan, Himachal Pradesh, India, **1<sup>st</sup> July 2008 – 31<sup>st</sup> July 2011**
- **Senior Lecturer**, Department of Biotechnology & Bioinformatics, Jaypee University of Information Technology, Solan, Himachal Pradesh, India, **1<sup>st</sup> July 2005 – 30<sup>th</sup> June 2008**
- **Lecturer**, Department of Biotechnology & Bioinformatics, Jaypee University of Information Technology, Solan, Himachal Pradesh, India, **1<sup>st</sup> January 2004 – 30<sup>th</sup> June 2005**
- **Associate Lecturer**, Department of Biotechnology & Bioinformatics, Jaypee University of Information Technology, Solan, Himachal Pradesh, India, **3<sup>rd</sup> July 2003 – 31<sup>st</sup> December 2003**
- **BOYSCAST Fellow**, Emory University School of Medicine, Atlanta, Georgia, USA, **26<sup>th</sup> July 2010 – 24<sup>th</sup> July 2011.**
- **Senior Research Fellow**, CSIR, Sambalpur University, Odisha, India, **1<sup>st</sup> Dec 2000 – 31<sup>st</sup> Dec 2001**
- **Research Associate**, ICAR, Sambalpur University, Odisha, India, **Dec 1997 – Sept 1999**
- **Junior Research Fellow**, ICAR, Sambalpur University, Odisha, India, **Nov 1996 – Dec 1997**

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**ACADEMIC HONORS AND AWARDS:**

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- Recipient, **BOYSCAST Fellowship**, Govt. of India, Department of Science and Technology, **2009**
- Recipient, Sarojini G. Panigrahi Young Scientist Award, Orissa Botanical Society, **1997**
- CSIR-UGC Junior Research Fellowship and Eligibility for Lectureship (JRF-NET), **2001**
- Senior Research Fellowship, CSIR, **Dec. 2000 to Dec. 2001**
- National Merit Scholarship, Sambalpur University, **1992 to 1994**
- ASRB National eligibility test for Assistant Professorship, **1998 & 2001**
- Graduate Aptitude Test for Engineering (GATE), Life Sciences, **1996**

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**HIGHLIGHTS OF PROFESSIONAL EXPERIENCE:**

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**Ph.D. STUDENTS SUPERVISED: 09**

Name of Scholar	Thesis Title	Notification Number	Date of award
Charu Suri	Insight into nucleation of microtubules to realize novel drug targets	JUIT/WKG/2014-15/014	13.03.2015
Seneha Santoshi	Computer aided design of novel noscapinoids and their experimental evaluation as tubulin binding anti-cancer drugs	JUIT/WKG/2014-15/001	20.08.2014
Dipankar Sengupta	Translational and high end computing of clinical data in India	JUIT/WKG/2013-14/014	28.03.2014
Rajani Kant Mahapatra	Computational study of histo-aspartic protease (HAP) and artemisinin-quinine hybrid: interaction, mechanism and antimalarial activity	6259/EC.III of SU	06.02.2013
Jitendra Kumar	Assessment of genetic diversity and artemisinin content among genotypes of <i>Artemisia annua</i> and related species from the Ladakh region, India	JUIT/WKG/2011-12/003	22.03.2012
Manish S. Bhojar	Molecular and phytochemical characterization and optimization of dormancy breaking treatment in <i>Capparis spinosa</i> L. from the Trans Himalayan region of Ladakh, India	JUIT/WKG/2011-12/006	07.04.2012
Shruti Jain	Communication of signals and responses leading to cell survival/cell death using engineered regulatory networks	JUIT/WKG/2011-12/007	12.05.2012
Mani Srivastava	Computational modeling of artemisinin and its structural derivatives: mechanism, interaction and predictive activity	JUIT/WKG/2010-11/007	17.02.2011
Md. Afroz Alam	Study of genetic variations in <i>Podophyllum hexandrum</i> and computational screening of podophyllotoxin analogues	JUIT/WKG/2009-10/005	23.11.2009

**M.Tech. STUDENTS SUPERVISED: 10**

Name of Scholar	Thesis Title	Year
Manya Sharma	Elucidating the precise interaction of activated protein C and angiotensin II with receptor tyrosine kinase2	2013
Setu Taliyan	SiteMatch: an online tool for comparison of protein binding site	2013
Suhani Nagpal	Prediction and validation of therapeutic targets of <i>Mycobacterium tuberculosis</i> using comparative genomics and metabolomics	2012

Tanu Verma	Molecular modelling evaluation of the insecticide activity of organophosphates, carbamates, cyclodienes and analogues	2012
Varun Dhir	Physico-chemical characterisation of DNA sequences	2012
Tanvi Saini	Rational design of novel tubulin binding anticancer agent based on chemoinformatics evaluation of noscapinoids	2012
Kashika Gupta	Mitogenomics to avoid inbreeding in endangered pheasant species of Himalayan region	2010
Navneet Kaur	PredSi: A tool for designing and predicting knockdown efficiency of SiRNA	2010
Seneha Santoshi	Computational identification of unique therapeutic drug targets in bacterial pathogens and designing lead molecules	2009
Mani Srivastava	Biochemical and molecular characterization of different cultivars of <i>Jatropha curcus</i> using ISSR and RAPD markers	2008

**Number of B.Tech (Biotechnology & Bioinformatics) Students Supervised: 96**

**RESEARCH PROJECTS RECEIVED: 12**

Funding Agency	Title of Project	Project cost	Project duration	Status
DBT	Identification of intermediate metabolites for linking missing links in the biosynthetic pathways of desired chemical constituents in target plant species. <b>Principal Investigator</b>	68.65 lakhs	Sept 2010 - Sept 2015	Completed
DRDO	Toxicological evaluation of herbal formulations: (a) herbal performance enhancing capsules (PerfoMax), (b) herbal adaptogenic appetizer, (c) herbal tea and (d) seabuckthron oil based soft gel capsule. <b>Principal Investigator</b>	8.49 lakhs	Dec 2012- Dec2013	Completed
DRDO	Genetic characterization, chemical profiling and optimization of parameters for artemisinin yield in <i>Artemisia annua</i> from the Ladakh region. <b>Principal Investigator</b>	9.50 lakhs	April 2009 - April 2011	Completed
DST	Study of population structure of <i>Podophyllum hexandrum</i> using biochemical and molecular markers. <b>Principal Investigator</b>	10.32 lakhs	Feb. 2006 - Feb. 2009	Completed
DRDO	Development of business intelligence model of army personnel's at higher altitude. <b>Co-Investigator</b>	9.90 lakhs	July 2012 - July 2014	Completed
DST	Genetic analysis to avoid inbreeding of the endangered Western Tragopan in the aviaries of Himachal Pradesh. <b>Co-Investigator</b>	11.5 lakhs	April 2012 - March 2015	Completed
DRDO	Fabrication of energy harvesting prototypes using piezoelectric materials. <b>Co-Investigator</b>	9.68 lakhs	Sept. 2012 - Sept. 2014	Completed
DBT	Establishment of an assay using human embryonic stem cell derived cardiac precursors from KIND2 cells for cytotoxicity testing. <b>Co-Investigator</b>	45.0 lakhs	April 2013 - Sept. 2014	Completed
DBT	Chemical profiling of turmeric from different agroclimatic regions and optimization of environmental parameters for high curcumin yield. <b>Co-Investigator</b>	34.52 lakhs	Feb. 2013 - Feb. 2016	Ongoing
DBT	Development of a standardized herbal product for urolithiasis from <i>Tribulus terrestris</i> and <i>Achyranthes aspera</i> , <b>Co-Investigator</b>	26.2 lakhs	May 2008 - May 2011	Completed
DBT	Development of candidate gene markers (SNPs & SSRs) for <i>Jatropha (Jatropha curcas)</i> by utilizing genome resources of Castor Bean ( <i>Ricinus communis</i> ). <b>Co-Investigator</b>	41.92 lakhs	July 2007- July 2010	Completed

**RESEARCH PROPOSAL PUT UP FOR FUNDING : 01**

1. Design and synthesis of potent, antibody-conjugatable analogues of the tubulin binding anticancer product  $\beta$ -sitosterol and their preclinical evaluation against HER2+ breast cancer. (**Project proposal submitted to DBT, Ref. No.: BT/PR15463/TRM/120/76/2015, Total amount Rs. 157.5 lakhs**).

#### **RESEARCH ACHIEVEMENTS:**

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- Rational design and development of synthetic derivatives from natural lead (e.g. Noscapine,  $\beta$ -sitosterol, etc.) as potent tubulin-binding, less toxic, anti-cancer therapeutic agents.
- Assessment of genetic diversity of medicinal plants, phytochemical profiling of medicinal plants and product development for therapeutic application, DNA bar coding of plants and animal species.
- Protein modeling, computer aided molecules design, biological sequence analysis and clinical bioinformatics.

#### **PUBLISHED AND ACCEPTED RESEARCH ARTICLES IN JOURNALS:**

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**Total Publications: 110 (International: 78, National: 32)**

1. Kumar M, **Naik PK**, Sarla, Chhokar V (2016). Genetic variations in *Asparagus racemosus*, an endangered medicinal herb endemic to India using RAPD markers. **British Biotechnology Journal**, 10(2): 1-11. [ISSN: 2231-2927]
2. Santoshi S, Manchukonda NK, Suri C, Sridhar B, Joseph S, Lopus M, Kantevari S, Baitharu I, **Naik PK\*** (2015) Rational design of biaryl pharmacophore inserted noscapine derivatives as potent tubulin binding anticancer agents. **Journal of Computer Aided Molecular Design**, 29: 249-270. [ISSN: 0920-654X, IF: 3.172, Citation: 2]
3. Suri C, Joshi HC, **Naik PK\*** (2015) Molecular modeling reveals binding interface of  $\gamma$ -tubulin with GCP4 and interactions with noscapinoids. **Proteins: Structure, Functions and Bioinformatics**, 83: 827-843. [ISSN: 0887-3585, IF: 3.337, Citation: 2]
4. Suri C, **Naik PK\*** (2015) Combined molecular dynamics and continuum solvent approaches (MM-PBSA/GBSA) to predict noscapinoid binding to  $\gamma$ -tubulin dimer. **SAR & QSAR in Environmental Research**, 26(6): 507-519. [ISSN: 1062-936X, IF: 1.667]
5. Mahaddalkar T, Suri C, **Naik PK**, Lopus M (2015) Biochemical characterization and molecular dynamic simulation of  $\beta$ -sitosterol as a tubulin-binding anticancer agent. **European Journal of Pharmacology**, 760: 154-162. [ISSN: 0014-2999, IF: 2.592].
6. Aggarwal H, Rao A, Kumar A, Singh J, Rana JS, **Naik PK**, Chhokar V (2015) Assessment of genetic diversity among 125 cultivars of Chickpea (*Cicer arietinum* L.) of Indian origin using ISSR markers. **Turkish Journal of Botany**, 39: 218-226. [ISSN: 1300-008X, IF: 1.60]
7. Das P, Mohanty S, Swain D, Sahoo P, Das G, **Naik PK**, Hota SK, Bordoloi MJ, Rao HBDP (2015) *Typhonium trilobatum* (L.) Schott shows potency against lymphatic filariasis in man. **International Journal of Indigenous Medicinal Plants**, 48(1): 1821-1826. [ISSN: 2051-4263, IF: 3.52]
8. Kumar R, **Naik PK**, Kumar A, Aggarwal H, Kumar A, Chhokar V (2015) A combined approach using RAPD, ISSR and bioactive compound for the assessment of genetic diversity in *Aloe vera*. **Indian Journal of Biotechnology** (Accepted). [ISSN: 0972-5849, IF: 0.477]
9. Aggarwal H, Rao A, Kumar A, Singh J, Rana JS, **Naik PK**, Chhokar V (2015) Evaluation of genetic divergence and phylogenetic relationship using sequence-tagged microsatellite (STMS) sequences in Chickpea (*Cicer arietinum* L.) genotypes. **African Journal of Biotechnology**, 14(45): 3051-3061 [ISSN: 1684-5315]
10. Singh C, Pradhan JK, Singh S, Thakur A, **Naik PK**, Singh H (2015) Biosynthesis and antibacterial activity of silver and gold nanoparticles using Liquorice root: A green chemistry approach. **Journal of Colloidal Science and Biotechnology** (Accepted). [ISSN: 2164-9634]
11. Baitharu I, Jain V, Deep SN, **Naik PK**, Ilavazhagan G (2014) Withanolide A prevent neurodegeneration by modulating hippocampal glutathione biosynthesis during hypoxia. **PLoS One**, 9(10): e105311. [ISSN: 1932-6203, IF: 3.73, Citation: 4]

12. Santoshi S, **Naik PK\*** (2014) Molecular insight of isotypes specific  $\beta$ -tubulin interaction of tubulin heterodimer with noscainoids. **Journal of Computer Aided Molecular Design**, 28:751-763. [ISSN: 0920-654X, IF: 3.172, Citation: 3]
13. Suri S, Hendrickson TW, Joshi HC, **Naik PK\*** (2014) Molecular insight into  $\gamma$ - $\gamma$  tubulin lateral interactions within the  $\gamma$ -tubulin ring complex ( $\gamma$ -TuRC). **Journal of Computer Aided Molecular Design**, 28(9): 961-972. [ISSN:0920-654X, IF: 3.172, Citation: 2]
14. Manchukonda NK, **Naik PK**, Sridhar B, Kantevari S (2014) Synthesis and biological evaluation of novel biaryl type  $\alpha$ -noscainone congeners. **Bioorganic & Medicinal Chemistry Letters**, 24(24): 5752-5757. [ISSN: 0960-894X, IF: 2.331, Citation: 1]
15. Lopus M, **Naik PK** (2014). Taking aim at a dynamic target: noscainoids as microtubule-targeted cancer therapeutics. **Pharmacological Reports**, 67: 56-62. [ISSN: 1734-1140, IF: 1.965, Citation: 3]
16. Raghu R, Devaraji V, Leena K, Riyaz SD, Rani PB, Kumar SB, **Naik PK**, Dubey PK, Velmurugan D, Vijayalakshmi M (2014) Virtual screening and discovery of novel aurora kinase inhibitors. **Current Topics in Medicinal Chemistry**, 14: 2006-2019. [ISSN: 1568-0266, IF = 3.453]
17. Kumar J, Bajaj P, Mishra GP, Singh SB, Singh H, **Naik PK\*** (2014) Utilization of EST-derived SSRs in the genetic characterization of *Artemisia annua* L. genotypes from Ladakh, **India. Indian Journal of Biotechnology**, 13: 464-472. [ISSN: 0972-5849, IF: 0.477]
18. Sengupta D, **Naik PK\*** (2013) SN algorithm: analysis of temporal clinical data for mining periodic patterns and impending augury. **Journal of Clinical Bioinformatics**, 3(14): 1-7. [ISSN: 2043-9113, IF: 1.71, Citation: 1]
19. Manchukonda NK, **Naik PK\***, Santoshi S, Lopus M, Sridhar B, Kantevari S (2013) Rational design, synthesis and biological evaluation of third generation  $\alpha$ -noscainone analogues as potent tubulin binding anti-cancer agents. **PLoS One**, 8(10): e77970. [ISSN: 1932-6203, IF: 3.73, Citation: 10]
20. Aggarwal KP, Tandon S, **Naik PK**, Singh SK, Tandon C (2013) Peeping into human renal calcium oxalate stone matrix: characterization of novel proteins involved in the intricate mechanism of urolithiasis. **PLoS One**, 8(7): e69916. [ISSN: 1932-6203, IF: 3.73, Citation: 2]
21. Aggarwal KP, Tandon S, **Naik PK**, Singh SK, Tandon C (2013) Novel antilithiatic cationic proteins from human calcium oxalate renal stone matrix identified by MALDI-TOF-MS endowed with cytoprotective potential: An insight into the molecular mechanism of urolithiasis. **Clinica Chimica Acta**, 415: 181-190. [ISSN: 0009-8981, IF: 2.85, Citation: 6]
22. Kar B, Nanda S, **Naik PK**, Nayak S, Joshi RK (2013) Molecular characterization and functional analysis of CzR1, a coiled-coil nucleotide binding site leucine rich repeat R-gene from *Curcuma dezoaria* (Loeb.) that confers resistance to *Pythium aphanidermatum*. **Physiological and Molecular Plant Pathology**, 83: 59-68. [ISSN: 0885-5765, IF: 1.506]
23. Joshi RK, Nanda S, Rout E, Kar B, **Naik PK**, Nayak S (2013) Molecular modeling and docking characterization of CzR1, a CC-NBS-LRR gene from *Curcuma dezoaria* (Loeb.) that confers resistance to *Pythium aphanidermatum*. **Bioinformation**, 9(11): 560-564. [ISSN: 0973-2063, IF: 0.5]
24. Sengupta D, Sood M, Vijayvargia P, Hota S, **Naik PK\*** (2013) Association rule mining based study for identification of clinical parameters akin to occurrence of brain tumor. **Bioinformation**, 9 (11): 555-559. [ISSN: 0973-2063, IF: 0.5, Citation: 1]
25. Sengupta D, Arora P, Pant S, **Naik PK\*** (2013) Design of dimensional model for clinical data storage and analysis. **Applied Medical Informatics**, 32(2): 47-53. [ISSN: 1224-5593]
26. Singh NB, Singh MK, **Naik PK**, Thakur S, Sharma JP (2013) Analysis of genetic diversity in female, male and half sibs willow genotypes through RAPD and SSR markers. **African Journal of Biotechnology**, 12(29):4578-4587. [ISSN: 1684-5315, Citation: 2]
27. Sharma M, **Naik PK\*** (2013) The mode and mechanism of interaction of angiotensin II with receptor tyrosine kinase (Tie-2) using molecular mechanics and molecular dynamics approach. **International J. Fundamental & Applied Science**, 2(1): 8-11. [ISSN: 2278-1404]

28. **Naik PK\***, Lopus M, Aneja R, Vangapandu SN, Joshi HC (2012) In silico inspired design and synthesis of a novel tubulin-binding anti-cancer drug: folate conjugated noscapine (Targetin). **Journal of Computer Aided Molecular Design**, 26 (2): 233-247. [ISSN: 0920-654X, IF: 3.172, Citation: 10]
29. Manchukonda NK, Sridhar B, **Naik PK**, Joshi HC, Kantevari S (2012) Copper(I) mediated facile synthesis of potent tubulin polymerization inhibitor, 9-amino- $\alpha$ -noscapine from natural  $\alpha$ -noscapine. **Bioorganic Medicinal Chemistry Letter**, 22(8): 2983-2987. [ISSN: 0960-894X, IF: 2.338, Citation: 8]
30. **Naik PK\***, Santoshi S, Joshi HC (2012) Noscapinoids with anti-cancer activity against human acute lymphoblastic leukemia cells (CEM): a three dimensional chemical space pharmacophore modeling and electronic feature analysis. **Journal of Molecular Modeling**, 18 (1): 307-318. [ISSN: 1610-2940, IF: 1.984, Citation: 8]
31. Gupta N, **Naik PK**, Chauhan RS (2012) Differential transcript profiling through cDNA-AFLP showed complexity of rutin biosynthesis and accumulation in seeds of a nutraceutical food crop (*Fragopyrum* spp.). **BMC Genomics**, 13(1): 231- 240. [ISSN: 1471-2164, IF: 4.397, Citation: 5]
32. Pandit S, Shitiz K, Sood H, **Naik PK**, Chauhan RS (2012) Expression pattern of fifteen genes of non-mevalonate (MEP) and mevalonate (MVA) pathways in different tissues of endangered medicinal herb *Picrorhiza kurroa* with respect to picrosides content. **Molecular Biology Report**, 40(2): 1053-1063. [ISSN: 0301-4851, IF: 2.506, Citation: 12]
33. Mahapatra RK, Behera N, **Naik PK\*** (2012) Molecular modeling and evaluation of binding mode and affinity of artemisinin-quinine hybrid and its congeners with Fe-protoporphyrin-IX as a putative receptor. **Bioinformation**, 8(8): 369-380. [ISSN: 0973-2063, IF: 0.5]
34. Singh C, Baboota RK, **Naik PK**, Singh H (2012) Biocompatible synthesis of silver and gold nanoparticles using leaf extract of *Dalbergia sissoo*. **Advanced Materials Letters**, 3(4):279-285. [ISSN: 0976-3961, IF: 1.93, Citation: 31]
35. Mahapatra RK, Behera N, **Naik PK\*** (2012) Molecular modelling and prediction of binding mode and relative binding affinity of Art-Qui-OH with *P. falciparum* Histo-Aspartic Protease (HAP). **Bioinformation**, 8(17): 827-833. [ISSN: 0973-2063, IF: 0.5]
36. Bhojar MS, Mishra GP, **Naik PK\***, Murkute AA, Srivastava RB (2012) Genetic variability studies among natural populations of *Capparis spinosa* from cold arid desert of trans-Himalayas using DNA markers. **National Academic Science Letter**, 35(6): 505-515. [ISSN:0250-541X, IF:0.067, Citation: 3]
37. Kumar A, Kumar R, Beniwal V, Kala SN, Mishra A, Raut AA, **Naik PK\***, Chhokar V (2012) Molecular differentiation of peroxysome proliferator activated receptor coactivator-1 among different breeds of *Bubalus bubalis*. **Bioinformation**, 8(13): 600–606. [ISSN: 0973-2063, IF: 0.5, Citation: 4]
38. Kumar J, Mishra GP, Murkute AA, Kumar GP, **Naik PK\***, Srivastava RB (2012) Exploring genetic relationships in *Artemisia* species growing in trans-Himalayan cold arid desert using RAPD markers. **Indian Journal of Horticulture**, 69(2):239-245. [ISSN: 0972-8538, IF: 0.125, Citation: 1]
39. Kumar J, Bajaj P, Singh H, Mishra GP, Singh SB, **Naik PK\*** (2012) Utilization of Intron-flanking EST-specific markers in the genetic characterization of *Artemisia annua* genotypes from the trans-Himalayan region of Ladakh, India. **Journal of Environmental Biology**, 33, 991-997. [ISSN: 0254-8704, IF: 0.682, Citation: 2]
40. Gupta S, Bhojar MS, Kumar J, Warghat AR, Bajpai PK, Rasool M, Mishra GP, **Naik PK**, Ravi BS (2012) Genetic diversity among natural populations of *Rhodiola imbricata* Edgew. from trans-Himalayan cold arid desert using random amplified polymorphic DNA (RAPD) and inter simple sequence repeat (ISSR) markers. **Journal of Medicinal Plant Research**, 6(3): 405-415. [ISSN: 1996-0875, Citation: 4]
41. Jain S, **Naik PK\***, Bhooshan SV (2012) Compendium model of AKT for cell survival/death and its equivalent bio-circuit. **International J. of Soft Computing and Engineering**, 2(3): 91-97. [ISSN: 2231-2307, Citation: 2]

42. Santoshi S, **Naik PK\*** (2012) A field based 3D QSAR model of novel anti-microtubule agent noscapiene and its derivatives. **International Journal of Fundamental and Applied Sciences**, 1(2): 81-87. [ISSN: 2278-1404]
43. Suri C, **Naik PK\*** (2012) Elucidating the precise interaction of reduced and oxidized states of neuroglobin with Ubc12 and Cop9 using molecular mechanics studies. **International Journal of Fundamental and Applied Sciences**, 1(2): 74-77. [ISSN: 2278-1404]
44. Jain S, Ranjan P, Sengupta D, **Naik PK\*** (2012) TpPred: A tool for hierarchical prediction of transport proteins using cluster of neural networks and sequence derived features. **International Journal of Computational Biology**, 1(1): 46-60. [ISSN: 2278-8115]
45. Jain S, **Naik PK\*** (2012) System modelling of cell survival and cell death: A deterministic model using Fuzzy system. **International Journal of Pharma and Bio Sciences**, 3(4): 358-373. [ISSN: 0975-6299, Citation: 1]
46. Jain S, Bhooshan SV, **Naik PK\*** (2012) Communication of signals and responses leading to cell death using engineered regulatory networks. **Research Journal of Pharmaceutical, Biological and Chemical Sciences**, 3(3): 492-508. [ISSN: 0975-8585]
47. Kumar A, Chhokar V, Kumar R, Beniwal V, Kala SN, Mishra A, Raut AA, **Naik PK** (2012) Molecular differentiation of mitochondrial glycerol-3-phosphate acyltransferase among different breeds of *Bubalus bubalis*. **International Journal of Pharma and Bio Sciences**, 3(4): (B) 685-694. [ISSN: 0975-6299]
48. **Naik PK\***, Chatterji BP, Vangapandu SN, Aneja R, Chandra R, Kanteveri S, Joshi HC (2011) Rational design, synthesis and biological evaluations of amino-noscapiene: a high affinity tubulin-binding noscapinoid. **Journal of Computer Aided Drug Design**, 25(5): 443-454. [ISSN: 0920-654X, IF: 3.172, Citation: 28]
49. **Naik PK\***, Santoshi S, Rai A, Joshi HC (2011) Molecular modelling and competition binding study of Br-noscapiene and colchicine provide insight into noscapinoid-tubulin binding site. **Journal of Molecular Graphics and Modeling**, 29(7): 947-955. [ISSN: 1093-3263, IF: 2.325, Citation: 23]
50. Santoshi S, **Naik PK\***, Joshi HC (2011) Rational design of novel anti-microtubule agent (9-azido-noscapiene) from quantitative structure activity relationship (QSAR) evaluation of noscapinoids. **Journal of Biomolecular Screening**, 16(9):1047-1058. [ISSN: 1087-0571, IF: 2.207, Citation: 11]
51. **Naik PK\***, Srivastava M, Bajaj P, Jain P, Dubey A, Ranjan P, Kumar R, Singh H (2011) The Binding modes and binding affinities of artemisinin derivatives with *Plasmodium falciparum* Ca<sup>2+</sup>-ATPase (PfATP6). **Journal of Molecular Modeling**, 17(2): 333-357. [ISSN: 1610-2940, IF: 1.984, Citation: 17]
52. Singh C, Sharma V, **Naik PK**, Khandelwal V, Singh H (2011) A green biogenic approach for synthesis of gold and silver nanoparticles using *Zingiber officinale*. **Digest Journal of Nanomaterials and Biostructures**, 6(2): 535-542. [ISSN: 1842-3582, IF: 1.092, Citation: 45]
53. Jain S, Bhoosan SV, **Naik PK\*** (2011) Mathematical modeling deciphering balance between cell survival and cell death using insulin. **Network Biology**, 1(1): 46-58. [ISSN: 2220-8879, IF: 0.176, Citation: 4]
54. Pathak P, **Naik PK**, Sengupta D, Singh SK, Tandon C (2011) Mode of interaction of calcium oxalate crystal with human phosphate cytidyltransferase 1: a novel inhibitor purified from human renal stone matrix. **Journal of Biomedical Science and Engineering**, 4:591-598. [ISSN:1937-6871, Citation: 5]
55. Pani A, Mahapatra RK, Behera N, **Naik PK** (2011) Computational identification of sweet wormwood (*Artemisia annua*) microRNA and their mRNA targets. **Genomics Proteomics Bioinformatics**, 9(6): 200-210. [ISSN: 1672-0229, Citation: 10]
56. **Naik PK\***, Ranjan P, Kesari P, Jain S (2011). MetalloPred: A tool for hierarchical prediction of metal ion binding proteins using cluster of neural networks and sequence derived features. **Journal of Biophysical Chemistry**, 2(2): 112-123. [ISSN: 2153-036X, Citation: 2]

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#### **BOOK CHAPTER:**

1. **Naik PK\***, Dash AK (2015) Ascertain genetic diversity of *Artemisia annua* adapted to harsh environment of Ladakh using RAPD and ISSR molecular markers. *Advances in Environmental Sciences and Engineering*, Daya Publishing House, Astral International pvt. Ltd., New Delhi, pp. 406-428. [ISBN-9789351243366]
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3. Joshi HC, Salil A, Bughani U, **Naik PK** (2011) Noscapioids: A new class of anti-cancer drugs demand biotechnological intervention. In: *Medicinal Plant Biotechnology*, Edited by Rajesh Arora, C.A.B. International, UK, (2011), pp. 303-320. [ISBN-9781845936785, Citation: 5]
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#### **PAPERS PRESENTED IN CONFERENCES, SEMINARS, WORKSHOPS, SYMPOSIA:**

1. **Naik PK** (2012). *In silico* inspired design of drug molecules with improved biological activity. International Conference on Biotechnology Advances: Omics Approaches and Way Forward, Siksha O Anusandhan University, Bhubaneswar, 20- 22 December, 2012
2. Suri C, **Naik PK** (2012). Refinement of low resolution X-ray crystallographic protein structure utilizing molecular mechanics and molecular dynamics simulation techniques. International conference on Biotechnology Advances: Omics Approaches and Way Forward, Siksha O Anusandhan University, Bhubaneswar, India, 20-22 December, 2012
3. Santoshi S, **Naik PK** (2012). A three dimensional QSAR model building utilizing structural determinants of noscapine derivatives for tubulin binding affinity prediction. International conference on Biotechnology Advances: Omics Approaches and Way Forward, Siksha O Anusandhan University, Bhubaneswar, India, 20-22 December, 2012
4. Sharma M, **Naik PK** (2012). Mode of interaction of activated protein C with receptor tyrosine kinase-2 using molecular mechanics and molecular dynamics approach. International conference on

Biotechnology Advances: Omics Approaches and Way Forward, Siksha O Anusandhan University, Bhubaneswar, India, 20-22 December, 2012

5. Jain S, **Naik PK**, Bhooshan SV (2011). Model of Protein Kinase B for Cell Survival/Death and its Equivalent Bio Circuit. In: 2nd International Conference on Methods and Models in Science and Technology (ICM2ST-11), 19-20 Nov. 2011, India, pp. 83-87
6. Jain S, **Naik PK**, Bhooshan SV (2011). Non linear Modeling of cell survival/ death using Artificial neural network. In: International Conference on Computational Intelligence and Communication Networks (CICN2011), 7-9 Oct. 2011, India, pp. 565-568 [Citation: 1]
7. **Naik PK**, Nitin, Janmeja A, Puri S, Chawla K, Bhasin M, Jain K (2011). B-MIPT: A Case Tool for Biomedical Image Processing and their Classification using Nearest Neighbor and Genetic Algorithm. In: Proceedings of the 2nd IEEE International Conference on Intelligent Systems, Modelling and Simulation (IEEE ISMS), Phnom Penh, CAMBODIA, 25-27 Jan. 2011, pp. 107-112 (ISSN: 978-0-7695- 4668-1)
10. Jain S, **Naik PK**, Chauhan DS, Sharma R (2009). Computational modelling of cell survival/ death using MATLAB simulator. In: Proceedings of the sixth international conference on information technology (IEEE computer society), Las Vegas, USA., 27-29 April 2009, pp. 64-68.
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12. Md. Afroz Alam, Aswini K. Gulati, Gyan P. Mishra & **P. K. Naik** (2008). Assessment of genetic diversity among *Podophyllum hexandrum* genotypes of Northwestern Himalayan region for podophyllotoxin production. International Conference, Novel Approaches for Food & Health Security In High Altitudes DIHAR, DRDO, Leh-Ladakh, India, September 06-10.

#### **INVITED TALKS:**

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1. Biotechnology & Bioinformatics-I & II. 13<sup>th</sup> Orientation programme organized at UGC-Academic Staff College, GGV, Bilaspur from 12<sup>th</sup> Jan. to 8<sup>th</sup> Feb, 2015.
2. Bioinformatics-I & II. 12<sup>th</sup> Orientation programme organized at UGC- Academic Staff College, GGV, Bilaspur from 12<sup>th</sup> Jan. to 8<sup>th</sup> Feb, 2014.
3. Protein structures and modeling. 10<sup>th</sup> Faculty development programme of the Department, Centre of Biotechnology, Siksha O Anusandhan University, Odisha, 2014
4. Biotechnology & Bioinformatics. 14<sup>th</sup> Orientation Programme organized at UGC-Human Resource Development Centre, Bilaspur from 11<sup>th</sup> May to 6<sup>th</sup> June 2015.

#### **NATIONAL AND INTERNATIONAL COLLABORATION:**

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1. **Dr. Usha Agarwal**, Scientist E, National Institute of Pathology, ICMR, New Delhi, “*In vitro* evaluation of compounds for anticancer activity”.
2. **Dr. Srinivas Kantevari**, Senior Scientist, Indian Institute of Chemical Technology, CSIR Institute, Hyderabad, “Chemical synthesis and structural characterization of compounds”.
3. **Dr. Manu Lopus**, Visiting Scientist-II, Department of Biology, UM-DAE Centre for Excellence in Basic Sciences, University of Mumbai campus, Mumbai, “Experimental evaluation of compounds for tubulin binding”.
4. **Dr. Sanghamitra Nayak**, Professor, Centre of Biotechnology, Siksha O Anusandhan University, Bhubaneswar, Odisha, “Genetic biodiversity of medicinal plants”.
5. **Dr. Vinod Chhokar**, Associate Professor, Department of Bio & Nano Technology, Guru Jambheshwar University of Science & Technology, “Phytochemistry and genetic characterization of plants”.

6. **Dr. Harvinder Singh**, Associate Professor, Department of Biotechnology & Bioinformatics, Jaypee University of Information Technology, Himachal Pradesh, “DNA bar coding of plants and animals samples”.
7. **Dr. Chanderdeep Tandon**, Professor, Department of Biotechnology & Bioinformatics, Jaypee University of Information Technology, Himachal Pradesh, “Demineralization of kidney stones by plant extract”.
8. **Dr. Naidu Subbarao**, Associate Professor, Centre for Computational Biology and Bioinformatics, JNU, New Delhi, “Molecular simulations of protein-ligand and protein-protein complexes”.
9. **Dr. Harish Chandra Joshi**, Associate Professor, Department of Cell Biology, Emory University School of Medicine, Georgia, USA, “Structural organization of microtubule complexes as potent target for anti-cancer drug development”.
10. **Dr. Sunil Hota**, Scientist D, Defense Institute of High Altitude Research, DRDO, “Animal experiments for toxicological evaluation”.

#### **MANUSCRIPT REVIEWER FOR:**

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Expert reviewer for various scientific journals: Molecular Pharmaceutics; PLoS ONE; BMC Bioinformatics; Industrial Crop and Products; Molecular Modeling; Current Chemical Biology; Molecular Diversity; SAR QSAR in Env. Research; Recent Patents on DNA and Gene Sequence; BMC Cancer Biology; Drug Design, Development and Therapy; Plant Omics Journal; Current Computer Aided Drug Design; Indian Journal of Biotechnology; Journal of Biophysical Chemistry, Proteins: Structure, Functions and Bioinformatics

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