

DEPARTMENT OF BIOTECHNOLOGY

INTRODUCTION

Department of Biotechnology was established in the year 2002 and commenced offering UG programme- B.Tech in Bio-Technology with an initial intake of 30 students which has been increased to 60 currently. The Department has highly qualified faculty and well equipped laboratories, striving to incorporate excellence in theory and practice The well-equipped laboratories are Biochemistry, Microbiology, Bioprocess Engineering, Downstream Processing, Genetic Engineering and Instrumental methods of analysis.

The vision of the department is to create a center for imparting technical education of international standards and conducting research with cutting edge technologies to meet the current and future challenges of Biotech and healthcare industry. The mission of the department is to produce knowledgeable, professionally skilled man power in the field of Biotechnology, health care related areas and to create professionals with knowledge, skills and leadership quality to address needs of both contemporary and future society.

The Department is rated among top 20 BT schools in India by BIOSPECTRUM in the years 2008, 2009 & 2010 and among top 12 Colleges of India by a survey by the Journal 'BIOSPECTRUM' in Volume 10: Issue 8, Aug 2012. The Department has been accredited by NBA, AICTE from 2008-2011. It has won an award for "Best Working Model" for designing a model Bioreactor in the year 2006 given by SRUJANA-2006 (State Level Project Exhibition cum Competition for Engineering Students). It motivates students to take innovative projects through In-house R & D, various Research institutions and Industries. It promotes industry interaction through Dr. Reddy's laboratories, Bharath Biotech, GVK bio and other industries.

The Department was accredited by NBA. In addition to quality teaching, students are exposed to certification courses and workshops along with personality development programs. Furthermore, required training is imparted to the interested students to prepare for competitive examinations such as GATE, CAT etc. The gradual increase in the number of participants and competitors for various programs and the growing number of placements reflects the impact of these programs. The department is strengthened with a total of 14 faculties out of which 4 are Doctorates and 1 pursuing PhD. The department has organized two International conferences and many workshops. Its faculty have received funding for Major project under DST and Minor project from UGC. One faculty has patents awarded and filed.

Doctorates in BT

S.No	Name of the Faculty	Degree Awarded	No. of Publications (journals/ conferences)
1	Dr. N. Sunil Kumar (HOD)	1993	14
2	Dr. D. Sailaja	1995	27
3	Dr. K. V. Pavani	1997	33
4	Dr. K. Krishnam Raju	2008	12

Research Projects/FDP's/Seminar Grants/Sanctioned

S.No	Name of the Faculty	Title	Name of the Funding Agency	Amount in Lakhs	Year
1.	Dr. D. Sailaja	Seminar grant	AICTE	2	2008
2.	Dr. K. Krishnam Raju	R&D Project	DST/SERB	22	2012
3.	Dr. K. Krishnam Raju	R & D Project-Minor	UGC	4.45	2014

Resource Mobilization for Research (TEQIP-II)

S.No	Name of the Faculty	Title	Name of the Funding Agency	Amount	Year
1.	Dr. D .Sailaja	Industry Interaction Programme conducted by Dr. Reddy's Labs in collaboration with CII. Prashanth Gudate, Head, QC, Dr. Reddy's Labs, Hyderabad	TEQIP -II	20,000	2013
2.	Dr. D .Sailaja	Faculty Development Programme (FDP) on Microbial and Molecular Techniques, Dr. K. Thomas Kiran, Nitza Biologicals	TEQIP -II	50,000	2013
3.	Dr. D .Sailaja	Faculty Development Programme (FDP) on Gene Cloning, Dr. V. Madhav Rao, Nitza Biologicals	TEQIP -II	50,000	2013
4.	Mr. C. Srikanth	Faculty Development Programme (FDP)- PhD Scholar support	TEQIP -II	20,000	2014-15

FACULTY AND THEIR PUBLICATIONS

Dr. K.V.Pavani (ID-530) Associate Professor of BT.

Qualifications: Ph.D in Biochemistry, Sardar Patel University (PhD completion in 1997), M.Sc (Life Sciences) (Sardar Patel University).

Experience: 19 years

Research Interest: Nano biotechnology, Environmental Biotechnology



Journal Publications/Conference Proceedings: 8

Journal Publications

International

1. Evaluation of potential bio-control agents on root-knot nematode *Meloidogyne incognita* and wilt causing fungus *Fusarium oxysporum* f.sp. *conglutinans* in vitro Rajinikanth Rompalli*, Sreenivasa Rao Mehendrakar and Venkata Pavani Kantabathini 2016, Vol. 1, 15(19),798-805. SCImago JR: 0.26
2. *Colletotrichum truncatum* and *C. fruticola* are responsible for the cause of anthracnose on chili in South west India. C.S. Chethana, P. Chowdappa and K.V. Pavani. Indian Phytopathology. 2015, 68 (1) 270-278. NAAS- 4.59.
3. Five species of *Colletotrichum* are responsible for anthracnose on black pepper in South India based on morphological and multi-loci gene analyses. C.S. Chethana, P. Chowdappa, K.V. Pavani, C.N. Biju, R. Praveena and A.M. Sujatha. International Journal of Advanced Biotechnology and Research. 2015, 6(3), 327-342. IF – 2.41.
4. Multilocus phylogenetic analysis reveals two *Colletotrichum* species associated with onion anthracnose in southwest India. P. Chowdappa, C.S. Chethana and K.V. Pavani. Journal of Plant Pathology 2015, 97 (1), 77-86. IF – 1.04.
5. Differentiation of *Phytophthora boehmeriae* and *P. capsici* isolates associated with foliar blight of chillies based on protein and isozyme profiles. S. Madhura ,P. Chowdappa and K.V. Pavani. Indian Phytopathology. 2016, Vol. 69, No.1,47-52. NAAS- 4.59.
6. Aggressiveness of *Phytophthora boehmeriae* and *P. capsici* isolates from India on hot pepper (*Capsicum annum* L) S. Madhura, P. Chowdappa, and K.V. Pavani. Pest Management in Horticultural Ecosystems. 2015, Vol. 21, No.2, 203-209. IF – 0.016.
7. Synthesis of silver nanoparticles using extracts of *calotropis gigantean* flowers K.V.PAVANI and K.Gaya thramma. International Journal of research in Pharma Certical and nanosciences 2015,4(4),236-240.

8. Synthesis of silver nanoparticles using cane molasses and their antibacterial activity on air flora and water flora K.V.PAVANI and K.Sreedevi Der Pharmacia Lettre,2016,8(2) 366-371.

Dr. K. KrishnamRaju (ID-839) Associate Professor

Qualifications: Ph.D (Biochemistry) (University of Mumbai / Bhabha Atomic Research Centre, 2008), **M.Sc (Genetics & Plant breeding)**(A. N. G. Ranga Agricultural University, 2002).

Experience: 7 years

Research Interest: Molecular biology of Apoptosis in unicellular systems.



Journal Publications/Conference Proceedings: 12

Journal Publications

International

1. Shaik Mustafa, B. Umamaheswara Rao, M.S.Surendra babu, Kalidindi Krishnam Raju, and G.Nageswara Rao (2015) Synthesis, characterization and biological activities of pendant arm- pyridyl-tetrazole cu(11) complexes; DNA binding /cleavage activity and cytotoxic studies (Chemistry and Biodiversity, Volume: 12; Pages: 1516-1534.
2. Kalidindi K. Raju, Sumathi Natarajan and Sunil Kumar N, Anil Kumar.D, Role of cytoplasmic deadenylation and mRNA decay factors in yeast apoptosis, FEMS Yeast Research, Vol:15, Issue 1, pp1–11;Online ISSN: 1567-1364, February, 2015.
3. SatyendraGautam, KalidindiRaju and M. ZafriHumayun (2012) “SOS induction and mutagenesis by dnaQ missense alleles in wild type cells” Journal name: Mutation Research; Volume: 735; pages: 46– 50.
4. AshisChowdhury, Kalidindi K. Raju, SwathiKalurupalle, and SundaresanTharun (2012) Both Sm-domain and C-terminal extension of Lsm1are important for the RNA-binding activity of the Lsm1–7–Pat1 complex. Journal name: RNA, Volume:18; pages:936-944.
5. News Article: Atlanta based Health and Medicine News article NewsRx Aug 13, 2007 New data from K KRaju et al illuminate research in Microbiology.

6. Genebank Submission: Cloned and sequenced 2.631 kb polysaccharide deacetylase gene, partial cds from *Xanthomonascampestrispv. glycines* Strain AM2.(Genbank accession no. DQ394570) Authors: Raju, K. K., Misra HS, and A. Sharma; Year: 2007.
7. Raju, K. K., Misra, H. S, and A. Sharma (2007)Xanthomonascaspase displays an inherent PARP-like activity. (Journal Nmae: FEMS Microbiology Letters Volume 272, pp. 259-268(10).
8. Raju, K. K., S. Gautam, and A. Sharma (2006) Molecules involved in the modulation of rapid cell death in *Xanthomonas*.Journal of Bacteriology. 188: 5408-5416.

Conference Proceedings

International

1. Paper Presentation in the 7th international conference on yeast biology held at IIT Mumbai, December 10-13th, 2011. Title of the paper: Role of LSM1 in mRNA decapping and degradation, page # 13; Volume No. 7.
2. Presented invited seminar at WOBRI, Biopolis; Singapore on 21st Feb, 2007. Topic: The multiple roles of neuregulins in human brain.

National

1. Attended national conference on proteomics and expression systems held at CCMB Hyderabad 2006.
2. Poster presentation in the DAE BRNS symposium on molecular biology of stress Response held at BARC, Mumbai; Dec 2005.
Topic: molecules modulating PCD in *Xanthomonas*, Poster No. 45.

MS. M. SUHASINI GOLDAMEIR (ID-1113), ASST. PROFESSOR IN BIOTECHNOLGY

Qualifications: M.Tech(Biotechnology) (JNTU-H, December2010),
B.Tech biotechnology (JNTU-H, 2008)

Experience: 1 year

Research Interest: Regenerative medicine, Fermentation studies, Ecofriendly novel products synthesis, etc.

Journal Publications /Conference Proceedings: 03

1. Published paper on” Rifamycin B production improvement studies” at AP Science Congress 2010 conducted by JNTU-Hyderabad and AP Akademi of Sciences.
2. Published a paper “Production of Rifamycin SV from immobilized cells of *Amycolatopsismediterranei* OVA5” at the National conference on “Biotechnology perspectives in the new millennium” conducted at SNIST, Hyderabad.



3. Published a paper on “Ecofriendly production of Rifamycin B” at workshop on “Pollution in Greater Hyderabad”.

Dr. N. SUNIL KUMAR (ID-584), ASSOCIATE PROFESSOR & HEAD DEPARTMENT OF BIOTECHNOLOGY

Qualifications: Ph. D IN LIFE SCIENCE (GENETICS),Osmania University, 1993, M. Sc GENETICS Osmania University, 1984.

Experience: 14 years Industry, 9 years Teaching

Research Interest: Environment Biotechnology, Molecular Biology and Genetic Engineering.

Research Guide: Co-guide for 4 JNTUH registered scholars

Journal Publications/Conference Proceedings: 14



Journal Publications

International

1. Pandurangaiah S1, Ravishankar KV, Shivashankar KS, Sadashiva AT, Pillakenchappa K, **Narayana S K**, Differential expression of carotenoid biosynthetic pathway genes in two contrasting tomato genotypes for lycopene content.J Biosci. 2016 Jun;41 (2):257-64.
2. Original Research Article: Polyhydroxyalkanoate Producing Novel Bacillus sp., SKM11 isolated from Polluted Pond Water,K.Chaitanya, P.Nagamani, S.K.Mahmood and **N.Sunil Kumar**, International Journal of Current Microbiology and Applied Sciences ISSN: 2319-7706 Volume 4 Number 6 (2015) pp. 1159-1165.
3. Kalidindi K. Raju, Sumathi Natarajan and **Sunil Kumar N**, Anil Kumar. D, Role of cytoplasmic deadenylation and mRNA decay factors in yeast apoptosis, FEMS Yeast Research, Vol:15, Issue 1, pp1–11;Online ISSN: 1567-1364, February, 2015, [Impact Factor: 2.44]

4. Chaitanya. K, Mahmood. S. K , Rana Kausar, **Sunil Kumar. N**, Biotechnological Production of Polyhydroxyalkonates by Various Isolates: A Review, International Journal of Pharmaceutical Science Invention Volume 3 Issue 9,September 2014, PP.01-11; ISSN (Online): 2319 – 6718, ISSN (Print): 2319 – 670X,.[AQCI Impact Factor 1.695 :2013; h-Index-10]
5. Chaitanya.K, Mahmood.S.K, Ranakausar, **Sunil Kumar. N**, Polymer producing bacteria showing siderophore with chrome azurol S (CAS) agar plate assay, International Journal of Scientific and Research Publications, Volume 4, Issue 12, p 1-3, December 2014; ISSN 2250-3153, [Impact Factor 1.22 :2013]
6. K.V.Pavani, Gayathamma, K., **N. Sunil Kumar**. Optimization of culture conditions affecting Carboxy methyl cellulose production by Aspergillus species. World Journal of Agriculture Research. Vol. 1, No. 4,pp. 65-69,2013.
7. K.V.Pavani, **N. Sunil Kumar**. “Adsorption of iron and synthesis of iron nanoparticles by Aspergillus KVP- 12’ . American Journal of Nanomaterials, Vol.1, No.2, pp.5-8, 2013.
8. K. V. Pavani, **N. Sunil Kumar**, “Adsorption of Iron and Synthesis of Iron Nanoparticles by Aspergillus Species Kvp 12”. American Journal of Nanomaterials, 2013, Vol. 1, No. 2, 24-26 DOI: 10. 12691/ajn-1-2-2 Available online at <http://pubs.sciepub.com/ajn/1/2/2> © Science and Education Publishing.
9. Synthesis of Lead Nanoparticles by Aspergillus species, K.V. Pavani, **N. Sunil Kumar** and B.B. Sangameswaran, A Short Communication, Polish Journal of Microbiology,2012, Vol. 61, No 1, 61–63.
10. K.V.Pavani, Gayathamma K, **N. Sunil Kumar**. Plants as ecofriendlynanofactories –A review. Journal of Bionanoscience, Vol.6, pp.1-6, 2012.
11. K.V.Pavani, **N.Sunil Kumar**, B.B.Sangameswaran. Synthesis of lead nanoparticles by Aspergillus species. Polish journal of Microbiology. Vol.61, No.1,pp-61-63,(2012).
12. Ch. HemaBindu, S. Vishnupriya, A. Sandhya, K.V. Pavani, **N. Sunil Kumar**, Role of GSTM1 and T1 polymorphism in the development of Myopia, IUP Journal of Biotechnology, P 50-63, 2011.

Conference Proceedings

International

1. **N. Sunil Kumar**, B.K. Sahay, Mohammed Ishaq, Serum Ceruloplasmin in Diabetes mellitus: A Comparative Analysis, Keystone Symposium Poster No.407, 1996.
2. ParveenJahan, PrasannaLatha.K, **Sunil Kumar. N**, Sailaja. B, Gazala A Khan, M.Ishaq, Increased Frequency of Haptoglobin Phenotypes with Alpha chains in type-2 diabetes: A meta analysis. XXXIII Annual conference of ISHG, Poster No.39, 2008.

**DR. MRS.D .SAILAJA (ID-211),
PROFESSOR & DEAN ENTREPRENEUR DEVELOPMENT CELL,Incubator**

Qualifications: Ph.D in Genetics, Osmania University, PhD completion in 1997, M.Sc(Genetics) Osmania University

Experience: 23 years

Research Interest: Genetics Plant biotechnology Natural Products.

Journal Publications/Conference Proceedings: 27

Journal Publications

International

1. Optimization of some influential factors in maize genetic transformation through microprojectile bombardment. Sreenu P1,3., Sridevi M1,3., Sateesh Kumar P1., Reddy MK2., Sailaja D3 and *Pavan Kumar G1. International Journal of Recent Scientific Research Vol. 7, Issue 4, p: 10517-10522, ISSN: 0976-3031 April, 2016
2. “Expression of Toll-like Recnceptor 2 and Toll-like Receptor 4 in Chronic Periodontitis by Indirect Immunoflurosce” (JICD-15-OA-0233) D’Souza Romaladin, Bhat Kishore G, Nayak Ramakant, D Sailaja. Internatinal journal of clinical and biomedical research vol:2,issue:2. mar 2016
3. Enrichment of genetic linkage maps and mapping QTLs specific to seed strength: hardness/softness in guava (Psidium guajava L.) Aswath chenna reddy Padmakar B, (Ph.D); Kanupriya C, Ph.D; Madhavi L P, M.Sc.; Vasugi C, Ph.D.; Dinesh M R, Ph.D; Sailaja D, Ph.D; Scientia Horticulturae .
4. Isolation and Molecular Characterization of acne causing Propionibacterium acnes Roselin Polugari1 , Shailaja Raj Marla1 , Shailaja. International Journal of Scientific and Research Publications, Volume 6, Issue 6, June 2016. ISSN 2250-3153



5. Heterologous Protein Expression in Different Host Systems. Bindu Kodati, Sailaja Darbha and Raj Kumar Kunaparaju. Journal of Chemical and Pharmaceutical Research, 2016, 8(4): 1068-1074. IJSRP, Volume 6, Issue 6, June 2016 Edition [ISSN 2250-3153]
6. Mammalian Expression System and Improvisation for High Production. Bindu Kodati and Sailaja Darbha. International Journal of Science and Research, ISSN (Online): 2319-7064, Impact Factor (2015): 6.391 .Volume 5 Issue 6, June 2016.
7. Microsatellite-Based DNA Fingerprinting of Guava (*Psidium guajava*) Genotypes. M.V.Naga Chaitanya, D.Sailaja, M.R.Dinesh, C.Vasugi, D.C.Lakhmana Reddy & C.Aswath. Springer Proceedings of the National Academy of Sciences, India Section B: Biological Sciences. Print ISSN: 0369-8211. Online ISSN: 2250-1746.October 2015.
8. Identification of suitable parents for the development of populations for mapping genomic regions controlling commercially favourable pomological traits in guava (*Psidium.Guajava*). M.V.Naga chaitanya, M.R.Dinesh, S.Ramesh, D.Sailaja, C.Vasugi, C.Ashwath.
9. Identification of putative parents for developing mapping populations for mapping genomic regions controlling resistance to bark eating caterpillar in guava. Journal of crop improvement. Mummadi,chaitanya,S.Ramesh,M.R,Dinesh,C.Aswanth. Dec 2015
10. Chitrali Niratker, **D.Sailaja**, International Preliminary Phytochemical Screening and Evaluation of Antimicrobial activity of *Buchnania lanzan* (Chironji) from Chattishgarh, World Journal of Pharmaceutical Research, Vol.3 (9), p 514-522, ISSN 2277-7105, November, 2014. [SJIF Impact Factor: 5.045; Citations 4]
11. P. Srilakshmi, **D.Sailaja**, Estimation of Protein Content and Phytochemical studies in Coco fruit outer covering. International Journal of Plant, Animal and Environmental Sciences, Volume-5, Issue-1, p 111-115, ISSN 2231-4490, Jan-Mar-2015, [Universal Impact Factor: 1.0280]
12. Preparation of Vermicompost from Temple Waste flowers **Dr.D.Sailaja**, P.Srilakshmi*, Shehanaaz, H.Priyanka, D.LavanyaBharathi, Ayesha Begum(International Journal of Science Innovationsand discoveries) Volume 3 Issue 3 May –June **2013 p367-375**.
13. Estimation of Level of Carbohydrates in Mealey Bug (*Macenellicoccushirsutus*) infected stem of hibiscus rosasinesis**D Sailaja** , V Laxmi(International Journal of Applied biology and Pharmaceutical Technology)Volume 3 Issue 3 April 2012 .p 410- 413.
14. Nutrient Content of Khoa samples prepared from azolla and non-azolla feed cow milk. Laxmi V, **Sailaja D**(International Journal of Biology , pharmacy & Allied Science) April 2012. 1(13) 364-369.

15. Physicochemical studies in pongamia pinnate Galls infected with fungus **DSailajasrilaxmi**, (International Journal of applied Appliedbiology and Pharmaceutical Technology)Volume 2 Issue April June 2012.
16. Quantitative estimation of carbohydrate in insects induced and fungal infected leaf galls of pongamiapinnata. **D Sailaja** (Internatinal Journal of plant animals & environmental Sciences) Volume 12 issue 2 April 2012.
17. Impact of MealeyBug, Infection on Biochemical impact of hibiscus Rosa sinesis . **D Sailaja**International Journal of applied Biology & Pharmaceutical Technology, Volume 3 Issue 2 April June 2012.
18. Utilization of domestic waste water treatment sludge as a fertilizer for nonedible plants and ornamental plants. Chatterjee et al, **D Sailaja** , Journal of Eco biotechnology 2012 4(2) P.no 149-150.
19. Isolation & Biochemical Characterization of bacteria from vegetable waste for Organic Acid Production, Mishra et al **DSailaja** Journal of Eco Biotechnology 2012 4(2) 124-126.
20. Principle of materialistic Monism, **D Sailaja et al** Intr. Jr. Of Systematics & Cybernetics Volume 1 2006 P no 30.
21. In vivo cytogenetic action of furfural on meiotic cell of mouse. **D Sailaja et al**, Environmental molecular mutagenesis Vol 14 supl 15 p no 239 1989.
22. In vivo cytogenetic action of 5 methyl furfural on bone marrow cells of mouse **D Sailaja**& S Subramanyam , Genome Vol 20 (suppl) 1988 P no 272.

Conference Proceedings

National

1. Genotoxic Potential of furfural using multiple parameter ,**D Sailaja** , NTP report 1989-90.
2. Cyptogeticevaluation of action of 2 methyl furan in mouse test system , D Rathnaprabha, **D Sailaja** , National seminar on cell biology Jan 16-18 1978 Mysore PP 52.
3. Cytogenetic action of 2 methyl furan on bone marrow cells of mouse D Ranaprabha ,**D Sailaja**II All india Conference on Cyology& Genetics , Dec 28-30 1988 Warangal 54-60.
4. In Vivo Cytogeneic response of somatic cells in mice to 2,5 Dimethyl furan D Rathnaprabha, **D Sailaja** . National Symposium on recent trends in genetic research April 28-30 1988 Hyderabad P no 44.
5. Response of somatic cells in mice to cumulative doses of quinine. **D Sailaja**Beaula Helen, XI national conference of Environmental mutagen Soc Feb 20-22 1986 Madras p 28-29.

List of research projects guiding:

1. Development of Rice straw ply board from bio-adhesive.
2. Development of Eco-friendly protective mask for air pollution.
3. Production of electricity from algal hydrogen
4. Development of disinfectant liquid from leaf extract of a plant. (Bauhinia alba)

V. Varalakshmi, Assistant Professor

Qualifications:

- B.Tech (Biotechnology), Andhra University, 2011.
- M.Tech (Biotechnology), Andhra University, 2013.

Experience: 1 year

Research Interest:

Fermentation Technology, Downstream Processing

Journal Publications/Conference Proceedings: 03

Journal publications

International

1. V.Varalakshmi, 2013."L-Asparaginase: An Enzyme of Medicinal Value"., International Journal of Green and Herbal Chemistry., Vol.2, No.3; 544-554.
2. V.Varalakshmi, K.Jaya Raju, 2013. "Optimization of L-asparaginase production by *Aspergillus terreus* MTCC 1782 using bajra seed flour under solid state fermentation". International Journal of Research in Engineering and Technology. Volume: 02 Issue: 09.

National

1. V.Varalakshmi and D.Siva rama prasad, 2013." Enzyme Immobilization: The Fascinating Challenge in Biotechnology". Journal of Environmental Science, Computer Science and Engineering & Technology., Vol.2.No.3, 840-853.

