**Annexure-I**

# Progress Report Input of the BTISNet Centre(s)

1. **Name of the Centre : Bioinformatics Infrastructure Facility (BIF) Sri Venkateswara University, Tirupati.**

2. **Establishment year of the centre : 24th August, 2009.**

3. **Area of specialization of centre : Bioinformatics, Drug discovery, Genomics Neuroinformatics, Cancer biology, Chemoinformatics, Pharmacophore and NGS , Heavy metals interaction, Aquaculture and Environmental Toxicology.**

4. **Name, Designation, Address, Phone & E-mail details of Coordinator:**

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|---|---|
| Name of the Co-ordinator | **Prof. M. Srinivasulu Reddy**<br>Co-Ordinator & Head of the Department (HOD) |
| Postal Address | DBT- BIF Centre<br>Department of Zoology,<br>S. V. University, Tirupati – 517 502<br>Andhra Pradesh, India |
| Phone Number : Office<br>Mobile | 0877 2249697<br>9866206362 |
| E-mail | svucbs.btisnet@nic.in<br>profmsrsvu@gmail.com<br>drkutagollapeera2014@gmail.com |

❖ **Breif summary about BIF Centre:**

The Bioinformatics Infrastructure Facility (BIF) was established in the Department of Zoology, Sri Venkateswara University, with the financial assistance from the Department of Biotechnology (DBT), New Delhi on 25th June 2010 for Bioinformatics Teaching and Research. The Centre has procured several hardwares and softwares, high speed internet and these infrastructure facilities were extended to all disciplines of Life Sciences in campus to carry out their research work and project works in the field of Bioinformatics, Biotechnology, Computational Biology, Drug Discovery, Ethanopharmacology and Human Diseases etc. The Research person working at this centre import training to the Research Scholars and PG students in Bioinformatics teaching and research activities. Further the centre has been focusing research work in Molecular Modelling, Molecular Dynamics, Drug Targeting & Drug discovery, Genomics, Proteomics,

Pharmacophore, Chemoinformatics, and NGS etc., this centre has the privilege of Conducting the 26th BTISnet Annual Co-Ordinators Meeting and National conferences and Bioinformatics workshop received lot of appreciation. The centre has received "INCENTIVE AWARD FOR PUBLICATIONS" for Two years i.e. 2014 and 2016 from DBT, New Delhi for its contributions in Research and Development. Data bases were developed for Cancer Genes and Markers, Alzhimer's. Identified new inhibitors against cancer and Viral disease causing proteins identified and deposited in NCBI.

**5. Name, Designation, Address, Phone & E-mail details of Co-Coordinator: Nil**

- **List of scientists working in the centre:** The Regular Faculty of the Department of Zoology and other Life Sciences Departments viz., Animal Biotechnology, Biotechnology, Virology, Botany, Microbiology, Aquaculture, Pharmacy and Chemistry.

| Name of the faculty member | Field of research interest |
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| **Prof. M. Sreenivasulu Reddy Co-Ordinator** | Aquaculture, Biotechnology, Molecular toxicology, Endocrinology, Aquatic Phylogenic, Ethnobiology Data Dase Development, |
| **Prof. P. Jacob doss Head of the Department** | Neurobiology, Neurotoxicology, Neuroinformatics, Neurodegenerative diseases. |
| **Prof. S. Kishore** | Histopathology, Toxicology, Reproductive biology, Neurotoxicology, |
| **Dr. M. Rajasekhar** | Biodiversity, Phylogenetic Evolution, Epidemiology & Ethnobiology, Ecology |
| **Dr. Y. Suneetha** | Molecular Cloning, Expression, A quaculture, Cancer-informatics and Drug Discovery. |
| **Prof. P. Neeraja (Rtd.,) (Scholars working)** | Molecular biology, Drug Discovery, Bioinformatics, Ammonia Toxicity |
| **Prof. M. Bhaskar (Rtd.,) (BSR fellow)** | Biomedical Research, Drug Discovery, Ethnobiology, Animal Biotechnology & Genomics |
| **Prof. A. Usha Rani (Rtd.,) (Scholars working)** | Environmental biology, Heavy metal toxicology, Ion Channels, Chemo-informatics and Bioinformatics |
| **Dr. K. Peera** | Bioinformatics, Database Development, Drug Discovery and Development. Next Generation Sequence etc., (Working in DBT BIF Centre) |

**6. Areas of specific Research:**

Drug Development and discovery on proteins involved in Human Disease Chemoinformatics, Pharmacophore Design and Ethanopharmacology, Aquaculture, Cancer, Neurodegenerative diseases, Heavy metal toxicity in humen, Genome Analysis by using Next Generation Sequencing and R,

Bioconductors and other tools. Reptile genome and evolutionary relationship analysis.

**7. Justification along with evidence of work done in last three years which made huge impact in the country (April 2017- March, 2020 /June 2020):**

- After Establishment of BIF Centre facility in the campus, Bioinformatics students were joined for Ph.D. programme from 2010 onwards with the faculty members of the Department of Zoology. In 2010 total 11 pure Bioinformatics students were joined for full time PhD programme, all 9 members got financial support with National Fellowships (UGC, CSIR and DST fellows). The first and second Ph.D. Bioinformatics doctorates were got placement in India remain were selected for PDF and working outside the country.
- Total 7 PG students got selected and opted Bioinformatics Full time Ph.D. in 2015 successfully completed and working in different projects.
- Currently 3 students are working as Ph.D. Bioinformatics full-time scholars (Going to submit thesis).
- From inception of BIF centre more than 253 Research Publications with high impact were produced in bioinformatics and biotechnology only.
- Our BIF Centre received two times **Incentive Award for publication in the year-2014** (2nd Place) **and 2016** (3rd Place) for Universities categories under BTISnet from DBT, New Delhi.
- From the BIF Centre more than 185 M.Sc., Projects works were executed by M.Sc., Bioinformatics and Animal Biotechnology Students.
- During 2017 -2019 Two National workshops were organized, One International conference (2019) were organized in our BIF centre.
- More than 327 Training Programmes/ invited guest Lecturer were organized for the faculty, Research scholars and Students of Zoology, Animal Biotechnology, Biotechnology, Virology, Aquaculture Departments in the area of Bioinformatics tools and techniques.
- Our Centre facilities were extended to all Departments in SVU Colleges of Sciences in our Campus and other local educational institutions.
- The Centre is imparting extensive training to Teaching staff, Research Scholars and P.G. students.
- Every day nearly 50 Research scholars and students from different departments of SVU College of Sciences were using facility and producing High impact research papers.
- 26th BTISnet Annual Coordinators meet organized in the year 2015 and received appreciation from DBT, New Delhi.
- Data base development on selected human diseases (Data base developed for Cancer Genes and Markers : CGMD, Alzheimers Disease and Indian golden gecko by Dr. K. Peera and Research scholars) is an good progress.

**8. Training/ Workshop/Conference organized in last three years (April 2017- March 2020):**

- **Organized National Lecture-cum-Workshop on "Application of Chemoinformatics and Big data in Drug Discovery" organized by DBT-BIF Centre, Department of Zoology, SV University, Tirupati on 24th & 25th March, 2017 with financial support of DBT, New Delhi.**

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<tr><td> </td><td> </td></tr>
<tr><td colspan="2">Inauguration & Brochure release of National Lecture-cum-Workshop on "Application of Chemoinformatics and Big data in Drug Discovery" with DBT,New Delhi financial support</td></tr>
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<table>
<tr><td colspan="2">Guest Lectures by Eminent Scientists</td></tr>
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<tr><td>Dr. K. Guruprasad,<br>Scientist & Co-ordinator,<br>Bioinformatics,<br>CCMB, Uppal Road,<br>Hyderabad</td><td>Dr. A.K. Misra,<br>Sr. Principal Scientist<br>Ashoka Super Computing Facility<br>ICAR, New Delhi - BIG – DATA</td></tr>
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- **Oragnized an** *International Conference on* "Advances in Biosciences and Technology: Impact on Plant, Animal and Human Health" (ICABT-2019) & *One day Workshop on* "Bioinformatics in Human Health" (24th – 26th December, 2019) under DBT-BIF Centre.

## ICABT – 2019 Inaugural Session

Release of proceedings by Chief Guest

**Addressed by the Eminent Scientist Prof. G. Raja Rami Reddy, Former VC, VSU, Nellore.**

## 9. Number of Manpower trained in last three years (April 2017- March 2020):

- Ph.D. Degrees awarded in Bioinformatics with the faculty of Zoology : **13**
  Total Ph.D. 's Bioinformatics awarded from 2010 to till date : 21
- M.Phil. Degrees awarded pure bioinformatics work (Under Dr. Peera) **: 01**
- Degree M. Pharmacy awarded (Co-Guidance Dr. Peera) **: 01**
- Bioinformatics students working for Ph.D. with the faculty of Zoology **: 04**
- Total number of users trained on Bioinformatics tool and techniques:
  i. M.Sc. Zoology & Animal Biotechnology **: 399**
- Manpower Training for the Faculty, Research scholars **: 327**
  Animal Biotechnology, Biotechnology, Virology, Aquaculture, Pharmacy and other departments in the campus in the area of Bioinformatics tools and techniques.
- M.Sc. Projects completed by Animal Biotechnology students (2017-20) **: 185**
  (Students project executed work under BIF Centre only)

**10. Patents/ copyright filed (April 2017 – March, 2020 /June 2020)**

- **Patent filed: One**
- **Patent filed by : Dr. K. Peera at al., 2020-21.**
- **Patent Application No.: 202141043589**
- **Patent Title: *A novel medicinal energy beverage composition and preparation method thereof..,**

**11. Research Paper published in National/ International Journals with full bibliography (April 2017 – March, 2020 /June 2020):**

**DBT - BIOINFORMATICS INFRASTRUCTURE FACILITY (BIF)**
**DEPATMENT OF ZOOLOGY, SIR VENKATESWARA UNIVERSITY:: TIRUPATI – 517502**

**List of Research Publications in the field of Biotechnology, Bioinformatics and other Specialization Areas of the Centre from 2016-17 to 2020-21.**

Publications ; 2016-17 to 2020

| Sl.No | Authors | Title of the Paper | Journal | Year | Volume | Issue | Starting Page | Ending Page |
|---|---|---|---|---|---|---|---|---|
| 1. | RadhakrishnamRaju, R., Adharvana Chari, M., Ravindar, K., Muni Chandra Babu, T., Rajendra, W.,Shobha, D. Ravichandar, M., BabuRao, K., and LakshmanaSwamy, P. (2016). | Design, synthesis, anticancer, antimicrobial activities and molecular docking studies of theophylline containing acetylenes and theophylline containing 1,2,3-triazoles with variant nucleoside derivatives. | European Journal of Medicinal Chemistry | 2016 | 123 | -- | 379 | 396 |
| 2. | Muni Chandra Babu, T., Rammohan, A., Siva Rajesh, S., | Development of novel HER2 inhibitors against gastric cancer derived from flavonoid source of | Drug Design Development and Therapy, | 2016 | 10 | -- | 1 | 22 |

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|---|---|---|---|---|---|---|---|---|
| | VijayaBhaskar. B., Devi, S., Siva Raman, T., Gunasekar, D., Rajendra, W. | *Syzygiumalternifolium* through molecular dynamics and pharmacophore based screening" | | | | | | |
| 3. | VijayaBhaskar, B., Munichandra Babu, T., Vasudeva Reddy, N. and Rajendra, W., | Homology modeling, molecular dynamics and virtual screening of NorA efflux pump of *Staphylococcus aureus*., | Drug Design Development and Therapy, | 2016 | 10 | -- | 3237 | 3252 |
| 4. | VijayaBhaskar, B., Ram Mohan, A., Muni Chandra Babu, T., Siva Rajesh, S., Bhuvaneswar, C., Sivaraman, T., Gunasekar, D., and Rajendra, W. | Antibacterial efficacy of fractions and compounds from *Indigoferabarberi:* Identification of DNA gyrase B inhibitors through pharmacophore based virtual screening | Process Biochemistry | 2016 | 51 | 12 | 2208 | 2221 |
| 5. | Suresh, K. A., VenkataSubbaiah C Kadiam., ThaslimBasha, S.K.; Naga RajuChamarti., Suresh Kumar, M., Rajendra, W., LokanathaValluru | Synthesis and antiviral activity of novel phosphorylated derivatives of Didanosine against Newcastle Disease Virus in chicken." | Arch. Pharm. Chem. Life sci. (Archiv der Pharmazie) | 2016 | 349 | 6 | 442 | 455 |
| 6. | Suresh, K.A., Kadiam C VenkataSubbaiah., RayapuLavanya., Kuruva | Design, synthesis and biological evaluation of novel phosphorylated Abacavir derivatives as | Applied Biochemistry and Biotechnology. | 2016 | 180 | 2 | 361 | 381 |

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|---|---|---|---|---|---|---|---|---|
| | Chandrasekhar., Naga RajuChamarti., M. Suresh Kumar., RajendraWudayagiri., LokanathaValluru | antiviral agents against Newcastle Disease Virus infection in chicken | | | | | | |
| 7. | Ruddarraju, R.R., Murugulla, A.C., Kotla, R., Tirumalasetty, M.C.B., Wudayagiri, R., Donthabakthuni, S., Maroju, R., Palle, S. | Design, Synthesis and molecular docking studies of Pyrazine Containing 1,2,3-Triazole Derivatives., | Journal of Heterocyclic Chemistry. | 2016 | DOI 10.1002/jhet.2736 | | | |
| 8. | K. Yellamma and D.Vanaja | Molecular Docking Studies on Compounds extracted from the herbal plant, Evolvulus Alsinoidesagainst Proteins involved in Alzheimer's Disease. | International journal of pharmaceutical science review and research | 2016 | 41 | 1 | 110 | 115 |
| 9. | P. Jyothi and K. Yellamma | Molecular docking studies on the therapeutic targets of alzheimer disease (AChE and BChE) using natural bioactive alkaloids | International Journal of Pharmacy and Pharmaceutical Sciences | 2016 | 8 | 12 | 108 | 112 |
| 10. | K. Yellamma and D.Vanaja | Evolvulus alsinoides plant extract as a cognitive enhancer of spacial memory in ad-induced rat model | Research Journal of Pharmaceutical, Biological and Chemical Sciences | 2016 | 7 | 6 | 2050 | 2054 |
| 11. | K. Peera and K. Yellamma | Evoluation Of Potential Antioxidant Activity | Journal of Andhra Pradesh | 2016 | 1 | 4 | 384 | 395 |

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| | | Of Silk Protein Sericin Against Alzheimer's Disease Induced Rat Brain | Akademi of Sciences. | | | | | |
| 12. | Subba Rao Devineni, Madhava Golla, Naga Raju Chamarthi, Balaji Meriga, Madhu Sudhana Saddala, Usha Rani Asupathri | 2-Amino-2,3-dihydro-1H-2λ5-[1,3,2]diazaphospholo [4,5-b]pyridin-2-one-based urea and thiourea derivatives: synthesis, molecular docking study and evaluation of anti-inflammatory and antimicrobial activities | Medicinal Chemistry Research | 2016 | 25 | 4 | 751 | 786 |
| 13. | Madhu Sudhana Saddala, Pradeep Kiran, Jangampalli Adi, Usha A Rani. | In Silico Drug Design and Molecular Docking Studies of Potent Inhibitors against Cathepsin-l (ctsl) for Sars Disease | Journal of Research and Development | 2016 | 4 | 2 | 1 | 4 |
| 14. | H. Sudhamani, S. K. Thaslim Basha, S. Adam, S. Madhu Sudhana, A. Usha Rani and C. Naga Raju | Synthesis and evaluation of urea and thiourea derivatives of lopinavir intermediate as potent antimicrobial, antioxidant agents and molecular docking studies against Staphopain | Research on Chemical Intermediates | 2016 | 43 | 1 | 1 | 18 |
| 15. | Pradeepkiran Jangampalli Adi Nanda Kumar Yellapu, Bhaskar Matcha. | Modeling, molecular docking, probing catalytic binding mode of acetyl-CoA malate synthase G in Brucella melitensis 16M | Biochemistry and Biophysics Reports | 2016 | 8 | | 192 | 199 |
| 16. | Subramanym, D., Suresh, K.A., Rajendra, W | Role of microbial flora in female genital tract: A comprehensive | Asian J. of Tropical Disease | 2016 | 06 | 11 | 909 | 917 |

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|---|---|---|---|---|---|---|---|---|
| | and Lokanatha, V. | review | | | | | | |
| 17. | VeeraNagendra Kumar D, Shanmugam K.R, Ramakrishna Ch, VenkataSubbaiah G, Sathyavelu Reddy K | BacopaMonnieraModulates Antioxidant Enzymes Responses against Alcohol -Induced Oxidative Stress in Rat Brain. | Indo American Journal of Pharmaceutical Research | 2016 | 06 | 02 | 4569 | 4575 |
| 18. | BhashaShanmugam, KondetiRamuduShanmugam, GangarajuDoraswamy, Shakuri Ravi, GanJikuntaVenkataSubbaiah, KurakulaSrinivas,KesireddySathyavelu Reddy | Hepatoprotective Effect of PhyllanthusNiruriAlkaloid Fraction in D–Galactosamine Induced Hepatitis in Rats. | International Journal of Pharmacy and Pharmaceutical Sciences | 2016 | 8 | 5 | 158 | 161 |
| 19. | Siva M, Shanmugam KR, Shanmugam B, VenkataSubbaiah G, Ravi S,Sathyavelu Reddy K, Mallikarjuna | Ocimum sanctum: a review on the pharmacological properties | International Journal of Basic & Clinical Pharmacology | 2016 | 5 | 3 | 558 | 565 |
| 20. | Pradeepkiran JangampalliAdi, Siva Prasad Burra, Amardev Rajesh Vataparti, BhaskarMatcha, | Calcium, zinc and vitamin E ameliorate cadmium-induced renal oxidative damage in albino Wistar rats | Toxicology Report | 2016 | 3 | -- | 591 | 597 |
| 21. | Pradeepkiran JangampalliAdi and Bhaskar M | Environmental acidification impact on oxidative enzymes of liver | Journal of Poultry, Fisheries & Wildlife | 2016 | 4 | 1 | 146 | 146 |

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| | | and intestine of freshwater fish Cyprinuscarpio. (L) | Sciences | | | | | |
| 22. | Nelli Giribabu · Pamanji Sreenivasula Reddy | Protection of male reproductive toxicity in rats exposed to di-n-butyl phthalate during embryonic development by testosterone | Biomedicine & pharmacotherapy Biomedecine & pharmacotherapie | 2016 | 87 | -- | 355 | 365 |
| 23. | ObaiahJamakala and Usha Rani A | Zinc and calcium supplementation to combat cadmium induced bioaccumulation in fresh water teleost *Oreochromismossambicus (Tilapia).* | International Journal of Pharmacy and Pharmaceutical Sciences, | 2016 | 8 | 11 | 186 | 190 |
| 24. | ObaiahJamakala and Usha Rani A | Cadmium induced bioaccumulation and oxidative stress in liver and kidney of male albino rat. | International Journal of Current Research, | 2016 | 8 | 1 | 43383 | 43389 |
| 25. | Srinivasa Reddy, B.; Sridevi, B.; Neelima, H.; Ramachandra Reddy, P.; Reddy, P.S | *Regulation of vitellogenesis by selected endocrine modulators in crabOziothelphusa senex senex, with special reference to methyl farnesoate*. | Aquaculture Reports | 2016 | 3 | | 24 | 30 |
| 26. | Pratap Reddy, K.; Reddy, P.S. | *Testicular and epididymal toxicity induced by benzo(a)pyrene, alcohol, and their combination in Wistar rats* | Toxicol. Res. | 2016 | 5 | | 420 | 433 |
| 27. | Swetha, CH.; Girish, B.P.; Reddy, P.S. | *Elucidation of the role of estradiol and progesterone in regulating reproduction in the edible crab, Oziothelphusa senex senex.* | RSC Adv. | 2016 | 6 | | 24959 | 24667 |
| 28. | Madhu, P.; Pratap Reddy, K.; | *Role of melatonin in mitigating chemotherapy-* | Drug Chem. Toxicol | 2016 | 39 | | 137 | 146 |

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|---|---|---|---|---|---|---|---|---|
| | Reddy, P.S. | *induced testicular dysfunction in Wistar rats.* | | | | | | |
| 29. | Reddy, P.R.; Neelima, H.; Reddy, P.S. | *Natural and induced (eyestalk ablation) molt cycle in freshwater rice field crab Oziotelphusa senex senex* | J. Aqua. Res. Dev. | 2016 | 7 | | 4 | |
| 30. | Supriya, Ch.; Akhila, B.; Pratap Reddy, K.; Girish, B.P.; Reddy, P.S | *Effects of maternal exposure to aflatoxin B1 during pregnancy on fertility output of dams and developmental, behavioural and reproductive consequences in female offspring using a rat model.* | Toxicol. Mech. Meth | 2016 | 26 | | 202 | 210 |
| 31. | Shaik Mannur Ismail, KRS Sambasiva Rao and Matcha Bhaskar | Evaluation of Anti-Inflammatory Activity of *Boswellia serrata* on Carrageenan Induced Paw Edema in Albino Wistar Rats | International Journal of Research in Medical Sciences | 2016 | 4 | 7 | 2980 | 2986 |
| 32. | S.K. Shahina Banu, K. Hareesh and M. Srinivasulu Reddy | Evaluation of Nutritional status peneaid prawns through proximate composition studies. | International Journal of Fisheries and Aquatic Studies | 2016 | 4 | 1 | 13 | 19 |
| 33. | Pratap Reddy C, K Hareesh, Y Suneetha, Srinivasulu Reddy M | Efficacy of Animal and Plant Feed Ingredients in the Formulation of feeds for induction of growth potentials in penaeid prawn *Litopenaeus vannamei*. | International Journal of Fisheries and Aquatic Studies | 2016 | 4 | 2 | 07 | 14 |
| 34. | J Sreenivasa Guptha, M. Renuka, Y Suneetha, M. | Evaluaton of antioxidant defence system during xenobiotic | International Journal of Fisheries | 2016 | 4 | 1 | 379 | 385 |

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| | Srinivasulu Reddy | induced oxidative stress in freshwater fish *Oreochromis mossambicus*. | and Aquatic Studies | | | | | |
| 35. | SV Nagendra Prasad and M. Srinivasulu Reddy | Enhancement of growth potential in freshwater prawn *Macrobrachium rosenbergii* with usage of water and feed probiotics in the culture operation. | International Journal of Fisheries and Aquatic Studies | 2016 | 4 | 5 | 114 | 122 |
| 36. | K Peera and **K Yellamma** | Evaluation of Potential Antioxidant Activity of Silk Protein Sericin Against Alzheimer's Disease Induced Rat Brain | Journal of AP Science Congress, journal of Science Spectrum | 2016 | 1(4) | 384-395 | **--** | -- |
| 37. | K Yellamma and D Vanaja | Molecular Docking Studies on Compounds extracted from the herbal plant, *Evolvulus Alsinoides* against Proteins involved in Alzheimer's Disease. | International journal of pharmaceutical science Review and Research | 2016 | 41(1) | 110-115 | 0976-044X | 0.65 |
| 38. | P Jyothi and **K Yellamma.** | Molecular docking studies on the therapeutic targets of alzheimer disease (AChE and BChE) using natural bioactive alkaloids., | International Journal of Pharmacy and Pharmaceutical Sciences | 2016 | 8(12) | 108-112 | 0975 – 1491 | 0.512. |
| 39. | **K Yellamma and** D Vanaja | *Evolvulus alsinoides* plant extract as a cognitive enhancer of spacial memory in ad-induced rat model | Research Journal of Pharmaceutical, Biological and Chemical Sciences | 2016 | 7(6) | 2050-2054 | **0975-8585** | 0.35 |

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| 40. | Nimgampalle Mallikarjuna, Kukkarasapalli Praveen, Kuna Yellamma | Role of *Lactobacillus plantarum* MTCC 1325 on membrane bound transport ATPase system in Alzheimer's induced rat brain | Bioimpacts, | 2016 | 6(4) | 203-209 | **2228-5660** | SJR 0.69 |
| 41. | P Jyothi & K Yellamma. | *Insilico* approach for validation of maltol derivatives as acetylcholinesterase inhibitors | International Journal of Pharmaceutical Science Review and Research. | 2016 | 42(1) | 300-306 | **0976-044X** | 0.65 |
| 42. | K. Yellamma | *Evolvulus Alsinoides* (EAE) plant extract as a modulator of cholinergic system with reference to Alzheimer's disease' | Int. J. Pharmaceutical Sciences and Research. | 2016 | 8(5) | 2090-2099 | 2320-5148 | -- |
| 43. | Prof.P.Neeraja | Effect of Zinc on Serum Amino Transferases in Albino Rats under Ammonium Stress | J. Pharm. Sci. & Res. Vol. | 2016 | 8(6), | 421-–423 | 0975-1459. | |
| 44. | Prof. M. Bhaskar | Modeling, molecular docking, elucidated catalytic binding mode of acetyl-CoA malate synthase G in *Brucella melitensis* 16M | Biochemistry and Biophysics Reports | 2016 | 8 | 192–199 | ISSN: 2405-5808 | 0.266 |
| 45. | Prof. M. Bhaskar | Calcium, zinc and vitamin E ameliorate cadmium-induced renal oxidative damage in albino Wistar rats | ***Toxicology Reports*** | 2016 | 25 | 4881–4897 | ISSN: 2214-7500 | 1.12 |
| 46. | Prof. M. | Evaluation of Anti- | Internatio | 201 | 4 | 2 | IS | |

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| | Bhaskar | Inflammatory Activity of Boswellia serrata on Carrageenan Induced Paw Edema in Albino Wistar Rats. | nal Journal of Research in Medical Sciences | 6 | | 980-2986 | SN-2320-6012 | |
| 47. | Prof.W.Rajendra | Design, synthesis, anticancer, antimicrobial activities and molecular docking studies of theophylline containing acetylenes and theophylline containing 1,2,3-triazoles with variant nucleoside derivatives" | European Journal of Medicinal Chemistry. | 2016 | 123 | 379-396 | | **3.902** |
| 48. | Prof.W.Rajendra | Development of novel HER2 inhibitors against gastric cancer derived from flavanoid source of Syzygium alternifolium through molecular dynamics and pharmacophore based screening". | Drug Design, Development and Therapy | 2016 | 10 | 3611-3632 | | **2.88** |
| 49. | Prof.W.Rajendra | Homology modeling, molecular dynamics and virtual screening of NorA efflux pump inhibitors of Staphylococcus aureus | Drug Design, Development and Therapy., | 2016 | 10 | 3237-3252 | | **2.88** |
| 50. | Prof.W.Rajendra | Antibacterial efficacy of fractions and compounds from Indigofera barberi: Identification of DNA gyrase B inhibitors through pharmacophore | Process Biochemistry | 2016 | 51 | 2208-2221 | | **2.529** |

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| | | based virtual screening”., | | | | | | |
| 51. | Prof.W.Rajendra | Synthesis and antiviral activity of novel phosphorylated derivatives of Didanosine against Newcastle Disease Virus in chicken." | Arch. Pharm. Chem. Life sci. (Archiv der Pharmazie) | 2016 | 349 (6): | 442-455 | | **2.043** |
| 52. | Prof.W.Rajendra | Design, synthesis and biological evaluation of novel phosphorylated Abacavir derivatives as antiviral agents against Newcastle Disease Virus infection in chicken" | Applied Biochemistry and Biotechnology., | 2016 | 180 (2): | 361-381. | | **1.606** |
| 53. | Prof.W.Rajendra | Design, Synthesis and molecular docking studies of Pyrazine Containing 1,2,3-Triazole Derivatives., y. | Journal of Heterocyclic Chemistr | 2016 | 54 (2) | 1492-1505 | | **0.685** |
| 54. | Prof.W.Rajendra | Role of microbial flora in female genital tract: A comprehensive review” | Asian J. of Tropical Disease. | 2016 | 6 (11) | 909-917 | | **SNIP: 0.747** |
| 55. | K Peera and **K Yellamma** | Evaluation of Potential Antioxidant Activity of Silk Protein Sericin Against Alzheimer's Disease Induced Rat Brain | **Journal of AP Science Congress, journal of Science Spectrum** | 2016 | 1(4) | 384-395 | **--** | -- |
| 56. | K Yellamma and D Vanaja | Molecular Docking Studies on Compounds extracted from the herbal plant, Evolvulus | International journal of pharmaceutical science | 2016 | 41(1) | 110-115 | **0976-044X** | 0.65 |

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| | | Alsinoides against Proteins involved in Alzheimer's Disease. | Review and Research | | | | | |
| 57. | P Jyothi and **K Yellamma.** | Molecular docking studies on the therapeutic targets of alzheimer disease (AChE and BChE) using natural bioactive alkaloids., | International Journal of Pharmacy and Pharmaceutical Sciences | 2016 | 8(12) | 108-112 | 0975–1491 | 0.512. |
| 58. | **K Yellamma and** D Vanaja | Evolvulus alsinoides plant extract as a cognitive enhancer of spacial memory in ad-induced rat model | Research Journal of Pharmaceutical, Biological and Chemical Sciences | 2016 | 7(6) | 2050-2054 | **0975-8585** | 0.35 |
| 59. | Nimgampalle Mallikarjuna, Kukkarasapalli Praveen, **Kuna Yellamma** | Role of Lactobacillus plantarum MTCC 1325 on membrane bound transport ATPase system in Alzheimer's induced rat brain | **Bioimpacts,** | 2016 | 8(4) | 203-209 | **2228-5660** | SJR 0.69 |
| 60. | P Jyothi **& K Yellamma.** | Insilico approach for validation of maltol derivatives as acetylcholinesterase inhibitors | International Journal of Pharmaceutical Science Review and Research. | 2016 | 42(1) | 300-306 | **0976-044X** | 0.65 |
| 61. | **K. Yellamma** | Evolvulus Alsinoides (EAE) plant extract as a modulator of cholinergic system with reference to Alzheimer's disease' | Int. J. Pharmaceutical Sciences and Research. | 2016 | 8(5) | 2090-2099 | **2320-5148** | -- |
| 62. | Prof. M. Bhaskar | Environmental acidification impact on oxidative | Journal of Poultry, Fisheries | 2016 | 4 | 146. | ISSN - | |

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| | | enzymes of liver and intestine of freshwater fish Cyprinus carpio. (L). | & Wildlife Sciences | | | | 2375-446X | |
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| | MotireddySrinivasulu Reddy | *sanctum* on Infertility Activity in Female Albino Rats | | | | 1 | | |
| 180. | K. Sirisha, Y. Aparna and M. Srinivasulu Reddy | Efficacy of Probiotics and Bioflocs on theProduction Performance of Tiger Shrimp *Penaeusmonodon* and Pacific White Shrimp *Litopenaeusvannamei* during Polyculture Operation. | *Asian Journal of Fisheries and Aquatic Research 1* | *2021* | *1(2)* | *15-28* | | |
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**12. Papers presented at National / International conferences (April 2017 – March, 2020 /June 2020) : 154**

**13. Software developed: Nil (Budget not allotted) – NIL**

**14. Database developed:**

- **The following Data Bases were developed, but currently not maintained.**

| S. No. | Name | Website Address |
|---|---|---|
| 1. | Cancer Genes and Markers : CGMD | https://omictools.com/cancer-gene-marker-database-tool. |
| 2. | Website for Alzheimer's Disease | Developed but not maintained. |

| | | |
|---|---|---|
| 3. | Data Base on Naturally available Active compound from medicinal plant in Seshachalm Hills | Under development, Currently not maintainance. |
| 4. | Data Base on indian golden gecko | Evolutionary data base were development. Not maintained |

## 15. Bioinformatics infrastructure available at centres:

| Hardware | Software |
|---|---|
| Workstations – 02<br>Server -2 (Major-1,Mini -1) | Commercial softwares : NIL |
| Higher End Desktops - 06 | **Academic licensed Softwares :** |
| Desktop Systems -10 | Autodock, PyMol, HEX |
| Smart board - 01 | Arguslab, Modeller |
| Printer - 01 | Dyamics - NAMD, VMD |
| Scanner - 01 | ACDLABS Tools, Clustal W, Mega |
| Photocopier - 01 | NGS Analysis Tools, NCBI Genome workbench, R, |
| 3.5 & 5KV Power Backup | Ligand Scout, Viewer Light, |
| Along with high speed internet Broad band facility | |
| Note: All above infrastructure facility are maintained with DBT annual contingency grants | |

## 16. List of servers and tools developed by the centre and used internationally:

- Cancer Genes and Markers : CGMD
  https://omictools.com/cancer-gene-marker-database-tool.

### ❖ Justification for on BIF Centre Activites.

In the entire state of Andhra Pradesh, Currently BIF Centers activity are closed, During revamping of BTISnet centers DBT formed some guidelines and a format, ours is academic institution and carrying teaching and Research activities but in the new application format focused on research only. Due to some issues teaching faculty in Universities are not done from last decade, The BIF centers are only provided employment to young and latent Bioinformatics Doctorates. Due to closing of BTISnet centre's the trained manpower lost their employment. As we know the current role of Bioinformatics and Computational Biology in Vaccine development and Meta Genomic research in this covid-19 pandemic.

Hence, I request to DBT to send the guidelines to continue the Manpower, due to lack of guideline the talent young minds in this emerging field are migrating, I further request to DBT to continue such a big network in India for sustainable development of Bioinforatics in the country.

❖ Impact shown by the BIF Centre in University Ranking

Our centre has recorded rapid growth within short time since establishment in 2009, in terms of research publications, Research projects, PG projects etc and teaching. Ours is the youngest centre which is best owed with **Incentive award for Research Publications** for two times and organized National and International programmes. Our Sri Venkateswara University, Tirupati is also a reputed educational and research institute in Andhra Pradesh state, after starting the advanced bioinformatics research in the campus number of publications were improved and credited with the following ranks.

- NAAC accredited with A+ under Universities
- **First Rank in Southern States of India**, among State Universities, Central Universities, Deemed Universities, Private Universities,
- **7$^{th}$ rank** among State Universities, Central Universities, Deemed Universities, Private Universities in India
- **17$^{th}$ Rank** among all categories of Universities, IITs, IIMs, IIITs, IISc, Bangalore in India.
- **19$^{th}$** best University in research by SCOPUS international rating for Academics.
- **7$^{th}$** position in overall university with high impact interms of Education and Research.

**Suggest made:**

- Finally, I expressed my sincere thanks to DBT, New Delhi for providing financial support and an excellent flat form for development of Bioinformatics in India.
- In the entire state of Andhra Pradesh, Currently BIF Centers activity are closed, During revamping of BTISnet centers DBT formed some guidelines and a format, ours is academic institution and carrying teaching and Research activities but in the new application format focused on research only, resulting our new proposal not selected.

- Due to some issues teaching faculty in Universities are not done from last decade, The BIF centers are only provided employment to young and latent Bioinformatics Doctorates.
- By closing of BTISnet centre's the trained manpower lost their employment. As we know the current role of Bioinformatics and Computational Biology in Vaccine development and Meta Genomic research in this covid-19 pandemic.
- Hence, I request to DBT to send the guidelines to continue the Manpower, due to lack of guideline the talent young minds in this emerging field are migrating, I further request to DBT to continue such a big network in India for sustainable development of Bioinformatics in the country.

**Prof. M. Srinivasulu Reddy**

# Bioinformatics Infrastructure Facility Centre
# Sri VenkateswaraUniversity, Tirupati
# (Established in 2009)

**Supported by Department of Biotechnology (DBT), Ministry of Science and Technology, GOI, New Delhi**

## Prof. M. Srinivasulu Reddy

Co-Ordinator, DBT-BIF Centre
Contact: 9866206362
BIF: 0877 2249697
svucbs.btisnet@nic.in
profmsrsvu@gmail.com


**Brief summary about BIF Centre:**

The Bioinformatics Infrastructure Facility (BIF) was established in the Department of Zoology, Sri Venkateswara University, Tirupati with the financial assistance from the Department of Biotechnology (DBT), New Delhi on 25th June 2010 for Bioinformatics Teaching and Research. The Centre has procured several hardwares and softwares, high speed internet and these infrastructure facilities were extended to all disciplines of Life Sciences in campus to carry out their research work and project works in the field of Bioinformatics, Biotechnology, Computational Biology, Drug Discovery, Ethanopharmacology and Human Diseases etc. The Research person working at this centre import training to the Research Scholars and PG students in Bioinformatics teaching and research activities.Further the centre has been focusing research work in Molecular Modeling, Molecular Dynamics, Drug Targeting & Drug discovery, Genomics, Proteomics, Pharmacophore, Chemoinformatics, and NGS etc., this centre has the privilege of Conducting the 26th BTIS'net Annual Co-Ordinator's Meeting and National conferences and Bioinformatics workshops and received lot of appreciation from Researches and scientist/academicians. The Centre has received "INCENTIVE AWARD FOR PUBLICATIONS" for Two years i.e. 2014 and 2016 from DBT, New Delhi for its contributions in Biotechnology and Bioinformatics Research and Development. Data bases were developed for Cancer Genes and Markers, Alzheimer's. New inhibitors were Identified against cancer, Human disease, Neurodegenerative disordersand Viraldiseaseagainst genes/proteins. Essential gene identified as potential for drug development depositedin NCBI. One M.Phil., 19 Ph.D.'s awarded in pure Bioinformatics.

**Infrastructure Facilities available and Research areas**

**Hardware**

- **Desktop Systems -10**
- **Higher End Desktops - 06**
- **Workstations - 02**
- **Smart board - 01**
- **Printer - 01**
- **Scanner - 01**
- **Photocopier - 01**
- **3.5 & 5KV Power Backup**
- **Along with high seep internet facility**

**Bioinformatics Software**

- **Commercial softwares : NIL**

**Academic licensed :**

- **Autodock,**
- **PyMol,**
- **HEX,**
- **Z-Dock**
- **Arguslab,**
- **Modeller**
- **MAMD, VMD**
- **ACDLabs Tools,**
- **Clustal W, MEGA**
- **R, NGS Analysis Tools,**
- **NCBI Genome workbench**
- **Ligand Scout,**
- **Viewer Light etc.,**

**Research areas of specializations:**

- **Basic Bioinformatics research support.**
- **Next Generation Sequencing Analysis by using R**
- **Aquaculture and Marine-informatics**
- **Neurodegenerative Disorders**
- **Ethnopharmacology**
- **Molecular modeling and Drug Designing**
- **Molecular Dynamics and Simulation studies**
- **Identification of Molecular targets and Docking studies against human Diseases.**
- **Pharmacophore Analysis and QSAR studies.**
- **Genomics and Evolutionary studies**
- **Proteomics**
- **Database development**
- **Total Genome Analysis**
- **DNA sequencing analysis.**
- **RNA seq**
- **Chip seq**
- **miRNA**
- **qPCR**

**R&D and Educational activities:**

- **To supervise Research programmes leading to award of Ph.D. Degrees.**
- **To Execute project works by M.Sc. Bioinformatics, M.Sc. Animal Biotechnology and M.Sc. Zoology students as a part of their M.Sc. curriculum.**
- **Organization of Hands on Training Programmes for the Lectures, Ph.D., M.Phil Scholars, PG students and students of Non-Bioinformatics Programmes.**
- **Insilco Molecular interactions studies on the Neurotransmitters with Seri-products.**

- **Identification and molecular modeling of proteins involved in Alzheimer's Disease and subsequent designing of novel inhibitors for these selected proteins.**
- **Application of Next Generation Sequencing tool for Identification of Alzheimer's Gene variants.**
- **High throughput screening and Pharmacophore Analysis of anti- Alzheimer's compounds.**
- **Identification of New Pharmacophore compounds for Alzheimer's Disease.**
- **Genomic and Evolutionary studies on Alzheimer's Disease causing genes.**
- **Molecular dynamics and docking studies of human potassium channel.**
- **Protein-Protein docking studies on AChE, Tau, B-Amyloid proteins.**
- **Development of new inhibitors against breast cancer.**
- **Identification and molecular modeling of proteins involved in Alzheimer's Disease and subsequent designing of novel inhibitors for these selected proteins.**

**Details about Manpower / Scientific person in the centre:**

| Sl. No. | Name & Designation | Educational Qualification | Working Since | Specialization |
|---|---|---|---|---|
| 1. | Dr. K. Peera.<br>Sr. Research Associate (RA) – III (Bioinformatics Scientist) | M.Sc., Ph.D. (Bioinformatics ) | 01-02-2014 | Molecular Biology, Drug Designing, Computational Biology, Neuroinformatic, NGS, miRNA and R programme.<br>Email. Drkutagollapeera2014@gmail.com. |

## Outcome from the BIF Centre

| Sl. No. | Year | Total No. of Research Publication | Papers presented | Ph.D. in bioinformatics awarded | Total PG students trained | Total Faculty and Research Scholars trained | Patents filed/ Granted | M.Sc., Projects Bioinformatics & Animal Biotechnology |
|---|---|---|---|---|---|---|---|---|
| 1 | 2015-16 | 33 | 15 | 3 | 27 | 12 | - - | 26 |
| 2 | 2016-17 | 39 | 35 | 4 | 73 | 110 | - - | 23 |
| 3 | 2017-18 | 23 | 30 | 2 | 90 | 83 | - - | 18 |
| 4 | 2018-19 | 37 | 32 | 2 | 95 | 92 | - - | 28 |
| 5 | 2019-20 | 35 | 36 | 2 | 86 | 30 | - - | 26 |
| 6 | 2020-21 | 14 | 6 | -- | 28 | 0 | 1 | 0 |
| | Total | 181 | 154 | 13 | 399 | 327 | 1 | 121 |

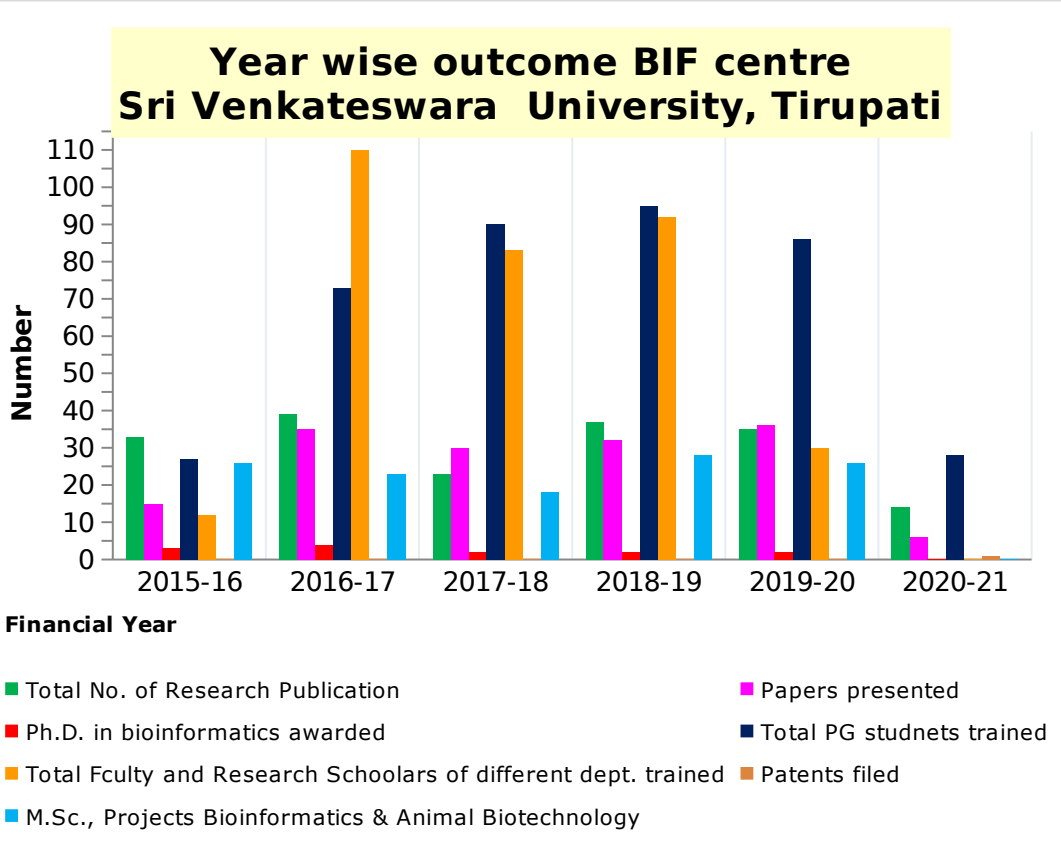
**Patents/ copyright filed:**

Dr. K. Peera*et al.,*

- **1st Patent Publication granted:** Patent Title: *A novel medicinal …..Patent Application No.: 202141043589A.Publication Dt: 5/11/2021.
- **2nd Patent filling under process:** Patent Title: * Formulated organic Drip Cleaner with plant growth supplements. Product name Drip Safe ™ (NPOF – ANGRU, Poshan Incubation Centre, RARS Tirupati)
- **3rd Patent filling under process:** Cominational Anti-inflamatory and pain relief gel - Ayurvedic Preparation (Application submitted for YUSH apporval)

## Inter-Institutional collaboration

- Sri Venkateswara Institute of Medical Sciences (SVIMS), Tirupati.
- ZastraInnavoationsPvt, Banglore.
- IGNOU, New Delhi
- Path Gene Health Care Pvt., Ltd., Tirupati
- Bio-Ayush Technologies Pvt., Ltd., Rangampeta, Tirupati, Andhra Pradesh
- NBPGR, Division of Bioinformatics and Genomics, ICAR, PUSA, New Delhi.
- SPMVV, Département of Biotechnology, Tirupati
- Sri Sathya Sai Institute of higherlearning, Bioscience, Puttaparthi.
- ANGR Agriculture Research Station, Tirupati




## Incentive Awards Received from DBT, New Delhi

Department of Biotechnology
Biotechnology Information System Network
Ministry of Science & Technology, Govt. of India

Incentive Awards for publications-2015

This Certificate is Awarded to
Bioinformatics Infrastructure Facility,
Sri Venakteswara University, Tirupati
for getting the second Position
in the category of BIF ( Universities)
for publication of papers in the journals of high repute in the year 2014

Suman Mallik, Member, Incentive Awards Committee
Dr.T. Madhan Mohan, Adviser, DBT
Dr. K. VijayRaghavan, Secretary, DBT

**Incentive Awards for Publication – 2015**

Department of Biotechnology
Biotechnology Information System Network
Ministry of Science & Technology, Govt. of India

Incentive Awards for publications - 2017

This Certificate is Awarded to
Bioinformatics Infrastructure Facility (BIF),
Sri Venkateswara University, Tirupati
for getting the third Position
in the category of BIF (Universities)
for publication of papers in the journals of high repute in the year 2016

Suman Mallik, Member, Incentive Awards Committee
Dr. T. Madhan Mohan, Adviser, DBT
Dr. K. Vijay Raghavan, Secretary, DBT

**Incentive Awards for Publication – 2017**

## National Workshop/ Seminars organized in BIF Centre

National workshop on "Recent Trends in Bioinformatics" organized by Prof. W. Rajendra, Co-ordinator, BIF Centre on 25th & 26th June, 2010 with DBT, New Delhi financial support

National Lecture-cum-Workshop on "Application of Chemoinformatics and Big data in Drug Discovery" organized by Prof. K.Yellamma, Co-ordinator, DBT-BIF Centre on 24th & 25th March, 2017 with UGC & DBT, New Delhi financial support

## 26th BTISnet Annual Coordinators meet – 2015 organized under DBT- BIF Centre on 03rd & 04th February, 2015 with DBT, New Delhi financial support

Letter of Appreciation from DBT, Govt. of India, New Delhi for conducting 26th BTISnet Annual Coordinators meet – 2015 at SV University, Tirupati

## National Lecture-cum-Workshop on "Application of Chemoinformatics and Big data in Drug Discovery

Eminent Scientists delivering lectures on Chemoinformatics and Big data at at National Lecture-cum-Workshop on "Application of Chemoinformatics and Big data in Drug Discovery" organized by DBT- BIF Centre on 24th & 25th March, 2017

Oragnized an *International Conference on* "Advances in Biosciences and Technology: Impact on Plant, Animal and Human Health" (ICABT-2019)
&
*One day Workshop on* "Bioinformatics in Human Health" (24th – 26th December, 2019) under DBT-BIF Centre.

ICABT – 2019 Inaugural Session

Release of ICABT – 2019 proceedings