

THRUST AREAS: CENTRE FOR EMERGING DISEASES

1. Centre coordinator: Dr Sanjay Gupta

2. Brief write-up covering importance of area, its present status, activities completed at IIIT and activities going on and those proposed to be taken up in near future.

Newly emerged, re-emerged infectious and life style diseases constitute a global threat that puts every nation and every person at risk. 'Centre for Emerging Diseases' address questions of molecular pathogenesis of emerging viral and bacterial pathogens (host pathogen interactions, essential metabolic pathways of pathogens), structural biology, life style diseases such as cancer, cardiovascular diseases and the design of novel diagnostics and therapeutics. The research activities at the 'Centre for Emerging Diseases' is supported by extramural research funding from various agencies of Govt. of India including Department of Biotechnology (DBT), Department of Science & Technology (DST), Indian Council of Medical Research (ICMR) and All India Council for Technical Education (AICTE).

Newly emerged and re-emerged diseases in the recent past caused by SARS, Chikungunya (CHIKV) and other viruses have amply highlighted the vulnerability of developing and developed nations. Research is being carried out on emerging/re-emerging pathogens specifically CHPV, endemic to India with 70% mortality among children and CHIKV with its annual large scale outbreaks in the country since 2006 when it infected ~1.6 million individuals. The on-going research objectives are to understand the molecular and cell biology of pathogen-host-vector interactions in these emerging viral diseases; study the pathogen specific remodeling processes of the host/vector cell; identify interactions which could be target for therapeutics and identify peptide based inhibitors. The emerging viruses research is funded by several research grants worth ~ 6.7 crore from Govt. of India funding agencies that include DBT, DST, ICMR and AICTE.

In view of the rapid pace with which multidrug resistant strains of almost all group of pathogens are emerging, the need for new antibacterial compounds cannot be overemphasized. Research efforts have been initiated for early-stage rational drug discovery for a novel antimicrobial agent(s). X-ray crystal structure of a potential drug target from human pathogens responsible for infecting respiratory and/or gastrointestinal tract is being elucidated. The availability of the 3D – structural information of a drug target from

many pathogenic organisms will enable the possibility of rational structure-based design and development of both a broad-spectrum and conversely, a pathogen-specific drug molecule.

Another major area of focus is to understand the mechanism and study the role of natural compounds in combating them cancer, metabolic, neurological disorders and cardiovascular diseases. India is the vast reservoir of living traditions of ethno medicine of which many are known to have role in cancer and cardiac protection. Besides the extensive use of these Ayurveda medicines, herbal remedies have not undergone rigorous scientific assessment at their molecular, biochemical and toxicological levels. Continuing research is necessary to identify the right biomolecules in appropriate doses which are non toxic, least interactive with other drugs and disease preventive in nature. Gene regulatory elements like MicroRNAs (miRNAs) and transcription factors are researched extensively to understand the gene regulation and may lead to novel therapeutics.

The bioinformatics group construct networks of complex systems, does data mining & pattern recognition, implement machine learning systems, and develop sophisticated tools and pipelines to solve problems relevant to disease biology.

3. **External funding received, if any, amount, and details of funding agency, P.I.'s, duration etc.**

(Total projects; Rs. ~671.905 Lakhs)

The research efforts of the centre has successfully attracted research grants worth ~ 6.7 Crores from premier funding agencies of Govt. of India including Department of Biotechnology(DBT), Department of Science & Technology (DST), Indian Council for Medical Research (ICMR) and All India Council for Technical Education (AICTE).

1. Investigating microRNAs as the Next Generation Therapeutic Targets in Diabetic Cardiomyopathy. DST, Grant Value: Rs. 40 Lakhs, PI: **Dr. Vibha Rani (2018-2021)**
2. Building integrated pipeline for cancer genome analysis: Role of mobile genetic elements in cancers, Department of Biotechnology (DBT), Govt. of India. Grant value: ~**29.38 lakhs** PI: **Kamal Rawal (2017-2020)**, Co-PI **Sanjay Gupta**.
3. Identification of cellular targets of Chikungunya virus non structural proteins, Indian Council of Medical Research (ICMR), Duration: **2016-2019**, Grant value: **34.1 Lakh**, PI: **Dr. Sanjay Gupta**, Co-PI: **Dr. Reema Gabrani**
4. Nanoparticles based amperometric biosensor for detection of thyroid dysfunctioning, Department of Science and Technology (DST), Govt. of India, Duration: **2014-2016**, Grant value: **37.3 Lakh**, PI: **Dr. Sudha Srivastava**, Co-PI: **Dr. Vibha Gupta** (Project approved).

5. Development for reagents for simple immunochemical tests for the detection of Chikungunya infection, Department of Biotechnology (DBT), Govt. of India, Collaborative project among UDSC, IIIT and ICMR Virus Unit Kolkatta. IIIT, Duration: **2014-2017**, Grant value: **18 Lakh, PI: Dr. Sanjay Gupta.**
6. Purification of Chikungunya virus nsP3 Protein for peptide based inhibitor and structural studies, Department of Biotechnology (DBT), Govt. of India, Duration: **2013-2016**, Grant value: **68.6 Lakh, PI: Dr. Sanjay Gupta, Co-PI: Dr. Sanjeev K. Sharma/ Dr. Vibha Gupta/ Dr. Vijay K. Chaudhary.**
7. Structural Biology of CysE from pathogenic organisms – Potential for rational drug design, Department of Biotechnology (DBT), Govt. of India, Duration: **2013-2016**, Grant value: **40.5 Lakh, PI: Dr. Vibha Gupta Co-PI: Dr. Punit Kaur (AIIMS).**
8. Development of inhibitors to target glyoxylate and methylcitrate cycles essential for persistence of Mycobacterium tuberculosis. Indian Council of Medical Research (ICMR), IIIT, Duration: **2015-2018**, Grant value: **~20 Lakh, PI: Dr. Chittaranjan Rout (JUIT, Wagnaghat); Co-PI: Dr. Vibha Gupta.**
9. Studies on the phylogenomics and population genomics of indian Drosophila, Department of Science and Technology (DST), Govt. of India, Duration: **2014-2017**, Grant value: **34.10 Lakh, PI: Dr. Sujata Mohanty.**
10. Effect of curcumin on cardiac hypertrophy, Department of Biotechnology (DBT), Govt. of India, Duration: **2012-2015**, Grant value: **33.54 Lakh, PI: Dr. Vibha Rani.**
11. Stage specific microRNA profiling from developing chick heart, Department of Biotechnology (DBT), Govt. of India, Duration: **2012-2016**, Grant value: **43. 11 Lakh, PI: Dr. Vibha Rani.**
12. Development and evaluation of green tea catechins based intravaginal nanoemulsion gel for the treatment of urinary tract infections, Department of Biotechnology (DBT), Govt. of India, Duration: **2013-2016**, Grant value: **23.53 Lakh, PI: Dr. Shweta Dang, Co-PI: Dr. Reema Gabrani/ Dr. Javed Ali (Jamia Hamdard, New Delhi).**
13. Viral-viral and viral-host protein interactions in chandipura virus mediated encephalitis, Department of Science and Technology (DST), Govt. of India, Duration: **2010-2013**, Grant value: **35.57 Lakh, PI: Dr. Sanjay Gupta, Co-PI: Dr. Reema Gabrani/Dr. Amita Gupta (Delhi University).**
14. Mapping viral host protein interactions of Chikungunya virus, All India Council for Technical Education, under “Research Promotion Scheme”, Duration: **2009-2012**, Grant value: **15.45 Lakh, PI: Dr. Sanjay Gupta / Dr. Sanjeev K. Sharma.**
15. Mapping of interactions among Chikungunya virus proteins, Department of Biotechnology (DBT), Govt. of India, Duration: **2008-2012**, Grant value: **24.87 Lakh, PI: Dr. Sanjay Gupta, Co-PI: Dr. Reema Gabrani /Dr. Vijay K. Chaudhary (Delhi University).**
16. Up gradation of comparative and functional genomics lab, All India Council for Technical Education, under “scheme for modernization and removal of obsolescence in technical education”, Duration: **2008-2009**, Grant value: **7 Lakh, PI: Dr. Sanjeev K. Sharma, Co-PI: Dr. Sanjay Gupta.**
17. Inferring the origin, population structure and demographic history of *Drosophila malerkotliana* with population genomic approach, Department of Science and Technology (DST), Govt. of India, Duration: **2007-2010**, Grant value: **7.44 Lakh, PI: Dr. Sujata Mohanty.**

18. Designing a nanoparticles based glucose biosensors, All India Council for Technical Education (AICTE), under “Research Promotion Scheme”, Duration: **2009-2012**, Grant value: **8.4 Lakh**, **PI: Dr. Sudha Srivastava, Co-PI: Dr. Nidhi Gupta.**
19. Cardio protective properties of curcumin: Molecular interaction of cardiac transcription factors, Department of Science and Technology (DST), Govt. of India, Duration: **2009-2012**, Grant value: **19.99 Lakh**, **PI: Dr. Vibha Rani.**
20. Nanoparticle based Drug delivery system of some antiepileptic drugs for brain drug delivery through nasal route, Department of Biotechnology (DBT), Govt. of India, Duration: **2011-2014**, Grant value: **25.175 Lakh**, **PI: Dr. Shweta Dang, Co-PI: Ms. Manisha Singh/Dr. Javed Ali** (Hamdard University).

Fellowship Projects:

1. Development PLGA nanoparticles loaded with donepezil and memantine for Brain Drug Delivery through nasal route in Alzheimer’s disease, BIOCARE-DBT, **PI: Ms Atinderpal kaur (PhD student), Mentor: Dr Shweta Dang, 2017-2020, Rs 26 lakhs**
2. Deciphering the host interactions of Chandipura virus matrix protein (Ph.D. Student: Sreejith Rajasekharan) **(ICMR), Grant Value: Rs 3.0 lakhs, Supervisor : Sanjay Gupta (2014 – 2015)**
3. Differential expression pattern of miRNAs in rice root during Cr(VI) stress. DST: Grant value: Rs. 33 Lakh, **Mentor: Vibha Rani) Scientist: Sonali Dubey (2015-2018).**
4. "Rational Structure-based development of potent inhibitors targeting mycobacterial cysteine biosynthetic pathway: in silico and experimental drug design against M. tuberculosis CysE. **DST Fellow, Rs. 15,95,000, PI Sunita Gupta (PhD), Mentor: Dr. Vibha Gupta, (2015-2020).**
5. Analysis of Chikungunya virus nsP3 protein micro/macro interactors, DST - (Women Scientist Scheme- A) **Rs. 20 lacs, PI: Ipsita Nandi (PhD) Mentor: Dr. Sanjay Gupta (2018-2021).**
6. Identification of peptide/protein binders of Chikungunya, **DST - Inspire Fellowship, Rs. 410,000, Garima Agarwal, Mentor: Dr. Sanjay Gupta (2015-2020).**
7. Structure, Function and Inhibition of Isocitrate Lyases of Mycobacterium tuberculosis, DST - Inspire Fellowship, **Ms. Monika Rs. 3,80,000/year, Mentor: Dr. Vibha Gupta, (2015-2020).**

4. Major resources available in area:

(a) Physical

EQUIPMENTS FROM EXTRA MURAL FUNDING
(Exclusive for Centre for emerging diseases)

S. No.	Name of Equipment	No. of equipment	Cost (Lakhs)	Make / supplier	Date of Purchase
1	AKTA PURE Purification system	1	31.20	GE Healthcare	Feb-14
2	Deep freezer (-20C)	3	1.86	Vestfrost	Nov-08, Mar-10, Mar-14
3	Dissolution Test Apparatus	1	1.50	Veego	May-12
4	Fluorescence Microscope	2	8.29, 6.43	Olympus	Dec-09, 2016
5	Gel dryer + small instruments	1	1.37	Macflow	Nov-09
6	HPLC (Isocratic)	1	6.63	Waters	Jun-12
7	Real time PCR with PC	1	15.51	Thermo Scientific	Oct-12
8	Spectrophotometer (UV-Vis and nanodrop)	3	13.40	JH Bio, Eppendorf, Shimadzu	Dec-08, Nov-09, Apr-12
9	Thermal cycler (PCR)	3	6.76, 2.5	Eppendorf	4/1/2007, Jan 13, 2018
10	Ultra centrifuge	1	14.87	Beckman	Nov-09
11	Ultrasonicator	1	7.17	Hielscher	Dec-13
12	UV cross linker	1	1.11	Merck	Jan/14
13	Electrochemical Work Station + hand held galvanostat/potentiostat	1	10.548	CH Instruments	Mar 15

14	ELISA Reader	1	2.98	Thermo Scientific	2015
15	Work Station	1	2.3	DELL	2015
16	Refrigerated Centrifuge	1	2.1	Genetix	2014
17	Orbital shaker	1	1.97	Remi	2014
TOTAL (in Lakhs)			138.498		

Shared Facilities					
1	Centrifuge	7 (4 for CFED)	11.18	Eppendorf, Remi, G-Biosciences, Thermo Scientific, Genetix	Nov-08, Nov-09, Aug-12, Sep-10, Oct-12, Mar-14, Apr-14
2	Digital shaker Incubator	3 (2 for CFED)	8.58	New Brunswick, Remi	Nov-09, May-12, Mar-14
3	Laminar flow	3 (2 for cfed)	2.86	Atlantis, ISIC	Nov-08, Jan-11, Mar-14
4	Micropipettes	10 sets (5 sets for cfed)	5.00	Eppendorf, YVR LifeSci., Thermo Scientific, Discovery Chem.	Nov-08, Oct-09, Nov-09, Sep-10, Feb-12, Oct-12, Mar-14
5	Electrophoresis system (Vertical & Horizontal)	5 (4 sets for cfed)	5.25	BioRad, Genei, Mac Flow, G-Biosciences	Nov-08, Sep-10, Mar-14
6	PCR (thermal cycler 96 well simpli amp) model a24812ref	2	1.83	Thermo Scientific	2017

7	Thermo multi scan FC(ELISA reader)	1	3.15	Thermo Scientific	2017
---	-------------------------------------	---	------	-------------------	------

5. Details of publications, patents and Process / Equipment / Software Developed

Publications: (International):

2018

- Bhardwaj, P., Goswami,N., Narula,P., **Jain,C.K.**, Mathur, A., Zinc Oxide nanoparticles (ZnO NP) mediated regulation of bacoside biosynthesis and transcriptional correlation of *HMG-CoA reductase* gene in suspension culture of *Bacopa monnieri*. Plant Physiology and Biochemistry, 2018; 130. 148-156 [**Indexed in Scopus and SCI; Impact Factor: 2.7**].
- Bhardwaj, P., **Jain,C.K.**, Mathur, A., Comparative evaluation of four triterpenoid glycoside saponins of Bacoside A in alleviating sub-cellular oxidative stress of N2a neuroblastoma cells, Journal of Pharmacy and Pharmacology, **2018**. [**SCI & SCOPUS Indexed; Impact Factor: 2.309**].
- K. Nigam, A. Kaur, A. Tyagi , K. Manda, **R. Gabrani, S. Dang**. Baclofen-Loaded Poly (Nanoparticles for Neuropathic Pain Management: In Vitro and In Vivo Evaluation. Rejuvenation Res. Oct 11.. 2018. [**Impact factor 3.2**].
- G. Sharma, **S. Dang, S. Gupta**, and **R. Gabrani**, “Antibacterial Activity, Cytotoxicity and Mechanism of Action of Bacteriocin from Bacillus subtilis GAS101”. Med Princ Pract, **2018**;27(2):186-192.[**Impact factor: 1.5**]
- A.Kaur, N. Kapoor, S.Gupta, A. Tyagi, R. K. Sharma, J.Ali, A. K. Panda, **R. Gabrani**, and **S. Dang**, Development and Characterization of Green Tea Catechin and Ciprofloxacin Loaded Nanoemulsion for Intravaginal Delivery to Treat Urinary Tract Infection”, *Indian journal of pharmaceutical sciences*, **2018**;80(3); 442-452. (**Impact factor: 0.74**)
- Nishtha Saxena, Nancy taneja, Prakriti Shome, **Shalini Mani**. Mitochondrial donation: A boon or curse for the treatment of incurable mitochondrial diseases. J Hum Reprod Sci, 2018;11:3-9. 2018.
- Nancy Taneja, **Shalini Mani**. Vitamin D status influences mitochondrial metabolic activity and hyperglycaemic condition of skeletal muscle cells. Journal of Pharmacy Research, vol 12, Issue 2 , pp 221-226, **2018**.
- **Sudha Srivastava** and Rahul Saxena (**2018**) “An Improved Electrode for Electrochemical Device” Indian **Patent Application No 201811012008**.
- Rani, D., Saxena, R., Nayak, B., **Srivastava, S.** Cloning and expression of truncated ORF2 as a vaccine candidate against Hepatitis E Virus, 3Biotech vol 8 pp 414-418, (**2018**) [**Impact factor: 1.49, Indexed in Scopus**].
- Sharma, S. Zapatero-Rodríguez, J. Saxena, R., Kennedy, R O’ and **Srivastava, S.** Ultrasensitive direct impedimetric immunosensor for detection of serum HER2 **Biosensors and Bioelectronics** vol 106, pp 78-85, **2018**. [**Impact factor: 8.17, Indexed in Scopus**].
- K. Singal and **S. Mohanty** “Comparative genomics reveals the presence of putative Toxin-Antitoxin system in Wolbachia genomes” *Molcular Genetics and Genomics*, vol. 293(2):pp.525-540, **April, 2018**. [**Indexed in Scopus, Impact factor: 2. 979**].

- Nancy Taneja and **Priyadarshini**. “Mass Spectrometric Analysis of Proteins of L6 Skeletal Muscle Cells Under Different Glucose Conditions and Vitamin D Supplementation”. *Protein & Peptide Letters*, **2018**, 25, [**Indexed in SCOPUS Impact Factor:1.039**]
- Saxena S, Gupta A, Shukla V, **Rani V**. Functional annotation of differentially expressed fetal cardiac microRNA targets: implication for microRNA-based cardiovascular therapeutics. *3 Biotech*. **2018** Dec 1;8(12):49.
- Jain A, **Rani V**. Assessment of herb-drug synergy to combat doxorubicin induced cardiotoxicity. *Life sciences*. **2018** 15;205:97-106.
- Jain A, **Rani V**. Curcumin-mediated effects on anti-diabetic drug-induced cardiotoxicity. *3 Biotech*. **2018** 1;8(9):399.
- Dubey S, Gupta A, Khare A, Jain G, Bose S, **Rani V**. Long-and short-term protective responses of rice seedling to combat Cr (VI) toxicity. *Environmental Science and Pollution Research*. **2018** Oct 25:1-0.
- Dubey S, Shri M, Gupta A, **Rani V**, Chakrabarty D. “Toxicity and detoxification of heavy metals during plant growth and metabolism, *Environmental Chemistry Letter*, **2018 Dec**, Volume 16, Issue 4, pp 1169–1192.
- Chhabra A, **Rani V**. “Gel-Based Gelatin Zymography to Examine Matrix Metalloproteinase Activity in Cell Culture”. *Methods Mol Biol*. **2018**; 1731:83-96. Doi: 10.1007/978-1-4939-7595-2_9.
- Jain A, **Rani V**. “Anti-hypotensive Drug Induced Cardiotoxicity: An in vitro Study.” *In Vitro Cellular & Developmental Biology – Animal*, **2018 Feb**;54(2):92-98.
- S. Gupta, A. M. Lynn & **V. Gupta**, “Standardization of virtual-screening and post-processing protocols relevant to *in-silico* drug discovery.” *3 Biotech*. 8: 504, 2018. Available: <https://doi.org/10.1007/s13205-018-1523-5> [**Impact factor:1.497**].
- D. Verma, S. Gupta, K. J. Kaur and **V. Gupta**. “Is perturbation in the quaternary structure of bacterial CysE, another regulatory mechanism for cysteine synthesis?” *International Journal of Biological macromolecules*. Vol. 111, pp. 1010-1018, 2018 Available: <https://doi.org/10.1016/j.ijbiomac.2018.01.076> [**Impact factor: 3.671**].
- R. Kaur, S. Verma, P. Joshi, S. P. Singh, **M. Singh**. Cytotoxicity of Graphene Oxide (GO) and Graphene Oxide Conjugated Losartan Potassium (GO-LP) on Neuroblastoma (NB41A3) Cells, *Journal of Nanoscience and Nanotechnology*. 18, 1–11, **2018**. (**Indexed in Scopus, JCR, and I.F - 1.8**).

- Gupta,M., Prasad,Y., Sharma,S.K., **Jain,C.K.**, Identification of Phosphoribosyl-AMP cyclohydrolase, as drug target and its inhibitors in *Brucella melitensis* bv. 1 16M using metabolic pathway analysis, *Journal of Biomolecular Structure and Dynamics*, 2017 Feb;35(2):287-299. [Indexed in SCOPUS, Impact factor: **2.30**].
- Atinderpal Kaur, Sonal Gupta, Amit Tyagi, Rakesh Kumar Sharma, Javed Ali, Reema Gabrani, Shweta Dang, Development of Nanoemulsion Based Gel Loaded with Phytoconstituents for the Treatment of Urinary Tract Infection and in Vivo Biodistribution Studies, *Adv Pharm Bull*, 2017, 7(4), 611-619 doi: 10.15171/apb.2017.073 (IF=0.61)
- Kaur, Atinderpal; Saxena, Yashaswee; Bansal, Rakhi; Gupta, Sonal; Tyagi, Amit; Sharma, Rakesh Kumar; Ali, Javed; Panda, Amulya Kumar; Gabrani, Reema;Dang, Shweta; Intravaginal Delivery of Polyphenon 60 and Curcumin Nanoemulsion Gel, *AAPS PharmSciTech*,DOI: 10.1208/s12249-016-0652-6, Jan 2017 (Impact factor 1.7)
- Saxena R. and **Srivastava S.**, “Nanoparticles Empowered Microelectrode for Fast and Sensitive Detection of Thyroid Stimulating Hormone” **Sensor Letters** vol 15, pp 375-379, (2017) [Indexed in SCOPUS, Impact factor: 0.56]
- Jain A, Rani V*. Mode of treatment governs curcumin response on doxorubicin-induced toxicity in cardiomyoblasts. *Mol Cell Biochem*. 2017 Sep 19. Doi: 10.1007/s11010-017-3195-6.
- S. Saxena, A. Jain, V Rani*, MicroRNAs mediated MMP regulation: Current diagnostic and therapeutic strategies for metabolic syndrome, *Current Gene Therapy*, 2017 Jul 7. Doi: 10.2174/1566523217666170707100026.
- Chhabra A, Rani V*. Cell In Situ Zymography: Imaging Enzyme-Substrate Interactions. *Methods Mol Biol*. 2017; 1626:133-143. Doi: 10.1007/978-1-4939-7111-4_12.
- Twinkle Wahi, Sahil Dargan, Sumedha Jaitly and Vibha Rani*, miRNA Regulation of Telomerase: A novel Therapeutic Approach for Cancer. *Open Journal of Proteomics*, 2017, Jan.
- Rana, J.,Gulati, S.,Rajasekharan, S.,Gupta A.,Chaudhary, V. K. and Gupta S., Identification of potential molecular associations between Chikungunya virus non-structural protein 2 and human host proteins. **Acta Virologica** 61(1), 39-47, 2017 [Indexed in SCOPUS, Impact factor: 1.6]
- G. Sharma, K. Raturi, S. Dang, S. Gupta, and R. Gabrani, “Inhibitory effect of cinnamaldehyde alone and in combination with thymol, eugenol and thymoquinone against *Staphylococcus epidermidis*”. **J Herbal Med**, vol. 9, pp 68-73, Sep. 2017. doi.org/10.1016/j.hermed.2016.11.001 [[Indexed in SCOPUS, Impact: 1.3]
- D. Raizada, P. Kumar, T. Singh, T. Pruthi, Priyadarshini. "Albumin and its role in urolithiasis". *Asian J Pharm Clin Res*, Vol 10, Issue 10, 2017, 32-35. [Indexed in SCOPUS Impact Factor:0.40]

- Abhishek Negi, Shahrukh Husain, Priyadarshini, “A Review on Role of miRNA in Kidney Diseases”.*Journal of Global Pharma Technology*. 2017; 05(9):28-36.
- **S. Mohanty** and R. Khanna “ Genome wide comparative analysis of four Indian *Drosophila* species.” *Molcular Genetics and Genomics*, vol. 292(6):pp.1197-1208, Dec 2017. **[Indexed in SCOPUS, Impact factor: 2. 979]**
- R. Khanna, S. Mittal and **S. Mohanty** “ Development of Computer Algorithm for editing of NGS Metagenome Data” *J of Comp. Biology*, Sep; vol.24 (9):pp. 882-894, 2017. **[Indexed in SCOPUS, Impact factor: 1. 032]**
- K. Singal, R. Khanna and **S. Mohanty** “Is *Drosophila*-microbe association species-specific or region specific? A study undertaken involving six Indian *Drosophila* species” *World J of Microbiology and Biotechnology*, vol.33(6):103, Jun, 2017. **[Indexed in SCOPUS, Impact factor: 1. 658]**
- R. Khanna and **S. Mohanty** “ Whole genome sequence resource of Indian *Zaprionus indianus*.” *Molcular Ecology Resources*, May; Vol 17(3)pp.,557–564, 2017 **[Indexed in SCOPUS, Impact factor: 7.332]**
- Nancy Taneja, Rajesh Khadgawat, **Shalini Mani**. Vitamin D receptor gene polymorphisms and haplotype analysis in Type 2 Diabetes Mellitus patients from North India. *Asian Journal of Pharmaceutical and clinical research*. 10 (1), 248-252, 2017.
- Nancy Taneja, Rajesh Khadgawat, Baibaswata Nayak, **Shalini Mani**. Study of mitochondrial DNA copy number variation in peripheral blood of Type 2 Diabetes patients: A Pilot Study. *Int. J. Pharm. Sci. Rev. Res.*, 44(2),210-214, 2017.

2016

- Deepak Sharma, Rakesh Kumar Sharma, Aseem Bhatnagar, Dhruv K Nishad, Thakuri Singh, Reema Gabrani, Sanjeev K Sharma, Javed Ali, Shweta Dang, “ Nose to brain delivery of midazolam loaded PLGA nanoparticle: in vitro and in vivo investigations”. *Current Drug Delivery* 2016;13(4):557-64 (Impact factor: 1.44)
- Deepak Sharma, Rakesh Kumar Sharma, Aseem Bhatnagar, Dhruv K Nishad, Thakuri Singh, Reema Gabrani, Sanjeev K Sharma, Javed Ali, Shweta Dang, “ Nose to brain delivery of midazolam loaded PLGA nanoparticle: in vitro and in vivo investigations”. *Current Drug Delivery* 2016;13(4):557-64 (IF: 1.44)
- Chanchal Manghani, Avantika Gupta, Vinil Tripathi, Vibha Rani*, Cardioprotective potential of aurcumin against norepinephrine induced cell death: A microscopic study. *J of Microscopy*, 2016, 2016, Oct 25. Doi: 10.1111/jmi.12492.

- Atale N, Saxena S, Nirmala JG, Narendhirakannan RT, Mohanty S, Rani V*. Synthesis and Characterization of Syzygium cumini Nanoparticles for Its Protective Potential in High Glucose-Induced Cardiac Stress: a Green Approach. Appl Biochem Biotechnol. 2016 Oct 12.
- Rani V, Deep G, Singh RK, Palle K, Yadav UC. Oxidative stress and metabolic disorders: Pathogenesis and therapeutic strategies. Life Sci. 2016 Feb 3. pii: S0024-3205(16)30052-2. doi: 10.1016/j.lfs.2016.02.002.
- Neha Atale, Vibha Rani*. Syzygium Cumini: An Effective Cardioprotective via its Antiglixyoxidation Potential. Int. J. Pharm. Sci. Rev. Res., 37(1), March – April 2016; Article No. 09, Pages: 42-51
- Sharma, S. Raghav, R. Kennedy, R.O. and **Srivastava, S.** "Advances in Ovarian Cancer Diagnosis: A Journey from Immunoassays to Immunosensors" **Enzyme and Microbial Technology** vol 89, pp 15–30, (2016). [Impact factor: 2.6, Indexed in Scopus]
- Raghav, R. and **Srivastava, S.** " Immobilization Strategy for Enhancing Sensitivity of Immunosensors: L-Asparagine-AuNPs as a promising alternative of EDC-NHS activated citrate-AuNPs for Antibody immobilization" **Biosensors and Bioelectronics** vol 78, pp 396-403, 2016. [Impact factor: 7.4, Indexed in Scopus]
- Raghav R. and **Srivastava S.**, "Copper(II) Oxide Nanoflakes Based Impedimetric Immunosensor for Label Free Determination of Cancer Antigen-125" **Sensor Letters** vol 14, pp 97-101, (2016) [Indexed in SCOPUS, Impact factor: 0.56]
- K. Nigam, **S. Gupta**, N. Gupta. "Biosurfactants: Current Perspectives in Environmental Remediation." Journal of Applied Life Sciences International, 7(2): 1-19, 2016.
- L. Chakrawarti, R. Agrawal, S. Dang, **S. Gupta**, R. Gabrani. "Therapeutic effects of EGCG: a patent review." **Expert Opin Ther Pat.** 26(8):907-16, 2016 . [Impact factor : **4.297**]
- G. Sharma, S. Sharma, P. Sharma, D. Chandola, S. Dang, **S. Gupta**, R. Gabrani. "Escherichia coli biofilm: development and therapeutic strategies." J Appl Microbiol. 121:309-19, 2016. [Impact factor: 2.386]
- S. Agarwal, G. Sharma, S. Dang, **S. Gupta**, R. Gabrani. "Antimicrobial Peptides as Anti-infectives against Staphylococcus epidermidis". **Med Princ Pract.** 25:301-8, 2016. [Impact factor : **1.34**]
- Priyadarshini, K. Jain, R. Sood. "Evaluation of renal epithelial cell protein under stress condition". Int J Pharm Pharm Sci, Vol 8, Issue 11,2016, 337-340.
- R. Khanna, K. Singal and **S. Mohanty**"Quantification of single *drosophila* fly genomic DNA using UV Spectrophotometry, Nanodrop And Qubit Fluorometry" *Praniki*, Vol. XXVIII, pp.65-76, Dec, 2016

- Nancy Taneja, Rajesh Khadgawat, **Shalini Mani**. Bsm I and TaqI polymorphism in vitamin D receptor gene of Type 2 diabetes Mellitus patients from North India. Asian Journal of Pharmaceutical and clinical research. 9 (3), 186-189,2016
- Samiksha Kukal, Nancy Taneja, **Shalini Mani**. Vitamin D deficiency may affect the glucose uptake in L6 cells by affecting the mitochondrial metabolism. Int J Pharma and Bio Sci, 7(4): (B) 459 – 466, 2016
- Akshita Gupta, Shahrukh Husian, **Shalini Mani**. Role of metals in Alzheimer's disease. Int. J. Life Sc. Bt & Pharm. Sci. Vol.1, Issue 1, pg 1-11, 2016.
- Nancy Taneja, Priyadarshini, **Shalini Mani**. “Vitamin D receptor gene polymorphisms (TaqI) in North Indian population with type 2 diabetes. International Journal of Basic and Applied Biology, Vol 3, Issue 1, 75-75, 2016.

2015

- **Priyadarshini**, K. Jain. “Cytoprotective effect of Ocimum extract on injured renal epithelial cells”. Int J Pharm Pharm Sci, Vol 7, Issue 10, October 2015, 15-18.
- Kannissery Pramod, M. R. Aji Alex, **Manisha Singh, Shweta Dang**, Shahid H. Ansari, and Javed Ali, “Eugenol nanocapsule for enhanced therapeutic activity against periodontal infections,” Journal of Drug tragetting, Early Online: 1–10, June 2015 DOI: 10.3109/1061186X.2015.1052071
- Neeti Mittal, Vrinda Kulshreshtha, **Shweta Dang**, “Globalization of Regulatory Affairs In Healthcare Industry” Asian Journal of Pharmaceutical Sciences and Research, Vol 8, Issue 6, 2015, 46-49.
- Rajasekharan, S., Kumar,K., Rana,J., Gupta,A., Chaudhary V.K., **Gupta,S.**, “Host interactions of Chandipura virus matrix protein” Acta Tropica 149 pp.27–31,2015 [Indexed in Scopus]
- **Jain, C.K.**, Arora,S., Khanna,A., Gupta,M., Wadhwa,G., **Sharma, S.K.**, The Ubiquitin-Proteasome Pathway an Emerging Anticancer Strategy for Therapeutics: A Patent Analysis, Recent patents on anti-cancer drug discovery 10 (2), 201-213. [Impact factor 2.86; Indexed in SCOPUS]
- Jain, A., Atale, N., Kohli, S., **Bhattacharya, S.**, Sharma, M. and **Rani, V.** “An assessment of norepinephrine mediated hypertrophy to apoptosis transition in cardiac cells: A signal for cell death”. Chem Biol Interact. Vol. 225, pp. 54-62, 2015. [Indexed in Scopus, Impact factor: 2.982]

- Bajpai, N, Chatterjee, A, **Dang, S, Sharma, S. K.**, “Metrics for leveraging more in Clinical Data Management: proof of concept in the context of vaccine trials in an Indian pharmaceutical company”.Asian Journal of Pharmaceutical and Clinical Research, Vol 8 (3), 350-357, 2015
- Bajpai, N, Chatterjee, A, **Dang, S, Sharma, S. K.**, “Insights in paper Case Report Form Design from Vaccine Trials in an Indian Pharmaceutical Company: Clinical Data Management prospective”. International Journal of PharmTech Research, Vol 8 (1), 146-153, 2015
- Bajpai, N; **Dang, S; Sharma, S. K.**, “Standardize Operating procedure for Clinical Data Management (CDM), exploring the possibility under Indian Regulations”. International Journal of Pharmaceutical and Clinical Research, Vol 7 (3), 2015
- Tanuja Yadav, Mishra S, **Das S**, Aggarwal S, **Rani V.**”Anticedants and natural prevention of environmental toxicants induced accelerated aging of skin”.Environ Toxicol Pharmacol., Vol. 9(1):384-391, 2015.
- Raghav R. and Srivastava S. “Core-shell Gold-Silver nanoparticles based impedimetric immunosensor for cancer antigen CA125” Sensors and Actuators :B Chemical, DOI: 10.1016/j.snb.2015.05.108 2015
- P. Nag, R. Rajput, S. Dhaliwal, S. Kumar, D. Prajapat, **M. Singh**, Formulation and Characterization Of Propranolol Nanoparticles For Transmucosal Nasal Drug Delivery, Macromolecular symposia, Volume 347,Issue 1,pages 32–38,January 2015. [Indexed in Scopus, Impact factor: 0.913].
- Sharma, D., Sharma, R.K., Sharma, N., **Gabrani, R., Sharma, S.K.**, Ali,J. and **Dang, S.** “Nose-to-brain delivery of PLGA-diazepam nanoparticles”. AAPS Pharm Sci Tech. DOI: 10.1208/s12249-015-0294-0, 2015. [Indexed in Scopus, Impact factor: 1.776]
- Kalsi, A., Singh, S., Taneja, S.K. and **Mani, S.** “Current treatments for type 2 diabetes, their side effects and possible complementary treatments”. Int J Pharm Pharm Sci. Vol. 7(3), pp. 315-318, 2015. [Indexed in Scopus, Impact factor: 0.91]
- Singh, N.P., Tiwari, A., Bansal, A., Thakur, S., Sharma, G. and **Gabrani, R.** “Genome level analysis of bacteriocins of lactic acid bacteria”. Comput Biol Chem. Vol. 56, pp. 1-6, 2015. [Indexed in Scopus, Impact factor: 1.595]
- Dudha, N., Rana, J., Rajasekharan, S., **Gabrani, R.**, Gupta, A., Chaudhary, V.K. and **Gupta, S.** “Host-pathogen interactome analysis of Chikugunya virus envelope proteins E1 and E2”. Virus Genes. Vol. 50(2), pp. 200-209, 2015. [Indexed in Scopus, Impact factor: 1.9]
- **Jain, C.K.**, Gupta, M., Prasad, Y., Wadhwa, G. and **Sharma, S.K.** “Homology modelling and molecular dynamics simulations of a protein serine/threonine phosphatase stp1 in Staphylococcus aureus N315: a potential drug target”. Mol Simulat. Vol. 41(7), pp. 592-599, 2015. [Indexed in Scopus, Impact factor: 1.11]

- Nancy Taneja, Samiksha Kukal, **Shalini Mani**. CytB: a hot spot for pathogenic mutations in mitochondrial genome of breast cancer and ovarian cancer patients. *Int J Pharm Pharm Sci*, 7 (9): 128-135, 2015.

2014

- Chauhan, R., Wadhwa, G., **Sharma, S.K.** and **Jain, C.K.** "Current developments in therapeutic and diagnostic strategies for Q fever: Glimpses of patent analysis". *Recent patents on anti-infective drug discovery*. Vol. 9(2), pp. 104-11, 2014. [Indexed in Scopus]
- Chauhan, R., Wadhwa, G., **Sharma, S.K.** and **Jain, C.K.** "Patent prospects toward therapeutics and diagnostics of anthrax". *Recent Pat Antiinfect Drug Discov*. Vol. 9 (1), pp. 52-61, 2014. [Indexed in Scopus]
- Bhaskar, A., Raturi, K., **Dang, S.** and **Gabrani, R.** "Current perspectives on the therapeutic aspects of chronic myelogenous leukemia". *Expert Opin Therap Pat*. Vol. 24, pp. 1117-1127, 2014. [Indexed in Scopus, Impact factor: 3.4]
- Raghav, R. and **Srivastava, S.** "Direct ELISA-based reagentless amperometric immunosensor for cancer antigen 125". *Nanotrends*. Vol 16(2), pp. 1-6, 2014.
- Dudha, N., Rana, J., **Gabrani, R.**, Gupta, A., Chaudhary, V.K. and **Gupta, S.** "Small scale expression, solubilisation and characterization of Chikungunya virus structural proteins". *Asian J Pharm Clin Res*. Vol. 7(5), pp.268-271, 2014. [Indexed in Scopus].
- Singh, A., Budhraj, A., Shrivastava, A., Satyavana, A., Gupta, A., Gupta, M., Wadhwa, G., **Sharma, S.K.** and **Jain, C.K.** "Current status of anti-tuberculosis therapy: A patent analysis". *Recent Pat Antiinfect Drug Discov* Vol. 9(1), pp. 25-40, 2014. [Indexed in Scopus]
- Sarethy, I.P., Kashyap, A., Bahal, U., Sejwal, N. and **Gabrani, R.** "Study of liquid culture system for micropropagation of the medicinal plant *Solanum nigrum* L. and its effect on antioxidant property". *Acta Physiol Plant*, DOI 10.1007/s11738-014-1655-0, 2014. [Indexed in Scopus Impact factor: 1.732]
- Rana, J., Rajasekharan, S., Gulati, S., Dudha, N., Gupta, A., Chaudhary, V.K. and **Gupta, S.** "Network mapping among the functional domains of Chikungunya virus nonstructural proteins." *Proteins*. Vol. 82(10), pp. 2403-2411, 2014. [Indexed in Scopus, Impact factor: 3.3]
- Sharma, D., Maheshwari, D., Philip, G., Rana, R., Bhatia, S., **Singh, M.**, Gabrani, R., **Sharma, S.K.**, Ali, J., **Sharma, S.K.** and **Dang, S.** "Formulation and optimization of polymeric nanoparticles for intranasal delivery of lorazepam using box-behnken design: in vitro and in vivo evaluation". *Biomed Res Int*. Vol. 2014, Article ID 156010, pp. 14, 2014. [Indexed in Scopus, Impact factor: 2.7]
- Atale, N., Gupta, S., Yadav, U.C.S. and **Rani, V.** "Cell-death assessment by fluorescent and nonfluorescent cytosolic and nuclear staining techniques". *J Microsc*. Vol. 255, pp.7-19, 2014. [Indexed in Scopus, Impact factor: 2.15]

- Gupta, S., Bansal, R., Ali, J., Gabrani, R. and Dang, S. "Development and characterization of Polyphenon 60 and caffeine microemulsions for enhanced antibacterial activity". Biomed Res Int. Vol. 2014, Article ID 932017, pp. 7, 2014. [Indexed in Scopus, Impact factor: 2.7]
- Jain, C.K., Gupta, M., Prasad, Y., Wadhwa, G. and **Sharma, S.K.** "Homology modeling and protein engineering of alkane monooxygenase in Burkholderia thailandensis MSMB121: in silico insights", Journal of Molecular Modeling, Vol. 20(7), pp. 2340-2351, 2014. [Indexed in Scopus, Impact factor: 1.9]
- Sharma, G., Raturi, K., **Dang, S., Gupta, S.** and **Gabrani, R.**, "Combinatorial antimicrobial effect of curcumin with selected phytochemicals on Staphylococcus epidermidis". Journal of Asian Natural Products Research. Vol. 16(5), pp. 535-541, 2014. [Indexed in Scopus, Impact factor: 0.97]
- Sharma, D., Gabrani, R., **Sharma, S.K.**, Ali, J. and **Dang, S.**, "Development of Midazolam Loaded Poly (D, L-lactide-co-glycolic acid) Nanoparticles for Treatment of StatusEpilepticus".Adv. Sci. Lett. Vol. 20(7-9),pp. 1526-1530, 2014. [Indexed in Scopus, Impact Factor: 1.2]
- Gupta, S., Bansal, R., Maheshwari, D., Ali, J., **Gabrani R.** And **Dang,S.** "Development of a Nanoemulsion System for Polyphenon 60 and Cranberry". Adv. Sci. Lett. Vol. 20 (7-9), pp.1683-1686, 2014. [Indexed in Scopus, Impact Factor: 1.2]
- **Jain, C.K.**, Sethi, R., Sharma, V., Mathur, A. and **Sharma, S.K.** "Enhanced interaction of shuffled Mutacin IV, an antimicrobial peptide of bacterial origin, with surface protein ISDB of Staphylococcus aureus", International Journal of Peptide Research and Therapeutics. Vol. 20(1), pp. 71-76, 2014. [Indexed in Scopus, Impact factor: 0.825]
- Rawal, S., Singh, P., Gupta, A. and **Mohanty, S.** "Dietary intake of curcuma longa and Emblica officinalis increases life span in Drosophila melanogaster", Biomed Res Int. Vol. 2014, Article ID 910290, 2014. [Indexed in Scopus, Impact factor: 2.706]
- Rajasekharan, S., Rana, J., Gulati, S., Gupta, V. and **Gupta, S.** "Neuroinvasion by Chandipura virus." Acta Trop, Vol. 135, pp. 122-126, 2014. [Indexed in Scopus, Impact factor: 2.8]
- **Jain, C.K.**, Gupta, A., Dogra, N., Kumar, V.S., Wadhwa, G. and **Sharma, S.K.** "MicroRNA therapeutics: The emerging anticancer strategies". Recent Pat Anticancer Drug Discov. Vol. 9(3), pp. 286-296, 2014. [Indexed in Scopus, Impact Factor: 2.7].
- Atale, N., Gupta, K. and **Rani, V.** (2014). Protective effect of Syzygium cumini against pesticide-induced cardiotoxicity. Environ Sci Pollut Res. Vol. 21(13), pp. 7956-7972, 2014. [Indexed in Scopus, Impact Factor: 2.618]
- Bajpai, N., **Dang, S.** and **Sharma, S.K.** "Clinical data management operational model for the conduct of Myfive™ vaccine study". International Research Journal of Humanities, Engineering & Pharmaceutical Sciences (IJHEPS™). Vol. 1(7), pp. 2249-2569, 2014.

- Chadah, R., Shah, R. and **Mani, S.** “Analysis of reported SCO2 gene mutations affecting cytochrome c oxidase activity in various diseases”. *Bioinformation*, Vol. 10(6), pp. 329-333, 2014.

2013

- Kumar, K., Rajasekharan, S., Gulati, S., Rana, J., Gabrani, R., **Jain, C.K.**, Gupta, A., Chaudhary V.K. and **Gupta, S.** “Elucidating the interacting domains of Chandipura virus Nucleocapsid protein”. *Advances in Virology*. Vol. (2013) Article ID 594319, 2013. [Indexed in Scopus]
- Kaushik, P., **Jain, C.K.**, **Gabrani, R.** and Singh, T.R. “Study on variability assessment and evolutionary relationships of glutamate racemase in *Pseudomonas* species”. *Interdisciplinary Sciences: Computational Life Sciences*. Vol. 5(4), pp. 247-257, 2013. [Indexed in Scopus, Impact factor: 0.672].
- Kohli, S., Chhabra, A., Jaiswal, A., Rustagi, Y., Sharma, M. and **Rani, V.** “Curcumin suppresses gelatinase B mediated norepinephrine induced stress in H9c2 cardiomyocytes”. *PLoS One*. Vol. 8, pp. e76519-76531, 2013. [Indexed in Scopus, Impact factor: 3.534]
- Aminu, N., Baboota, S., Pramod, K., Singh, M., **Dang, S.**, Ansari, S.H., Sahni, J.K. and Ali, J. “Development and evaluation of triclosan loaded poly-ε-caprolactone nanoparticulate system for the treatment of periodontal infections”. *Journal of Nanoparticle Research*. Vol. 15(11), pp. 1-15, 2013. [Indexed in Scopus, Impact factor: 2.278].
- Atale, N. and **Rani, V.** “GC-MS analysis of bioactive components in the ethanolic and methanolic extract of *Syzygium cumini*”. *International Journal of Pharma and Bio Sciences*. Vol. 4(4), pp. 296-304, 2013. [Indexed in Scopus, Impact factor: 0.67]
- **Jain, C.K.**, Gupta, A., Tewari, A., Sharma, V., Kumar, V.S., Mathur, A. and **Sharma, S.K.** “Molecular docking studies of bacoside from *Bacopa monnieri* with LRRK2 receptor”. *Biologia*, Vol. 68(6), pp. 1068-1071, 2013 [Indexed in Scopus, Impact factor: 0.5]
- Sharma, S. and **Srivastava, S.** “Gold microwires based amperometric biosensor exploiting microbial architecture”. *Biosensors and Bioelectronics*. Vol. 50, pp. 174-179, 2013. [Indexed in Scopus, Impact factor: 5.437]
- Rajasekharan, S., Rana, J., Gulati, S., **Sharma, S. K.**, **Gupta, V.** and **Gupta, S.** “Predicting the host protein interactors of Chandipura virus using a structural similarity-based approach”. *FEMS Pathogens and Disease*. Vol. 69(1), pp. 29-35, 2013. [Indexed in Scopus, Impact factor: 2.44]
- Gupta, S., Jain, A., Chakraborty, M., Sahni, J. K., Ali, J. and **Dang, S.** “Oral delivery of therapeutic proteins and peptides: a review on recent developments”. *Drug Delivery*. Vol. 20(6), pp. 237-246, 2013. [Indexed in Scopus, Impact factor: 1.930]

- **Jain, C.K.**, Dasgupta, A., Taneja, N., Chaubey, S., **Gabrani, R., Sharma, S.K.** and **Gupta, S.** “Putative drug targets in *Rhizopus oryzae*: in-silico insight”. *International Journal of Bioinformatics Research and Applications*. Vol. 9(6), pp. 595-603, 2013. [Indexed in Scopus]
- Rajasekharan, S., Gulati S. and **Gupta S.** “Interfacial interactions involved in biological assembly of Chandipura virus nucleocapsid protein”. *Virus Genes*. Vol. 46(3), pp. 535-537, 2013. [Indexed in Scopus, Impact factor: 1.79]
- Rana, J., Rajasekharan, S., Gulati S., Bharti I., Jain S. and **Gupta S.** “Deciphering the host-pathogen interface in Chikungunya virus-mediated sickness.” *Archives of Virology*. vol. 158, no. 6, pp. 1159-1172, 2013. [Indexed in Scopus, Impact factor: 2.03]
- Gupta, A., Verma, A., Mishra, A. K., Wadhwa, G., **Sharma, S.K.** and **Jain, C.K.** “The Wnt pathway: Emerging anticancer strategies”. *Recent Pat Endocr Metab Immune Drug Discov*. Vol. 7, pp.138-147, 2013. [Indexed in Scopus]
- Gupta, M., Wadhwa, G., **Sharma, S.K.** and **Jain, C.K.** “Homology evolute and validation of SAS2271 transcriptional regulator of AraC family in *Staphylococcus aureus*”, *Asian Pac J Trop Dis*; 3(1): 1-4, 2013. [Indexed in Scopus, Impact factor: 0.37]
- Jain, A., Manghani, C., Kohli, S, Nigam, D. and **Vibha, R.** “Tea and human health: The dark shadows”. *Toxicol Lett*. Vol. 220(1), pp. 82-87, 2013. [Indexed in Scopus, Impact factor: 3.706]
- Arora, S., Rana, R., Chhabra, A., Jaiswal, A. and **Rani, V.** “miRNA-transcription factor interactions: a combinatorial regulation of gene expression”. *Mol Genet Genomics*. Vol. 288(3-4), pp. 77-87, 2013. [Indexed in Scopus, Impact factor: 2.831]
- Atale, N., Chakraborty, M., **Mohanty, S., Bhattacharya, S.**, Nigam, D., Sharma, M. and **Rani, V.** “Cardioprotective Role of *Syzygium cumini* Against Glucose-Induced Oxidative Stress in H9C2 Cardiac Myocytes”. *Cardiovasc Toxicol*. Vol. 13(3), pp. 278-289, 2013. [Indexed in Scopus, Impact factor: 2.060]
- Roy, N., Gaur, A., Jain, A., **Bhattacharya, S.** and **Rani, V.** “Green synthesis of silver nanoparticles: An approach to overcome toxicity”. *Environmental Toxicology and Pharmacology*. Vol. 36(3), pp. 807-812, 2013. [Indexed in Scopus, Impact factor: 2.093]
- Bajpai, N., Chatterjee, A., **Dang, S.** and **Sharma, S.K.** “A perspective of clinical data management in the context of the application of Indian Good Clinical Practices” *International Journal of Technical Research and Applications*. Vol. 1(4), pp. 35-38, 2013.
- Shrivastav, A. and **Srivastava, S.** “Human Sweet Taste Receptor: Complete Structure Prediction and Evaluation”. *Int. J of Chemical and Analytical sciences*. Vol. 4, pp. 24-32, 2013. [Impact factor: 0.47]
- Tewari, A.K., Rashi, Wadhwa, G., **Sharma, S. K.** and **Jain, C.K.** “BIRS – Bioterrorism Information Retrieval System”. *Bioinformation* Vol. 9(2), pp.112-115, 2013. [Impact factor:1.15]

- Rustagi, Y. and **Rani, V.** "Screening of MicroRNA as potential CardiomiRs in Rattus norvegicus heart related dataset". *Bioinformation*. Vol. 11(9), pp. 919-922, 2013.
- Bajpai, N., Sharma, M., Chatterjee, A., **Dang, S.** and **Sharma, S.K.** "Standardization of procedural implementation in Clinical Data Management, with reference to the trials: DTwP-HepB-Hib vaccine (Myfive™) vs. Pneumococcal vaccine (NUCOVAC®)". *Indian Journal of Scientific Research (IJSR)*. Vol. 4(2), pp. 179-191, 2013.
- Bajpai, N., Chatterjee, A., **Dang, S.** and **Sharma, S.K.** "Clinical data management: lessons drawn from vaccine clinical trials of an Indian pharmaceutical company". *The Pharma Review*. Vol. 11(65), 2013.
- Bajpai, N., Mohanty, L., Chatterjee, A., **Dang, S.** and **Sharma, S.K.** "Schematic depiction of CDM procedures: Based on the experiences drawn from the vaccine trials conducted in an Indian pharmaceutical company". *International Journal of Pharmaceutical Sciences*. Vol. 2(5-6), pp. 93-96, 2013.
- Nigam, D. and **Rani, V.** "Therapeutic Efficacy of Tumeric on 6-OHDA-Induced-neurodegeneration in albino rats". *International Journal of Medicine and Pharmaceutical Science (IJMPS)*. Vol. 3(1), pp. 27-38, 2013.
- Gulati, N. and **Mohanty, S.** "Sex comb variation in four species of Drosophila species from Northern India". *International Journal of Biotechnology and Bioengineering Research*. Vol. 4(4), pp.329-334, 2013.
- Prachi, Balwani, I., Singh, P., Mayank., Gulati, N. and **Mohanty, S.** "Development of molecular markers for phylo- and population genomics of Indian Drosophila". *International Journal of Biotechnology and Bioengineering Research*. Vol. 4(6), pp. 565-572, 2013
- Bhatia, S., Rachana, Bansal, P. and **Mani, S.** "Mitochondrial diabetes: Different diagnostic features and its possible management". *J Int Med Sci Acad*, 2013.
- Chadha, R., Shah, R., Bansal, P. and **Mani, S.** "Cytochrome c oxidase deficiency and leigh syndrome: A possible therapeutic target". *J Med Sci Research*. Vol. 4(1), 2013.

2012

- Rajasekharan, S., Rana, J., Dudha, N., Kumar, K., **Gabrani, R., Sharma, S.K.,** Gupta, A., Vrati, S., Chaudhary, V.K. and **Gupta, S.** "Mapping of interactions among Chikungunya virus evolutegeal proteins". *Virus Res*. Vol. 169(1), pp. 231-236, 2012. [Indexed in Scopus, Impact factor: 3.0].
- Kumar, K., Rana, J., Rajasekharan, S., **Gabrani, R., Sharma, S.K.,** Gupta, A., Chaudhary, V.K. and **Gupta, S.** "Intraviral protein interactions of Chandipura virus". *Arch Virol*. Vol. 157, pp. 1949-1957, 2012. [Indexed in Scopus, Impact factor: 2.1].

- **Rawal, K.**, Dorji, S., Kumar, A., Ganguly, A. and Grewal, A.S. "Identification and characterization of MGEs and their insertion sites in the gorilla genome". *Mob Genet Elements*, Vol. 3(4), pp. e25675- e25696, 2012. [Indexed in Scopus]
- Iqbal, M.A., Shadab M., Sahni, J.K., Baboota, S., **Dang, S.** and Ali, J. "Nanostructured lipid carriers system: Recent advances in drug delivery". *J Drug Targeting*. Vol. 20(10), pp. 813-830, 2012. [Indexed in Scopus, Impact factor: 3.08].
- Chittoria, A., **Mohanty, S.**, Jaiswal, Y. and Das A. "Natural selection mediated association of the Duffy (FY) gene polymorphisms with Plasmodium vivax malaria in India". *PLoS One*. Vol. 7, pp. e45219, 2012. [Indexed in Scopus, Impact factor: 3.534]
- Agrawal, A., **Dang, S.** and **Gabrani, R.** "Recent patents on anti-telomerase cancer therapy". *Rec Pat Anticancer Drug Discov*. Vol. 7(1), pp. 102-117, 2012. [Indexed in Scopus, Impact factor: 2.82]
- Dey, B., Thukral, S., **Krishnan, S.**, Chakrobarty, M., Gupta, S., Manghani, C. and **Rani, V.** "DNA-protein interactions: methods for detection and analysis". *Mol Cell Biochem*. Vol. 365(1-2), pp. 279-299, 2012. [Indexed in Scopus, Impact factor: 2.388]
- Sharma, A., **Gupta, S.**, **Sarethy, I.P.**, **Dang, S.** and **Gabrani, R.** "Green tea extract: possible mechanism and antibacterial activity on skin pathogens" *Food Chem*. Vol. 135(2), pp. 672-675, 2012. [Indexed in Scopus, Impact factor: 3.259]
- Sharma, S., Gupta, N. and **Srivastava, S.** "Modulating electron transfer properties of gold nanoparticles for efficient biosensing". *Biosensors Bioelectron*. Vol. 37, pp. 30-37, 2012. [Indexed in Scopus, Impact factor: 5.602]
- **Gabrani, R.**, Jain, R., Sharma, S., **Sarethy, I.P.**, **Dang, S.** and **Gupta, S.**, "Antiproliferative effect of Solanum nigrum on human leukemic cell lines". *Indian J Pharma Sci*. Vol. 74(5), pp. 451-453, 2012. [Indexed in Scopus, Impact factor: 0.3]
- Chhabra, A., Jaiswal, A., Malhotra, U., Kohli, S. and **Rani, V.** "Cell in situ Zymography: An in vitro cytotechnology for localization of enzyme activity in cell culture". *In Vitro Cell Dev Biol Anim*. Vol. 48(8), pp. 463-468, 2012. [Indexed in Scopus, Impact factor: 1.0]
- Vats, T. and **Priyadarshini.** "Effect of calcium phosphate renal calculi extract on nucleation mineral phase". *J proteins proteomics*. Vol. 3, pp. 47-48, 2012. [Impact factor: 0.15]
- **Jain, C.K.**, **Gupta, V.**, Gupta, A., Gupta, S., Wadhwa, G., **Sharma, S.K.** and **Sarethy, I.P.** "Streptomyces inforSys: A web-enabled information repository". *Bioinformation*. Vol. 8(25), pp. 1283-1285, 2012. [Impact factor: 0.5]
- Bhaskar, B, Malik, A., **Rawal, K.** "Detecting motifs and patterns at mobile genetic element insertion site". *Bioinformation*. Vol. 8(16), pp. 777-786, 2012. [Impact factor 1.1]
- Nassa, M., Anand, P., Jain, A., Chhabra, A., Jaiswal, A., Malhotra, U. and **Rani, V.** "Analysis of human collagen sequences". *Bioinformation*. Vol. 8, pp. 26-33, 2012. [Impact factor 1.1]

- **Rawal, K.**, Priya, A., Malik, A., Bahl, R. and Ramaswamy, R. "Distribution of MGEs and their insertion sites in the *Macaca mulatta* genome". *Mob Genet Elements*. Vol. 2(3), pp. 133-141, 2012.
- Bansal, P. and **Mani, S.** "Immunology of Diabetes Mellitus". *J Med Sci Res*. Vol. 3, pp. 1-2, 2012.
- Jaiswal, H.K., **Rawal, K.**, Jaganadham, J. and Agrawal, S. "Evaluation of inhibition activity of Tetrahydrolipstatin analogues on Diacylglycerol lipase alpha usingin –silicotechniques". *J Pharm Res*. Vol. 5(6), pp. 3473-3477, 2012.
- **Rawal, K.** "Viral load reduction after homeopathy treatment in an obese individual with chronic hepatitis B infection". *WYNO J Med Sci*. Vol. 1(1), pp. 1-6, 2012.
- Agrawal, S., **Rawal, K.**, Sahu, A., Mahajan, S., Garg, P. and Bahl, R. "To find gene distributions in PubMed abstracts using Perl software". *J Pharm Res*. Vol. 5(12), pp. 5453-5456, 2012.
- Bajpai, N., Chatterjee, A., **Dang, S.** and **Sharma, S.K.** "Clinical data management patrons: positions & skill requirements in the industry". *Clin Res plus*. Vol. 3(1), pp. 18-21, 2012.
- Gulati, S., Sharma, A., Rajasekharan, S., **Sharma, S.K., Jain C.K.** and **Gupta, S.**, "Polyethylene glycol 4000 (PE4) as potential antiviral agent against Chandipura Virus". *J Pharm Res*. Vol. 5(3), pp. 1605-1607, 2012.
- Dudha, N., Appaiahgari, M.B., Bharati K., Gupta, D., Gupta, Y., Kumar, K., **Gabrani, R., Sharma, S.K.**, Gupta, A., Chaudhary, V.K., Vrati, S. and **Gupta, S.** "Molecular cloning and characterization of Chikungunya virus genes from Indian isolate of 2006 outbreak". *J Pharm Res*. Vol. 5(7), pp. 3860-3863, 2012.
- Malhotra, U., Jaiswal, A., Chhabra, A., Atale, N. and **Rani, V.** "Computational structural and functional characterization of protein family: Key for the hidden mystery". *J Pharm Res*. Vol. 5(7), pp. 3643-3649, 2012.
- Sharma, S., Goswami, N., Gupta, N. and **Srivastava, S.** "Amino coated gold nanorods based amperometric glucose detection". *Inter J Adv Technol*. Vol. 3(3), pp.195-202, 2012.
- Sharma, S. and **Srivastava, S.** "Synthesis of branched gold nanostructures with improved biocompatibility". *Nanotrends*. Vol. 13(1), pp.40-47, 2012.
- Gulati, S., Sharma, A., Rajasekharan, S., **Sharma, S.K., Jain C.K.** and **Gupta, S.** "Polyethylene glycol 4000 (PE4) as potential antiviral agent against Chandipura Virus". *J Pharm Res*. Vol. 5(3), pp. 1605-1607, 2012.
- Nigam, D, **Rani, V.** and Singh, K. "Protective role of turmeric in manganese-induced oxidative alterations in rat brain". *J Pure Applied Sci Technol*. Vol. 2(2), pp. 5-11, 2012.

- **Gupta, S.**, Sahni, J.K., Ali, J., **Gabrani, R.** and **Dang, S.** “Development and characterization of green tea loaded microemulsion for vaginal infections”. *Adv Materials Lett.* Vol. 3(6), pp. 493-497, 2012. [Indexed in Scopus].

2011

- Chakraborty, M., Jain, S. and **Rani, V.** “Nanotechnology: emerging tool for diagnostics and therapeutics.” *Appl Biochem Biotechnol.* Vol.1 165(5-6), pp. 1178-1187, 2011. [Indexed in Scopus, Impact factor: 1.879]
- Guleria, A., Kiranmayi, M., Rajasekharan, S., Kumar, K., **Sharma, S.K.** and **Gupta, S.** “Reviewing host proteins of Rhabdoviridae: Possible leads for lesser studied viruses”. *J Biosci.* Vol. 36(5), pp.1-9, 2011. [Indexed in Scopus, Impact factor:1.9]
- **Rawal, K.** and Ramaswamy, R. “Genome wide analysis of mobile genetic elements insertion sites”. *Nucl. Acids Res.* Vol. 39(16), pp. 6864-6878, 2011. [Indexed in Scopus, Impact factor: 8.8]
- Kumar, K., Rana, J., Guleria, A., Gupta, A., Chaudhary, V.K. and **Gupta, S.** “Expression and characterization of Chandipura virus proteins”. *Res Biotechnol.* Vol. 2(6), pp. 27-36, 2011. [Indexed in Scopus]
- Ali, J., Gupta, S., **Dang, S.**, Baboota, S., Shadab, Md., Ali, A., Iqbal, B. and Sahni, J.K. “Recent advances and patents in solid dispersion technology and some related issues”. *Rec Pat Drug delivery Formulations.* Vol. 5(3), pp. 244-264, 2011. [Indexed in Scopus]
- Haque, S., Shadab, M., Fazil, M., Sahni, JK, Baboota, S., **Dang, S.** and Ali J. “Role of chitosan biomaterials in drug delivery systems: A patent perspective”. *Rec Pat Materials Sci.* Vol. 4(3), pp. 209-223, 2011. [Indexed in Scopus]
- Gupta, S., **Gabrani, R.**, Ali, J. and **Dang, S.** “Exploring Novel Approaches to Vaginal Drug Delivery”. *Rec Pat Drug delivery Formulations.* Vol. 5, pp. 82-94, 2011. [Indexed in Scopus]
- Shruti, K., Shrey, K. and **Rani, V.** “Micro RNAs: Tiny sequences with enormous potential”. *Biochem Biophys Res Commun.* Vol. 407(3), pp. 445-449, 2011. [Indexed in Scopus, Impact factor: 2.595]
- Jain, R., Sharma, A., **Gupta, S.**, **Sarethy, I.P.** and **Gabrani, R.** “Solanum nigrum: Current perspectives on therapeutic properties”. *Alter Med Rev.* Vol. 16, pp. 78-85, 2011. [Indexed in Scopus, Impact factor: 4.857]
- **Sarethy, I.P.**, Gulati, N., Bansal, A., **Gupta, V.**, Malhotra, K. and **Gabrani, R.** “Genetic structure of an endangered Cycas evolute using RAPD markers”. *Res J Biotech.* Vol. 6, pp. 50-55, 2011. [Indexed in Scopus].
- **Sarethy, I.P.**, Saxena, Y., Kapoor, A., Sharma, S., **Sharma, S.K.**, **Gupta, V.** and **Gupta, S.** “Alkaliphilic bacteria: applications in industrial biotechnology”. *J Industrial Microbiol Biotechnol.* Vol. 38(7), pp. 769-790, 2011. [Indexed in Scopus, Impact factor: 2.375]

- Suchit, M., Shrey, K., Deepika, D., Shruti, K. and **Rani, V.** "Air pollutants: The key stages in the pathway towards the development of cardiovascular disorders". *Env Toxicol Pharmacol.* Vol. 31, pp. 1-9, 2011. [Indexed in Scopus, Impact factor: 1.425]
- Ahuja, S., Kohli, S., **Krishnan, S.**, Dogra, D., Sharma, D. and **Rani, V.** "Curcumin: a potential therapeutic polyphenol prevents noradrenaline-induced hypertrophy in rat cardiac myocytes". *J Pharm Pharmacol.* Vol. 63(12), pp. 1604-1612, 2011. [Indexed in SCOPUS, Impact factor : 1.918]
- Banerjee, K., Gupta, U., Gupta, S., Wadhwa, G., **Gabrani, R., Sharma, S.K.** and **Jain, C.K.** "Molecular docking of glucosamine-6-phosphate synthase in *Rhizopus oryzae*". *Bioinformation.* Vol. 7(6), pp. 285-290, 2011. [Impact factor: 1.15]
- Banerjee, K., Gupta, U., **Gupta, S., Sharma, S.K.** and **Jain, C.K.** "Functional Coevolutionary study of glucosamine-6-phosphate synthase in mycoses causing fungi", *Bioinformation.* Vol. 7(1), pp. 10-13, 2011. [Impact factor: 1.15]
- Gupta, U., Banerjee, K., **Gabrani, R., Gupta, S., Sharma, S.K.** and **Jain, C.K.** "Variability analyses of functional domains within glucosamine-6-phosphate synthase of mycoses-causing fungi". *Bioinformation.* Vol. 6(5), pp. 196-199, 2011. [Impact factor: 1.15]
- Jaiswal, A., Chhabra, A., Malhotra U., Kohli, S. and **Rani, V.** "Comparative analysis of human matrix metalloproteinases: emerging therapeutic targets in diseases". *Bioinformation.* Vol. 6(1), pp. 23-30, 2011. [Impact factor: 1.19]
- Kumar, P.M., Saluja, S., Pant, M., Rachana. and **Jain, C.K.** "Docking studies to investigate interactions of vasicine molecule with oxidative enzymes". *J Pharm Res.* Vol. 4(11), pp. 3907-3909, 2011. [Impact factor 2.36]
- Dogra, D., Ahuja, S., **Krishnan, S.**, Kohli S., Anand, R. and **Rani, V.** "Phytochemical screening and antioxidative activity of aqueous extract of Indian *Camellia sinensis*", *J Pharm Res.* Vol. 4(6), pp.1833-1835. 2011. [Impact factor 2.36]
- Dogra, D., Ahuja, S., **Krishnan, S.**, Kohli, S. and **Rani, V.** "In vitro cardioprotective effect of indian *Camellia sinensis* extract against hydrogen peroxide induced hypertrophy". *J Pharm Res.* Vol. 4(6), pp.1877-1879, 2011. [Impact factor 2.36].
- Jaiswal, A., Chhabra, A., Malhotra, U., Kohli, S. and **Rani, V.** "Comparative analysis of human matrix metalloproteinases: Emerging therapeutic targets in diseases". *Bioinformation.* Vol. 6(1), pp. 23-30, 2011.
- Dogra, D., Ahuja, S., **Krishnan, S.**, Kohli, S. and **Rani, V.** "In vitro cardioprotective effect of evolu *Camellia sinensis* extract against hydrogen peroxide induced hypertrophy". *J Pharm Res.* Vol. 4(6), pp. 1877-1879, 2011.
- Atale, N., Jaiswal, A., Chhabra, A., Malhotra, U., Kohli, S., **Mohanty, S.** and **Rani, V.** "Phytochemical and antioxidant screening of *Syzygium cumini* seed extracts: A comparative study," *J Pharm Res.* Vol. 4(12), pp. 4530-4532, 2011. [Impact factor 2.36]

- Dogra, D., Ahuja, S., **Krishnan, S.**, Kohli, S., Ramteke, A., Atale, N. and **Rani, V.** “Phytochemical screening and antioxidative activity of aqueous extract of Indian *Camellia sinensis*,” J Pharm Res. Vol. 4(6), pp.1833-1835, 2011. [Impact factor 2.36]
- Chhabra, A., Jaiswal, A., Malhotra, U. and **Rani V.** “Effect of curcumin on matrix metalloproteinases screened in norepinephrine induced cardiac hypertrophy”. J Comput Intel Bioinformat. Vol. 4(1), pp 1-10, 2011.
- **Mohanty, S.**, Rawal, S, Singh, P. and Gupta, A. “Curcumin longa and *Emblica officinalis* increase lifespan in *Drosophila melanogaster*”. Dros Inf Serv. Vol. 94, pp 122-125, 2011.

2010

- Neha, S., **Rani, V.** and Goswami, S.K. “Isolation and characterization of developmentally regulated novel target site from embryonic chick heart”. African J Biotechnol. Vol. 9(17), pp. 3699-3713, 2010. [Indexed in Scopus, Impact factor: 0.6]
- Mishra, A.K., **Jain, C.K.**, Agarwal, A., Jain, S., Jain, K.S., Dudha, N., Mehta, K., Sharma, S.K. and Gupta, S., CHIKVPRO – a protein sequence annotation database for Chikungunya Virus. Bioinformation. Vol. 5(1): 4-6, 2010. [Impact factor: 0.5]
- Richa, G., Neha, S., Purbasa, P., Ishita, S., Rahul, S., **Rawal, K.** and **Rani, V.**, “High AU content: a signature of upregulated miRNA in cardiac diseases”. Bioinformation. Vol. 5(2), pp. 132-135, 2010.

2009

- Kohli, S., Ahuja, S., Malhotra, N. and **Rani, V.** “RNA interference: Emerging diagnostics and therapeutics tool”. Biochem Biophys Res Commun. Vol. 38, pp. 273–277, 2009. [Indexed in Scopus, Impact factor: 2.648]
- Neha, S. and **Rani, V.** “The genetic blue print of heart development”. Res Jof Biotechnol. Vol. 4(3), pp. 68-71, 2009. [Indexed in Scopus]

2008

- Schug, M., Baines, J., Killon-Atwood, A., **Mohanty, S.**, Das, A., Smith, S., Shiva, Z., McEvey, S. and Stephan, W. “Evolution of mating isolation between populations of *Drosophila ananassae*”. Mol Ecol. Vol. 17(11), pp. 2706-2721, 2008. [Indexed in Scopus, Impact factor: 5.84]
- Oswal, N., Sahni, **N.S.**, **Bhattacharya, A.**, Komath, S.S. and Muthuswami, R. “Unique motifs identify PIG-A proteins from glycosyltransferases of the GT4 family”. BMC Evol Biol. Vol. 8(1), pp. 1-14, 2008. [Indexed in Scopus]

2007

- **Jain, C. K.** and Vishwanathan, N. "Parkinson's disease: A perilous magic of nature". Scientific Res Essay. Vol. 2(7), pp 251-255, 2007.
- **Mohanty, S.** and Pandey, D. "Amplification of orthologous DNA fragments in three Drosophila species endemic to India". Dros Inf Serv. Vol. 90, pp. 113-114, 2007.
- **Mohanty, S.** and Pandey, D. "Multilocus nuclear DNA markers for population genetic study in Drosophila malerkotliana". Dros Inf Serv. Vol. 90, pp. 115-116, 2007.

BOOK

Rani V., Singh U.C. (Eds.), **Functional Food and Human Health**, Springer, 2018, ISBN 978-981-13-1123-9

Rani V., Singh U.C. (Eds.), Free Radicals in Human Health and Disease, Springer, 2015, ISBN 978-81-322-2035-0

BOOK CHAPTERS:

- G. Gaur, U. L. Raj, S. **Dang, S. Gupta, R. Gabrani** "Plant-derived Drug Molecules as Antibacterial Agents" In "Functional Food and Human Health" Ed. V. Rani and U.C.S. Yadav; Springer, 2018.
- S. Srivastava, G. Jain, **S. Dang, S. Gupta, R. Gabrani**, "Phytochemicals Targeting ER Stress to Inhibit Cancer Cell Proliferation" In "Anticancer Plants: Natural Products and Biotechnological Implements" Editors: M. S. Akhtar and M. K. Swamy Vol. 2, 2018.
- **R. Gabrani**, G. Sharma, **S. Dang, S. Gupta** "Interplay Among Bacterial Resistance, Biofilm Formation and Oxidative Stress for Nosocomial Infections" In "Free Radicals in Human Health & Diseases" Ed. V. Rani and U.C.S. Yadav; Springer, 2015, chapter 23, pp. 369-379.
- **S. Dang, S. Gupta**, R. Bansal, J. Ali and **R. Gabrani** "Nano encapsulation of Green Tea Catechins – key to preserve its anti-oxidative potential" In "Free Radicals in Human Health & Diseases" Springer, 2015, chapter 25, pp. 397-415.
- U. L. Raj, G. Sharma, **S. Dang, S. Gupta, R. Gabrani** "Impact of Dietary Supplements on Skin Aging" In "Textbook of Aging Skin" 2nd Ed. M.A. Farage, K.W. Miller, H.I. Maibach; Springer, ISBN: 978-3-642-27814-3, 2017.

- Saxena, S., Rustagi, Y., Jain, A., Dubey, S. and **Rani, V***, microRNAs-Mediated MMPs Regulation: Novel Mechanism for Cardiovascular Diseases. In Proteases in Human Diseases (pp. 497-513). June 2017 Springer, Singapore.
- Jain A and **Rani V**. Exploring the Nutrition and Health Benefits of Functional Foods. IGI Global, 2016. Food and Cardiac Health., Hossain Uddin Shekhar, Zakir Hossain Howlader, Yearulkabir (eds.).
- Rustagi, Y., Jain, A., Saxena, S. and **Rani, V.**, Natural Polyphenols as Prospective Inhibitors for MMPs. Remodeling in Human Diseases. In Proteases in Human Diseases (pp. 263-283). June 2017.Springer, Singapore.
- Avani Ahuja, Neha Singh, Prashant Gupta, Shivani Mishra, **Vibha Rani**, Influence of Exogenous Factors on Skin Aging”, Book: Textbook of Aging Skin, Chapter 1, pp. 1- 15, February 2016.
- **Vibha Rani**, “Skin aging, reactive oxygen species and its prevention” in book, Springer Book: Oxygen Species in Biology and Human Health, chapter 33 pp.441- 449, June 2016.
- **V Rani**, S Asthana, M Vadhera, UCS Yadav, N Atale, Tools and Techniques to Measure Oxidative Stress, Free Radicals in Human Health and Disease, 43-56,2015
- **V Rani**, A Jain, Oxidative Stress and Its Biomarkers in Cardiovascular Diseases: An Overview, Free Radicals in Human Health and Disease, 131-141, 2015
- SS Vundru, N Prasad, R Patel, **V Rani**, UCS Yadav, Gene–Environment Interaction in Oxidative Stress-Induced Pathologies, Free Radicals in Human Health and Disease, 75-90, 2015
- **V Rani**, K Gupta, ROS in Carcinogenesis and Anticancerous Drug-Induced Toxicity, Free Radicals in Human Health and Disease, 209-225, 2015
- **V Rani**, S Mishra, T Yadav, UCS Yadav, S Kohli, Hydrogen Peroxide Sensing and Signaling, Free Radicals in Human Health and Disease, 105-116, 2015
- N Dholia, P Ramteke, JF Varghese, **V Rani**, UCS Yadav, Oxidative Stress- Induced Molecular and Genetic Mechanisms in Human Health and Diseases, Free Radicals in Human Health and Disease, 91-103, 2015
- S. Dhaliwal, P. Nag, R. Rajput, S. Kumar, **M. Singh**, Escitalopram loaded nanoparticles; preparation and effect of formulation variables on encapsulation efficiency, Nanotechnology: Novel Perspectives and Prospects”,being published by M/S McGraw Hill, USA.
- **Sudha Srivastava**, Kushagr Punyani and Shuchi Arora, Chapter 3 : “The Noxious Nanoparticles” inFree Radicals in Human Health & Diseases Rani, V and Yadav, U. C. (Eds.), Springer Publications, pp 31-41, 2015

- M. Singh, S. Malik and **G. Mathur**, “Comparative analysis of Antimicrobial and antioxidant potential of Ginkgo biloba (EGb 761) microemulsions and Ginkgo biloba extract (EGb 761)” In “Industrial, medical and environmental applications of microorganisms: current status and trends” Editor: A. Méndez-Vilas. Wageningen Academic Publishers. ISBN Print version: 978-90-8686-243-6, ISBN E-book: 978-90-8686-795-0, pg 517 – 520, 2014.
- **S. Gupta, V. Gupta**, S. Aggarwal and P. Diwan, E- Lesson- “General Account of Bacterial Cell Organization” for Institute of LifeLong Learning, University of Delhi, Virtual learning Environment 2014.
- S. Rajasekharan and **S. Gupta**, “Bioinformatics based approaches to study virus-host interactions during Chikungunya virus infection” in Chikungunya virus in *Methods in Molecular Biology*, published by Springer (Accepted) 2015.
- N. Dudha and **S. Gupta**, “Viral-Host protein interaction studies using Yeast two-hybrid screening method” in Chikungunya virus in *Methods in Molecular Biology*, published by Springer (Accepted) 2015.
- **Mani, S.** Production of Reactive oxygen species and its implication in human diseases. Free radicals in human health and disease. Springer, 2015, ISBN 978-81-322-2035-0, 2015.
- **Reema Gabrani**. “Cancer biology and RNAi” in *Modern Biotechnology and its applications Part 2*. Kambaska Behera, New India Publication Agency, N. Delhi, India. pp. 513-542. 2013.
- Agrawal, A., **Dang, S.** and **Gabrani, R.** “Recent Advances in Anti-Telomerase Cancer Therapy” In “Topics in Anti-Cancer Research” Volume 3, Ed Atta-ur-Rahman and K. Zaman; Bentham Science Publishers, chapter 16, pp. 581-631. ISBN: 978-1-60805-909-6, 2014.
- Aastha Chhabra, Shrey Kohli, **Vibha Rani**, “MMPs in Cardiovascular Diseases: Emerging Pharmacological Targets” in *Role of Proteases in cellular dysfunction*, Springer New York, pp. 407-426, 2014.
- **Vibha Rani**, Mainak Chakraborty, Arushi Jain, “Nanobiotechnology: a promising approach for the pathogenic sensing” in *Recent Trends in Microbial Biotechnology*, Lambert Academic Publishing House pp. 17-36, 2010.
- **Rani, V., Indira, P.S.,** Diksha, G., Karthikeya, T., Mayank, C. and Neha, S. “Defense signaling pathways in Arabidopsis thaliana: a model host plant to study plant pathogen interactions”- ‘Advancement of Biotechnology’, International Book Distributing Co., Lucknow, India, 2011.
- **Gupta, V.** and **Gupta, S.** Diversity of Microbial World: General Microbiology (chapter in e-book), http://nsdl.niscair.res.in/bitstream/123456789/137/2/Diversity_MicrobialWorld.doc Book is part of Council of Scientific and Industrial Research (CSIR), Government of India, initiative as core book for the first year undergraduate students spread all over the country, 2008.
- Patent filed: Sudha Srivastava and Shikha Sharma (2010) “Novel process to enhance thermal stability of enzyme nanoparticles” Indian Patent Application No 2782/DEL/2010. Filing date: 23-11-2010

WGS SUBMITTED TO GENOME BANK: 03

1. Four Whole Genome sequences of Indian *Wolbachia* strains, submitted to **Genome (NCBI), For Bioproject No. paper ref:** DOI:[10.1007/s00438-017-1402-5](https://doi.org/10.1007/s00438-017-1402-5), 2018
2. Four Whole genome sequences (*Drosophila biarmipes*, *Drosophila bipectinata*, *Drosophila takahashii* and *Drosophila nasuta*) submitted to **Genome (NCBI), For Bioproject No. paper ref:** DOI: [10.1007/s00438-017-1339-8](https://doi.org/10.1007/s00438-017-1339-8), 2017
3. Whole genome sequence of *Zaprionus indianus*, submitted to **Genome (NCBI), For Bioproject No. paper ref:** *Molecular Ecology Resources*, DOI: 10.1111/1755-0998.12582, 2016

NCBI/ GEO SUBMISSIONS: TOTAL 06

MiRNA profiling dataset from chick heart libraries (1 to 6)

1. Yashika Rustagi, **Vibha Rani**. (2015), NCBI-GEO, Accession No. GSE69663, SRA-ID: GSM1705503 Gallus gallus_CHL1_JIIT4DS1_HH24. (<http://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE69663>).
2. Yashika Rustagi, **Vibha Rani**. (2015), NCBI-GEO, Accession No. GSE69663, SRA-ID: GSM1705504 Gallus gallus_CHL2_JIIT4DS1_HH29. (<http://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE69663>).
3. Yashika Rustagi, **Vibha Rani**. (2015), Accession No. GSE69663, SRA-ID: GSM1705505 Gallus gallus_CHL3_JIIT4DS1_HH34. (<http://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE69663>).
4. Yashika Rustagi, **Vibha Rani**. (2015), Accession No. GSE69663, SRA-ID: GSM1705506 Gallus gallus_CHL4_JIIT4DS1_HH36. (<http://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE69663>).
5. Yashika Rustagi, **Vibha Rani**. (2015), Accession No. GSE69663, SRA-ID: GSM1705507 Gallus gallus_CHL5_JIIT4DS1_HH38. (<http://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE69663>).

6. Yashika Rustagi, **Vibha Rani**. (2015), Accession No. GSE69663, SRA-ID: GSM1705508 Gallus gallus_CHL6_JIIT4DS1_HH40. (<http://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE69663>).

GENE BANK SUBMISSIONS

- Sharma G, Singh NP, Tiwari A, Gupta S and **Gabrani R** *Lactococcus lactis* 16S ribosomal RNA gene, partial sequence. Genbank Accession No. KP671842, June 2015
- Sharma G, Singh NP, Tiwari A, Gupta S and **Gabrani R** *Pediococcus acidolacti* 16S ribosomal RNA gene, partial sequence. Genbank Accession No. KP671843, June 2015
- Sharma, G., Gupta, S. and **Gabrani, R.** (May 2014) Genbank Accession No. KJ564301 Bacillus subtilis strain GAS101 16S ribosomal RNA gene, partial sequence.
- “Full-length cloned sequence of the non-structural protein 1 (nsP1) gene of Chikungunya virus, isolate IND-06-Guj, of 2006 outbreak.” Genbank Accession No. JF272473, 2011.
- “Full-length cloned sequence of the non-structural protein 2 (nsP2) gene of Chikungunya virus, isolate IND-06-Guj, of 2006 outbreak.” Genbank Accession No. JF272474, 2011.
- “Full-length cloned sequence of the non-structural protein 3 (nsP3) gene of Chikungunya virus, isolate IND-06-Guj, of 2006 outbreak.” Genbank Accession No. JF272475, 2011.
- “Full-length cloned sequence of the non-structural protein 4 (nsP4) gene of Chikungunya virus, isolate IND-06-Guj, of 2006 outbreak.” Genbank Accession No. JF272476, 2011.
- “Full-length cloned sequence of the capsid protein gene of Chikungunya virus, isolate IND-06-Guj, of 2006 outbreak.” Genbank Accession No. JF272477, 2011.
- “Full-length cloned sequence of the Envelope protein 3 (E3) gene of Chikungunya virus, isolate IND-06-Guj, of 2006 outbreak.” Genbank Accession No. JF272478, 2011.
- “Full-length cloned sequence of the Envelope protein 2 (E2) gene of Chikungunya virus, isolate IND-06-Guj, of 2006 outbreak.” Genbank Accession No. JF272479, 2011.

- “Full-length cloned sequence of the Envelope protein 1 (E1) gene of Chikungunya virus, isolate IND-06-Guj, of 2006 outbreak.” Genbank Accession No. JF272480, 2011.
- “Full-length cloned sequence of the 6K gene of Chikungunya virus, isolate IND-06-Guj, of 2006 outbreak.” Genbank Accession No. JF272481, 2011.
- V. Rani. Cardiac 1: 72 hours embryonic chick cardiac cDNA Expression library, EST sequence, March 17, 2010; Genbank Accession No. GW691607
- V. Rani, D. Gupta, A. Gupta. Cardiac 2: 72 hours embryonic chick cardiac cDNA Expression library, EST sequence, May 3, 2010; Genbank Accession No. GW868518
- V. Rani, D. Gupta, A. Gupta. Cardiac 3: 72 hours embryonic chick cardiac cDNA Expression library, EST sequence, May 11, 2010, Genbank Accession No. GW883522

6. DETAILS OF COLLABORATIONS, IF ANY.

S. No.	Name of the collaborator	Organization
1.	Prof. Vijay K. Chaudhary	Professor and Head, Department of Biochemistry, University of Delhi South Campus (UDSC)
2.	Prof. Sudhanshu Vrati	Dean, Translational Health Science & Technology Institute, (THSTI)
3.	Dr. Dinesh Gupta	Research Scientist, International Centre for Genetic Engineering and Biotechnology (ICGEB)
4.	Dr. Amita Gupta	Associate Professor, Department of Microbiology, Univ. of Delhi, South Campus
5.	Dr. Manish Sharma	Research Scientist, Defence Institute of Physiology and Allied Sciences (DIPAS), Delhi
6.	Dr Shyamal K Goswami	Professor, School of Life Sciences, JNU
7.	Dr. Punit Kaur	Professor and Head, Department of Biophysics, All India Institute of Medical Sciences, Delhi
8.	Prof Malcolm Schug	Associate Professor and Director of Undergraduate Studies, Univ. of North Carolina, Greensboro
9.	Dr. Aparup Das	Scientist E, National Institute of Malaria Research, ICMR, New Delhi
10.	Prof. K. K. Biswas/ Yamuna Prasad	Department of Computer Science and Engineering, IIT Delhi
11.	Dr. Gulshan Wadhwa	Joint Director, Dept. of Biotechnology, Govt. of India
12.	Dr. R.T. Narendhirakannan	Assistant Professor (SG), Department of Biotechnology, School of Biotechnology and Health Sciences, Karunya University, Coimbatore

13.	Dr. Umesh C. S. Yadav	Associate Professor and Coordinator, School of Life Sciences, Central University of Gujarat
14.	Dr Javed Ali	Senior Assistant Professor, Department of Pharmaceutics, Jamia Hamdard, New Delhi.
15.	Prof. Dr. John Baines	Professor, Max Plank Institute for Evolutionary Biology, Germany
16.	Dr. S. P. Singh	Associate Prof., Dept. of Biochemistry, Banaras Hindu University (BHU), Varanasi
17.	Dr Amit Tyagi	Scientist D, INMAS, DELHI
18.	O'Kennedy R	Biomedical Diagnostics Institute (BDI), Dublin City University, Dublin 9, Ireland; School of Biotechnology, Dublin City University, Dublin 9, Ireland.

7. Research area, brief on Research activities, abstract of research work

Sanjay Gupta, Ph.D.

Research area : Viral diseases and Functional Genomics

Brief on Research activities:

Newly emerged and re-emerged diseases in the recent past caused by SARS, Chikungunya (CHIKV), Chandipura (CHPV), Bird flu and other viruses have amply highlighted the vulnerability of developing and developed nations.. Research is being carried out on emerging/re-emerging pathogens specifically CHPV, endemic to India with 70% mortality among children and CHIKV with its annual large scale outbreaks in the country since 2006 when it infected ~1.6 million individuals. The on-going research objectives are to understand the molecular and cell biology of pathogen-host-vector interactions in these diseases; study the pathogen specific

remodeling processes of the host/vector cell; identify interactions which could be target for therapeutics and identify peptide based inhibitors.

Vibha Gupta, Ph.D.

Research area : Structural Biology

Brief on Research activities:

In view of the rapid pace with which multidrug resistant strains of almost all group of pathogens are emerging, the need for new antibacterial compounds cannot be overemphasized. Research efforts have been initiated for early-stage rational drug discovery for a novel antimicrobial agent(s). Determination of X-ray crystal structure of a potential drug target from human pathogens responsible for infecting respiratory and/or gastrointestinal tract is on-going. The availability of the 3D – structural information of a drug target from many pathogenic organisms will enable the possibility of rational structure-based design and development of both a broad-spectrum and conversely, a pathogen-specific drug molecule.

Sudha Srivastava, Ph.D.

Research area : Diagnostic devices – Nanotechnology; Biosensors

Brief on Research activities:

The increasing demand for early diagnosis, sensitive and easy detection of the most threatening disease at curable state is the major driving force behind development of novel approaches for disease diagnostic tool. Nanoparticles are exploited for development of biosensors with improved stability, sensitivity and response time. A nanoparticle based glucose biosensor has been developed and investigations are ongoing for thyroid biosensor as well as immunosensor for cancer diagnosis as point of care device development.

Vibha Rani, Ph.D.

Research area : Medical Biotechnology

Brief on Research activities:

Heart development is a highly conserved process across all vertebrate organisms. MicroRNAs (miRNAs), the non-coding RNAs are researched extensively due to their newly found role as regulators of gene expression in developmental processes. Emerging evidences suggest that specific spatio-temporal miRNA expression is required for proper embryonic developmental processes such as cardiogenesis, myogenesis, hematopoiesis and neurogenesis. These small RNAs are the critical regulator of differential gene expression. When, how and where they are expressed during the various stages of heart development is the objective of ongoing research that will increase understanding of gene regulation during vertebrate heart development and diseases.

Reema Gabrani, Ph.D.

Research area : Protein Engineering

Brief on Research activities:

Current research interests include exploring the anti-microbial and anti-proliferative aspects of plant active compounds & antimicrobial peptides and their nano-encapsulated forms to understand the scientific basis of their activity which could lead to the development of unique drugs. Also part of studies on protein based interactions of Chandipura and Chikungunya virus with viral and host factors to understand the pathogenesis and disease progression. Notably such work can lead to the generation of novel therapeutic strategies.

Sujata Mohanty, Ph.D.

Research area : Molecular Genetics and Genomics

Brief on Research activities:

Drosophila has clearly evolved as a model organism for a wide array of genetic studies. With recent development in genomic applications in biomedical and agricultural research, initial information also has come from studies with *Drosophila* model. The comparative genomics of many sequenced genomes was quite surprising; many of the genes identified in *D. melanogaster* were found to be conserved across other organisms including human. Presently, the whole genome sequence of 12 different *Drosophila* species is

publicly available in the databases, providing baseline to understand how genomes have evolved. India is rich in biological diversity with many flora and fauna present in many eco-climatic zones. Inferring genetic inter-relationship among closely related species is not only important for academic point of view but also to understand how species diversity has been accompanied by small changes at the nucleotide level. Since *Drosophila* has shown ways in understanding genetic and biology of many organisms including human, studying the evolution of insecticide resistant, behaviour genes and cold adapted genes, effect of mutagenesis and understanding aging process is the focus of present research work which may well be utilized in other organisms of agriculture (insect pest) and health concern.

Shweta Dang, M. Pharm, Ph.D.

Research area : Novel Drug Delivery systems

Brief on Research activities:

Polymeric Nanoparticles (chitosan, PLGA) containing encapsulated, dispersed, absorbed drugs are being investigated to improve the delivery and bioavailability of some anti epileptic drugs, anti alzheimer's drugs and for some other CNS related disorders. Nanoemulsions encapsulating some natural antimicrobial compounds (catechins and flavanoids) are being investigated for enhanced efficacy and bioavailability. These nano carriers help improve the stability of hydrophobic drugs, rendering them suitable for administration, improving biodistribution and pharmacokinetics, resulting in improved efficacy, reduction in adverse effects because of less peripheral circulation and decreasing toxicity by using biocompatible and biodegradable nanomaterials.

Chakresh Jain, M.Sc., MCA, ALCCS (eqvt. M. Tech-CS), Ph.D.

Research area : Bioinformatics

Brief on Research activities:

Research group focuses on the development of pathogenic microbial network specially *Bacillus anthracis ames* and *Aspergillus fumigates Af293* and identification of potential drug target using computational methods such as machine learning and phylogenetic profiling and tools. Work is being carried out for new algorithms and pipelines for computational si/miRNA designing, novel antimicrobial peptide identification and database creation on microbial pathogens. Further *in-silico* target-ligand interactions and

simulation studies are also conducted for the investigation of neuroprotective potentials of medicinal plant compounds from selected medicinal plants.

Kamal Rawal, Ph.D.

Research area : Bioinformatics, Network Sciences, Clinical Research

Brief on Research activities:

For the past 10 years, we have been working to develop computational systems, databases and machine learning programs for retrotransposons insertions particularly in the area of diseases. To begin with, we were the first group to find the distribution of LINEs and SINEs in an *Entamoeba histolytica* genome (human pathogen of a disease called amebiasis). During the course of our research, we built suite of software tools including machine learning systems based upon support vector machines. These systems were applied to over 50 genomes to identify set of statistically important signals flanking the insertion sites in the various genomes. We also discovered widespread presence of MGEs in intronic regions of several hundred human genes and found typical patterns at the sites of their insertions. These patterns were absent in case of disruption of MGEs in genes implicated in diseases such as Duchene Myotrophy disease and several types of cancers (Rawal and Ramaswamy 2011, NAR).

In a recent work in our lab (Jaisri et al 2016, Plos One), we developed a new approach of combining data from heterogeneous databases including literature, structure and microarrays to construct disease networks and attempt to explain therapeutics of a drug molecule in context of networks. The system also shows new approach to identify drug targets using diseases based pathways.

Shalini Mani, Ph.D.

Research area : Medical Biotechnology

Brief on Research activities:

Mitochondria, being a powerhouse of the cellular system are a most important organelle. Hence, any perturbation in mitochondrial metabolism may affect several organs and hence cause several diseases/disorders. In the last few decades only, mitochondrial defects are found to be associated with a large number of metabolic and neurological disorders. Based on it, the current research interest is to explore the mechanism of pathogenic role of mitochondria in common metabolic/lifestyle diseases like cancer and diabetes.

Research is also being conducted to explore the possible mechanism behind the association between vitamin D deficiency and pathogenesis of type 2 diabetes.

Priyadarshini, Ph.D.

Research area : Medical Biotechnology

Brief on Research activities:

Kidney stone formation is a complex process involving multiple factors. It invariably comprises a combination of inorganic crystals and organic macromolecules consisting principally of proteins, lipids and glycominaglycans. It has been assumed that inhibitors of urolithiasis have protective effect while stimulator helps in stone formation. The inhibition is generally understood to arise mainly from the non-dialyzable molecules of urine, particularly acidic glycoproteins and glycosaminoglycans. Some inhibitor as well as stimulator molecules have been identified, including Tamm–Horsfall protein, uropontin, calgranulin, bikunin, and prothrombin F1 fragment. Interaction of biomolecules present in kidney stone is being investigated so as to solve the mystery of stone formation.

13. Manisha Singh, M. P. T (Neurology), CNDT, PhD (Ongoing)

Research area: Novel Drug Delivery systems

Brief on Research activities:

The main difficulty to treat CNS disorders is to deliver the drug at site as, the complex anatomy of the brain and “blood brain barrier” put a restriction to most of the molecule to cross and reach inside the brain. Nasal route is chosen for drug delivery as it can cross the olfactory pathway by one or a combination of pathways. We aim to develop a drug delivery system which shows site specificity in case

of Central Nervous System Disorders (CNS Disorders) like Alzheimer's disease, Epilepsy, Psychosomatic disorders etc., which can reduce the dose, adverse effects and can enhance rate and extent of drug transport. Polymeric nanoparticles by different methods (ionic gelation, Coacervation etc.) were explored to encapsulate various plant based medicinal (Gingko biloba, Catechin hydrate, etc.) and drugs (Gabapentin, Escitalopram, hydrochlorothiazide) compounds. Further, their characterizations and in vitro toxicity and safety evaluation are been done on cellines (NB41A3, RPMI2650, Vero etc). These nanoformulation help in increasing the efficacy, bioavailability and stability of these compound and make them more therapeutically potential.