Mentor – Mentee Information (Seminar preparations)

Mentors : DPS – Prof. Debi P. Sarkar, **AN –** Prof. Alo Nag, **SK –** Prof. Suman Kundu, **AG –** Prof. Amita Gupta, **GK –** Dr. Garima Khare, **DD –** Dr. Dau Dayal

S.No.	Topic	Student Name	Mentor's Name
M.Sc. Part II, Semester III (2018)			
1.	FOXM1 and it's potential as an anti-cancer target	Jyotsna Verma	AN
2.	ADP ribosylation factor like proteins (ARLs) as emerging therapeutic targets: the current status	Neelam	SK
3.	Artificial Oxygen Carriers for Blood Transfusions: Recombinant Hemoglobin Based Substitutes and Stem Cell Based Solutions	Nidhi Mittal	SK
4.	Cul4A and it's modulation by viruses	Parul Garg	AN
5.	The role of *M.tb* lipoprotein A in host-pathogen interaction	Rahul Kumar Verma	GK
6.	Toxin-antitoxin loci – Understanding the higBA locus	Sakshi Gautam	AG
7.	Importance of NagA proteins in the bacterial growth and cell wall	Shruti Chopra	GK
8.	Next generation sequencing for *Mycobacterium tuberculosis* diagnostics	Simra	AG
9.	Protein Based Diagnostics for *Mycobacterium tuberculosis*	Srishti Sharma	AG
10.	Molecular detection of *Mycobacterium tuberculosis*	Sushma Kumari	AG
11.	Application of Next Generation Sequencing in Antibody discovery	Tushar	AG
M.Sc. Part I, Semester I (2019)			
1.	Importance of Vitamin D in disease susceptibility	Anshi Srivastava	GK
2.	Emerging roles of noncoding RNAs in eukaryotes	Bhawna Verma	DPS
3.	Mechanism of drug resistance in bacteria	Elbin Aloshy	AG
4.	Mechanism of cell surface glycoconjugate alteration in mammalian cells: Implication in cancer detection and therapy	Jaismeen	DPS
5.	The Therapeutic Role of Monoclonal Antibodies	Maneshwar Dixit	AG

6.	Cancer chemotherapy resistance – mechanisms and strategies to overcome drug resistance	Nibedita Roy	GK
7.	Cellular small GTPase in regulating cargo delivery to Lysosomes: Implications in Lysosomal storage disorder	Nikita	DPS
8.	Antibody-based diagnostics	Priyanka Gusain	AG
9.	G-Protein coupled receptors: History, Current, Status, Application of Future Perspective	Shivani Satapathy	SK
10.	Role of epigenetic modifications in manifestation of various diseases	Shreyashi Basu	DPS
11.	Stem cells and regenerative medicine	Shweta Rahar	GK
M.Sc. Part II, Semester III (2019)			
1.	Serine biosynthesis pathway as an important target for the identification of novel mycobacterial inhibitors	Diksha Rani	GK
2.	The multifaceted co-activator protein, human ADA3 and its connection with cancer	Iram Rais	AN
3.	Artificial oxygen carriers – Preclinical and clinical validation	Kajal Yadav	SK
4.	Host and pathogen bio-markers for the detection of TB infection	Mansi Jain	AG
5.	Toxin antitoxin loci in *M. tuberculosis*-role in pathogenicity and survival	Meenakshi Tyagi	AG
6.	Genomic approaches for detection of drug resistance in *M. tuberculosis*	Pooja Dudeja	AG
7.	FoxM1: A key player in tumorigenesis and its therapy	Pranshu Kothari	AN
8.	Chandipura virus : An emerging tropical pathogen in Indian subcontinent : infection, pathogenesis and therapeutics	Sakshi Nimesh	DPS
9.	Understanding the diverse functions of villin and its connection with human diseases	Simran Motwani	DPS
M.Sc. Part II, Semester III (2020)			
1.	Cell cycle regulators as oncogenic drivers	Anshi Srivastava	AN
2.	RNA as a tool in the diagnosis and treatment of Covid-19	Bhawna Verma	AG
3.	Determination of inhibitors for DapB and SerA enzymes of *Mycobacterium tuberculosis*	Elbin Aloshy	GK
4.	Plasmodium proteomics : an approach for dissecting mechanism of action of anti-malarial drugs	Jaismeen	AN
5.	Stem cells based alternatives to artificial oxygen carriers	Maneshwar Dixit	SK

6.	Role of Rv3842c and Rv1031c in the acidic responses and survival of *Mycobacterium tuberculosis*	Nibedita Roy	GK
7.	Antibody and RT-PCR detection assays for Covid 19 diagnosis	Nikita	AG
8.	Alternate splicing and regulation of viral gene expressions: prospective therapeutic targets to prevent viral diseases	Priyanka Gusain	DPS
9.	Deubiquitinases as therapeutic target for Malaria treatment	Shivani Satapathy	AN
10.	Antigen detection assays for Covid 19 diagnosis	Shreyashi Basu	AG
11.	Molecular basis of hemoglobin oxygen affinity at high altitude	Shweta Rahar	SK
M.Sc. Biochemistry (Semester I) – 2021			
1.	Role of phospholipid asymmetry of human erythrocytes in infection and survival of malaria parasites	Vanshika Yadav	DPS
2.	CAR-T Cell Therapy : The Current Status	Divya Dhiman	AG
3.	Vaccine strategies for COVID-19	Haripriya Santosh	AG
4.	Vaccine development: challenges and prospects	A. Akhil Kumar	AG
5.	MicroRNAs and epigenetic control	Ritika Bassi	DD
6.	Current progress and prospects of gene therapy in curing some inborn errors of metabolism	Neha Yadav	DPS
7.	Lilliputian proteins, the new universe of miniproteins, brings to fore new functions and applications	Arti Rathi	SK
8.	Role of Telomeres and Telomerase in Aging and Cancer	Juhi Singh	AN
9.	Therapeutic antibodies- varied targets and mechanisms of action in different disease conditions	Mansi Tanwar	AG
10.	CRISPR-Cas technology as a new genetic tool	Preeti Saini	DD
11.	Recombination, mutation & selection: Genome evolution	Laxmi Chaudhary	DD
12.	Engineering strategy to enhance the nitrogen fixing efficiency of leguminous plants and its application in some cereals	Ritika Sharma	SK
13.	CASCADE (CRISPR-associated complex for antiviral defense): Structure and Mechanism	Shubhangi Bassi	SK
14.	3D culture models in development and diseases	Shivani Sharma	GK

15.	Molecular methods for diagnosis of drug resistant Tuberculosis	Surbhi Chauhan	AG
16.	Hypoxia tolerance: Biology and Applications	Shivani Gautam	AN
17.	Shivani Gautam	Hypoxia tolerance: Biology and Applications	DD
M.Sc. Biochemistry (Semester III) – 2021			
1.	FoxM1, the master regulator of Cell cycle and Cancer	A Akhil Kumar	AN
2.	Toxin-Antitoxin Loci in *Mycobacterium tuberculosis*: Implications for Pathogenesis and Stress Response	Aarti Rathi	AG
3.	Cellular and Antiviral Functions of APOBEC Family of Proteins	Divya Dhiman	DPS
4.	Therapeutic strategies to impede sickle hemoglobin polymerization	Haripriya Santosh	SK
5.	Role of glycerophosphodiesterase family of proteins in *M. tuberculosis*	Juhi	GK
6.	Acidic stress based response mechanisms of *M. tuberculosis*	Laxmi Chaudhary	GK
7.	Therapeutic advances for the treatment of visceral leishmaniasis	Mansi Tanwar	SK
8.	Significance of pfUCHL3 and pfUBC9 as promising anti-malarial drug targets	Neha	AN
9.	Role of HPV-E7 in Cellular Transformation: Disrupting the Cell Cycle Control	Preeti	AN
10.	Metabolome-wide thermal tolerance signals in *Drosophila*	Ritika Bassi	DD
11.	Long non-coding RNAs and diet-induced obesity in *Drosophila*	Ritika Sharma	DD
12.	Phenotypic profiling of thermal adaptations in *Drosophila*	Shivani	DD
13.	Role of lipoproteins in *M. tuberculosis* pathogenesis	Shubhangi Bassi	GK
14.	Tuberculosis diagnostics: current landscape, needs, and prospects	Surbhi Chauhan	AG
15.	Anti-Malarial drugs and elucidation of their mode of action	Vanshika Yadav	AN
M.Sc. Part I, Semester I (2022)			
1.	Viral vectors in gene therapy: designing, application, advantages and disadvantages	Anjali Maurya	DPS
2.	Virophages - the current status	Bhupendra Meena	DPS
3.	Human organoids as model system for biomedical research	Deeksha	GK

4.	The story of mRNA vaccines- from a dismissed idea to a breakthrough technology	Hitanshi Sharma	AG
5.	Genetics in the Pathophysiology of Obesity	K Rubinaaj	DD
6.	Artificial Intelligence in biotechnology: it's role, applications and pitfalls	Kartikey Yadav	GK
7.	Non-coding RNAs and Metabolic Gene Regulation	Parthvi Mahendru	DD
8.	Use of stem cells in regenerative medicine	Pushpinder Kaur	AN
9.	COVID-19 and Obesity: Overlapping of Two Pandemics	Raunak Gupta	DD
10.	Neutralizing-Antibody Responses to the SARS-CoV-2- Longevity, breadth, and evasion by emerging viral variants	Sapna Yadav	AG
11.	RNA virus replication: mechanism of regulation of transcription to replication switch	Shrishti Mitra	DPS
12.	Role of exosomes in tumor development and its application in anti-cancer therapy	T Akanksha	AN
13.	CRIPR/Cas systems: Overview, innovations and applications in treatment of human diseases	Vinayak Joshi	DD
14.	Directed Evolution, Molecular Chaperones and Other Applications	Yusra Riyaz	DD
15.	Current progress in gene therapy against viral diseases: HIV, HCV, SARS	Aashna Bansal	AG
M.Sc. (Biochemistry) (Semester III) - 2022			
1.	Toxin antitoxin loci; their role in pathogenesis, persistence and drug resistance in mycobacterium tuberculosis	Anjali Maurya	AG
2.	Cloning, Expression and Purification of GlpQ2 and Rv2277c, putative glycerophosphodiesterase of *M. tuberculosis*	Bhupendra Meena	GK
3.	Ionophores as potent anti-malarials	Deeksha	AN
4.	Production and Characterisation of Recombinant Antibodies for Diagnostics and Therapeutics	Hitanshi Sharma	AG
5.	Malaria and its therapy using natural compounds	K Rubinaaj	AN
6.	Identification of novel small molecule inhibitors to develop modified anti-TB chemotherapeutic regimen	Kartikey Yadav	GK
7.	Expression, Purification and Assay Development of Rv3842c (GlpQ1), a	Parthvi Mahendru	GK

	glycerophosphodiesterase of *M. tuberculosis*		
8.	Multiple facets of p53-FoxM1 axis in healthy and cancerous cells	Pushpinder Kaur	AN
9.	Induced obesity and characterisation of altered LncRNA expression profile impacting metabolic signals in *Drosophila*	Raunak Gupta	DD
10.	Phage Display Technology: A versatile tool for discovery of novel therapeutics and diagnostics	Sapna Yadav	AG
11.	Characterization of transcriptome-wide signals in the obesogenic environment in *Drosophila*	Shrishti Mitra	DD
12.	LncRNAs and obesity in *Drosophila*	T Akanksha	DD
13.	Analysis of alerted metabolic signals from Drosophila fed a high-fat diet regime	Vinayak Joshi	DD
14.	Neutralizing antibodies against SARS-CoV-2: scenario in light of emerging viral variants	Yusra Riyaz	AG
15.	HBx manipulates FoxM1 to promote Hepatocellular carcinoma	Aashna Bansal	AN
16.	Expression, Purification and Assay Development of Rv3177c, a hypothetical peroxidase of *M. tuberculosis*	Shivani Sharma	GK
M.Sc. Part I, Semester I (2023)			
1.	Advancements in CRISPR technology for the treatment of human genetic disorders	Deepika Pant	DD
2.	Genome evolution & Transposable elements	Ritu Mohapatra	DD
3.	Genetic architecture of Obesity	Kalpana Singh	DD
4.	Role of Post Translational Modifications in survival and pathogenesis of *Plasmodium falciparum*	Merlin Mathew	AN
5.	Use of Real time PCR in diagnostics	Swetha G.	AG
6.	COVID-19 Vaccine platforms: mRNA vaccine	Sonali Singh	AG
7.	Targeting cell cycle machinery to control cancer	Riya Sah	AN
8.	COVID-19 Vaccine platforms: DNA vaccine	Dipika	AG
9.	Biology, function and clinical applications of Exosomes	Bhoomika Rao	AN
10.	Epidemiology of Corona virus new variants	Aditi Rattan	AG
11.	Natural products: a vital source in Cancer chemotherapy	Aparna Sharma	AN
12.	Obesity and LncRNAs	Anupama Singh	DD
13.	Role of human microbiome in health and disease	Sagar	GK

14.	Role of Type I interferons in cancer and infection	Nandini Kumar	GK
15.	Recent advancements in Stems cell based therapy	Takhellambam Malemnganba	AN
16.	COVID-19 Vaccine platforms: subunit vaccine	Charvi Nayyar	AG
17.	New Antituberculosis drugs- from development to modified treatment regimens	Mehedi Hasan Jony	GK