

Electives in Department of Biochemistry

Hamdard Institute of Medical Sciences and Research &
Associated HAHC Hospital, New Delhi

Date-16-12-2024

S.no	Name of elective	Mammalian Cell culture basics and its application in research and development
1.	Block	I
2.	Department/Area	Biochemistry
3.	Name of mentor/supervisor	Dr Kailash Chandra, Associate Professor, Biochemistry, HIMSR
4.	Co-supervisor	Dr. Umda Mehnaz Tutor, Biochemistry, HIMSR
5.	Number of students intake	2-3
6.	Method of selection (if applicable)	Interview/ as per the policy of HIMSR
7.	Objectives	<ul style="list-style-type: none">• Overview of cell culture laboratory, equipment, and applications• Aseptic techniques and good cell culture practice (GCCP)• Demonstration of different cell types, equipment used in cell culture laboratory and their application in research• Preparation of media• Hands on training in mammalian cell culture techniques, passaging and maintenance of cell lines• Cryopreservation (freezing and thawing of cell lines)• Subculturing, determination of confluency, cell counting, and viability testing
8.	Expected outcomes	<ul style="list-style-type: none">• Successfully maintain cultures of animal cells and established cell lines with good viability and minimal contamination.• Student will be trained for the cell culture, including preparation and evaluation of

		<p>media, cryopreservation and recovery, and assessment of cell growth/health.</p> <ul style="list-style-type: none"> • Students will be trained in various equipment used in cell culture and biomedical research. • Recognize and troubleshoot problems common to routine cell culture.
9.	Assessment	Feedback/viva voice
10.	Log book	A google form for the day to day activity will be filled by students and the record for the same will be maintained in excel.

Umda Mehnaaz
16/12/24

Dr. Umda Mehnaaz
Tutor, Biochemistry, HIMSR
(Co-supervisor)

Kailash Chandra
16.12.2024

Dr Kailash Chandra,
Associate Professor, Biochemistry, HIMSR
(Supervisor)



Dr. KAILASH CHANDRA
Associate Professor, Biochemistry
HIMSR Jamia Hamdard
New Delhi-110062

Forwarded and Recommended by

Jaspreet Kaur

HOD, Biochemistry



Dr. JASPREET KAUR
Professor & HOD, Biochemistry
HIMSR
New Delhi-110062

Elective in Department of Biochemistry

**Hamdard Institute of Medical Science and Research and
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S.no.	Name of Elective	Instrumentation and working principles of different analytical techniques in a clinical Biochemistry Laboratory
1.	Block	I
2.	Department/ area	Biochemistry
3.	Name of mentor/ supervisor	Dr. Sajib Kumar Sarkar , Assistant Professor, Biochemistry, HIMSR
4.	Co-Supervisor	Mr Rizwan Khan
5.	Number of students intake	2-5
6.	Method of selection (If applicable)	Interview /as per the policy of HIMSR
7.	Objectives	<ul style="list-style-type: none">• To have an insight on organization and instrumentation in clinical chemistry laboratory• To learn different levels of automation in the laboratory• To understand the principles of different analytical techniques• To know about the recent advances in the field of Analytical Chemistry.

8.	Expected outcomes	<ul style="list-style-type: none"> • Students will be familiar with the functioning of a clinical laboratory facility. • Working principles of different analytical techniques. • Merits and demerits of different analytical techniques. • Newer analytical techniques and recent advances.
9.	Assessment	MCQ assessment in google form as well as viva voce.
10.	Logbook	A google form for the day-to-day activity will be filled by students and record for the same will be maintained in excel sheet.

Rizwan Khan

Mr Rizwan Khan

Tutor

Department of Biochemistry,
HIMSR

Sajib Kumar Sarkar

Dr Sajib Kumar Sarkar

Assistant Professor

Department of Biochemistry,
HIMSR

Forwarded and recommended by

Jaspreet Kaur

HOD, Biochemistry



Dr. JASPREET KAUR
Professor & HOD, Biochemistry
HIMSR
New Delhi-110062

Elective in Department Of Biochemistry

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S.no.	Name of Elective	"Mastering ELISA and Electrophoresis technique: Unveiling Their Clinical Significance for Precision Diagnostics!"
1.	Block	I
2.	Department/ area	Biochemistry
3.	Name of mentor/ supervisor	Dr. Bhumika Upadhyay, Assistant Professor, Biochemistry, HIMSR
4.	Co-Supervisor	1. Ms Shazia Bano Tutor, Biochemistry, HIMSR & 2. Dr. Tahreem Afroz Tutor, Biochemistry, HIMSR
5.	Number of students intake	2-5
6.	Method of selection (If applicable)	Interview /as per the policy of HIMSR
7.	Objectives	<ol style="list-style-type: none"> 1. Understand Fundamental Principles: Gain in-depth knowledge of the principles behind ELISA and electrophoresis techniques and their role in clinical diagnostics. 2. Hands-On Skill Development: Develop practical expertise in performing ELISA and electrophoresis with accuracy and precision. 3. Interpretation of Results: Learn to analyze and interpret results obtained from ELISA and electrophoresis to identify their clinical relevance. 4. Enhance Diagnostic Application: Explore the application of these techniques in diagnosing diseases, monitoring biomarkers, and advancing clinical research. 5. Ensure Quality and Accuracy: Understand the importance of quality control, troubleshooting, and standardization in achieving reliable and reproducible results.
8.	Expected outcomes	Proficiency in Techniques: Participants will gain hands-on expertise in performing ELISA and electrophoresis, enabling them to conduct

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S.no.	Name of Elective	Risk Management in pre analytical, analytical and post analytical stages of investigations in Clinical biochemistry lab.
1.	Block	I
2.	Department/ area	Biochemistry
3.	Name of mentor/ supervisor	Dr. Jaspreet Kaur , Professor & HOD , Biochemistry, HIMSR
4.	Co-Supervisor	1. Mr. Rizwan Khan Tutor, Biochemistry, HIMSR & 2. Ms. Shazia Bano Tutor, Biochemistry, HIMSR
5.	Number of students intake	2-5
6.	Method of selection (If applicable)	Interview /as per the policy of HIMSR
7.	Objectives	<ul style="list-style-type: none"> • Concept of quality indicators • Pre-analytical Phase: risk identification, assessment and mitigation. Area of focus: <ol style="list-style-type: none"> a) Patient preparation b) Sample collection c) Transport of sample d) Preparation for analysis and storage. • Analytical Phase: risk identification, assessment and mitigation. Area of focus <ol style="list-style-type: none"> a) Receiving and processing of samples. b) Sample Rejection record maintained. c) Instruments(IQ,OQ,PQ)daily, weekly and monthly maintenance

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S.no.	Name of Elective	Quality control basics and its importance in clinical and endocrinology labs.
1.	Block	I
2.	Department/ area	Biochemistry
3.	Name of mentor/ supervisor	Dr. Sana Alam , Associate Professor, Biochemistry,HIMSR
4.	Co-Supervisor	Ms shazia Bano Tutor, Biochemistry, HIMSR
5.	Number of students intake	2-5
6.	Method of selection (If applicable)	Interview /as per the policy of HIMSR
7.	Objectives	<ul style="list-style-type: none">• Overview of clinical biochemistry and endocrinology laboratory, machines (Beckman coulter AU480, Architect i1000SR, Bio-Rad D-10, Roche 9180 electrolyte analyzer), their principle and functioning.• Proper SOP's for machine working and Quality control testing.• Universal precautions for dealing with Q.C. aliquots and human samples.• Preparation of both levels i.e. level-1 and level-2 in labs.• Demonstration of different types of Q.C. I.e. internal and external quality control.• Hands on training and dealing with machines.• Preservation, freezing and thawing of Q.C. sample.