

ARMED FORCES MEDICAL COLLEGE

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Multi-Disciplinary Research Unit



Multi-Disciplinary Research Unit (MRU) is a project under the Department of Health Research (DHR)/Ministry of Health and Family Welfare, Government of India. As an initiative to develop and strengthen the health research infrastructure in the country, in June 2013 during the 12th plan period Government of India approved the scheme for 'Establishment of Multi-disciplinary Research Units (MRUs) in the Government Medical Colleges/Research Institutions'.

The objective of this initiative is to:

- Encourage and strengthen an environment of research in medical colleges.
- Bridge the gap in the infrastructure, which is inhibiting health research in the Medical Colleges by assisting them to establish multidisciplinary research facilities with a view to improving the health research and health services.
- To improve the overall health status of the population by creating evidence-based application of diagnostic procedures/processes/methods.

MRU at AFMC:

It's the state of art facility for basic, clinical and diagnostic molecular research. The MRU was established in Armed Forces Medical College (AFMC) on March 2019 with a functional molecular biology and cell culture laboratory. The core function of MRU, AFMC is to promote and encourage quality medical research in the Institution and to undertake research in non-communicable diseases and other need-based research.

Its facility is open to everybody working for science under the collaboration with AFMC. Till date we were able to meet the deadlines about infrastructure development, constitution of Local Research Advisory Committee (LRAC), appointing human resources, and launching research projects. In future we hope that our projects will bring novel insights to medical research

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Multi-Disciplinary Research Unit

List of Equipments at MRU



CO2 incubator

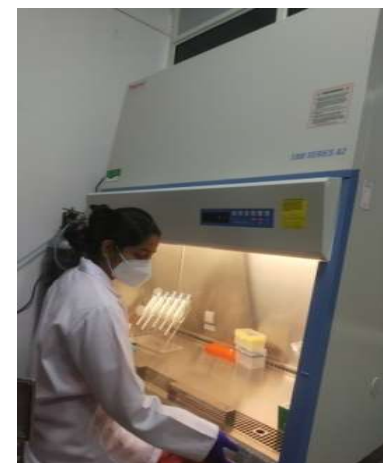


Real-time PCR

S.No	Items	Qty
1	Quant studio 5 Real Time PCR System	1
2	Chemi Gel documentation system	1
3	Biosafety Cabinet class II	1
4	CO2 Incubator	1
5	Single Channel variable volume micropipettes	4
6	Multichannel digital micropipettes	4
7	Pico pH meter	1
8	Ice flaking Machine	1
9	Deep freezer(-20 to -40 degrees)	1
10	Deep freezer(-70 to -80 degrees)	1
11	Hot air Oven	1
12	Mini Centrifuge	3



Gel-documentation system



Biosafety Cabinet Class-II

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List of Equipments at MRU



96-well Thermal Cycler



Micro Volume Spectrophotometer

S.No	Items	Qty
13	Inverted Fluorescence microscope	1
14	Veriti 96-well thermal cycler	2
15	Micro Volume Spectrophotometer	1
16	Laminar airflow vertical	2
17	Vertical autoclave	1
18	Liquid Nitrogen Container	2
19	Horizontal electrophoresis system	1
20	Power Pack	1
21	Analytical weighing balance	1
22	Orbital shaker	1
23	Dry bath	2
24	Refrigerated Centrifuge	1



Inverted Fluorescent microscope



LN2 container & Autoclave

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Multi-Disciplinary Research Unit

Ongoing research projects utilizing the facilities of MRU, AFMC

S. No	Title of the project	PI
1	To evaluate the role of DNA methylation in Diabetic Nephropathy: A Pilot Project.	Lt Col Bhasker Mukherjee
2	DNA methylation in p16, CALCA and CCNA1 genes in urine as non-invasive biomarkers of bladder cancer.	Lt Col Bhasker Mukherjee
3	To identify T315I mutation associated primary and secondary tyrosine kinase inhibitor resistance in Chronic Myeloid Leukemia.	Col Pratibha Misra
4	Study of the degree of global methylation and gene specific promoter methylation in new and re-inductees of high altitude who develop high altitude pulmonary edema.	Col Pratibha Misra
5	Differential DNA methylation pattern of adipokine genes in gestational diabetes mellitus treated with metformin-A pilot study.	Dr. Sibin M K
6	Comparison of the expression profile of circulating miRNA in serum and follicular fluids (FFs) of women undergoing IVF with and without polycystic ovary syndrome (PCOS) for determining utility of these markers for diagnosis of PCOS.	Dr. Yaongamphi Vashum
7	In vitro evaluation of the therapeutic role of miR-217 in KRAS- driven cancers (KDC)	Dr. Yaongamphi Vashum
8	Understanding the role of circulatory miRNAs in chronic alcoholism with impaired glucose tolerance.	Dr. Sibin M K

Proposed Research Projects funded by MRU, AFMC

S. No	Title	PI
1	A study of immune response of RT-PCR positive and negative covid-19 patients to CHADOX1 NCOV- 19 corona virus vaccine	Sur Com Saurabh Bobdey
2	Understanding the differential DNA methylation pattern in patients of SLE with cutaneous manifestations using whole genome bisulfite sequencing and its validation.	Col Biju Vasudevan
3	Micro RNA 146a in psoriasis patients, unaffected first-degree relatives and healthy controls – A comparative study	Lt Col Shekhar Neema
4	Gene variations in Alcohol Dependence Syndrome(ADS): A case-control study	Lt Col Prateek Yadav
5	Expression of specific microRNAs in Alcohol Dependence Syndrome: A Pilot study	Lt Col Prateek Yadav

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MRU Core Appointments

Brig AS Menon Prof & HoD Internal Medicine	: Sub Dean (Research)
Col Pratibha Mishra Prof and HoD Biochemistry	: Officer in charge (Mol. Bio. and Cell Culture Lab)
Col Rajesh Sahu Prof Community Medicine	: Officer in charge & Nodal Offr MRU (DHR)
Dr. Sibin MK, Scientist C	: Supervisor (Mol. Bio. Lab)
Dr. Yaongamphi Vashum, Scientist C	: Supervisor (Cell culture Lab)
Dr. Palaniswamy R	: Research Scientist-II
Mrs. Ankita Gambhirrao	: Research Scientist-I
Ms. Ruchira A Godse	: Lab Technician
Ms. Saylee S Khemkar	: Data Entry Operator

Gallery of workshops conducted in MRU

First Molecular Biology workshop was conducted for faculty from clinical department during 25th -27th Oct 2021



Gallery of workshops conducted in MRU

Second workshop was conducted on Real-time PCR which was a part of inter command CME on molecular approach to cancer during 03rd-04th Dec 2021.

