

Department of Biochemistry

Bharati Vidyapeeth Deemed To Be
University Medical College, Pune.



Today's Biochemistry is Tomorrow's Medicine

Goal

- To provide scientific basis of life processes at molecular level to the students and orient them toward the correlation of biochemical analysis and interpretation for diagnosis in health and diseases.

Objectives

- To impart the chemical & structural knowledge about biomolecules
- To provide an understanding of the biochemical and molecular basis of disease
- To integrate biochemical events with structure and function of body in health and diseases
- To enable students to use this knowledge in biochemical analysis to interpret by using recent techniques.

Curriculum

- The department follows the biochemistry curriculum as per the MCI guidelines for UG and PG .



- The curriculum is revised frequently as per the prevailing MCI guidelines and addition of new knowledge.

Teaching and Learning

- Our Department boasts of well experienced, qualified, motivated and dedicated teachers.



| Sl. No. | Name | Qualification | Designation |
|---------|--------------------------|--------------------------------|---------------------|
| 1 | Dr.M.K. Padwal | M.B.B.S.M.D. (Biochemistry) | Professor and Head |
| 2 | Dr. S. N. Salunkhe | M.B.B.S.M.D. (Biochemistry) | Associate Professor |
| 3 | Dr. N.A. Vaidya | MSc PhD (Medical Biochemistry) | Associate Professor |
| 4 | Dr.L.R.Takale | M.B.B.S.M.D. (Biochemistry) | Associate Professor |
| 5 | Dr. R.S. Shivkar | M.B.B.S.M.D. (Biochemistry) | Assistant Professor |
| 6 | Dr. P. H. Padalkar | MSc PhD (Medical Biochemistry) | Assistant Professor |
| 7 | Dr. G. C.Gawade | M.B.B.S.M.D. (Biochemistry) | Assistant Professor |
| 8 | Dr. A.A.Momin | MSc PhD (Medical Biochemistry) | Tutor |
| 9 | Mrs. R.K.Chavan | MSc (Medical Biochemistry) | Tutor |
| 10 | Dr. Annapurna Raichurkar | M.B.B.S.M.D. (Biochemistry) | Tutor |

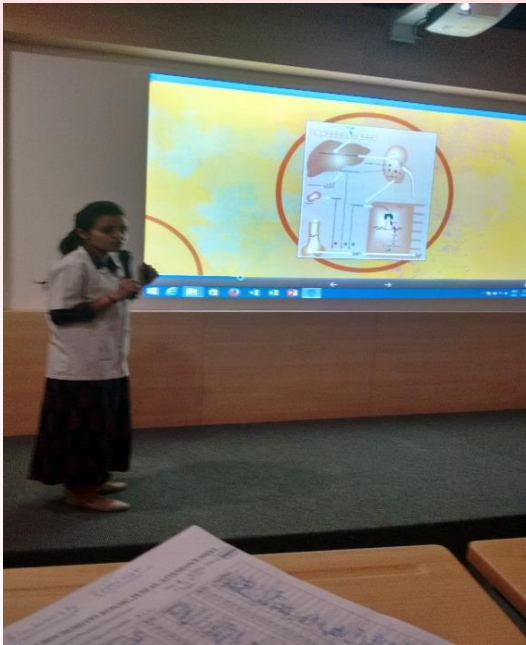
Teaching - Learning

- Department is actively involved in conducting Teaching & Learning activities of I MBBS, M.D.(Biochemistry), M.Sc (Medical Biochemistry), PhD (Medical Biochemistry), DMLT.
- Apart from routine teaching, modern methods of teaching like seminars, quiz, journal clubs, Microteaching and case studies are also practiced using computer assisted learning.

Student support & progression

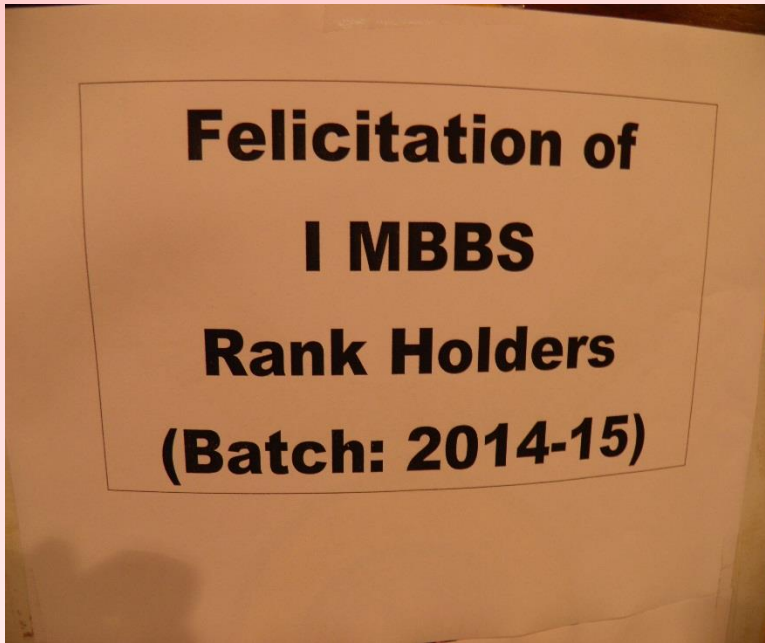
Undergraduates:

- They are encouraged to participate in various activities like Quiz; Seminars conducted at departmental, state and national level (Elsevier), their preparations are carried under close supervision of the faculty.





- Proud of about **20 Distinction holders** in Biochemistry at I MBBS university exams during past 5 years.



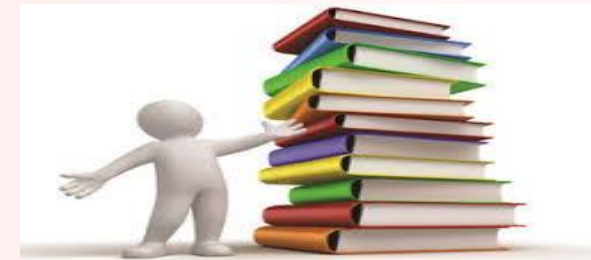
- Remedial Teaching programme is arranged regularly for academically poor students.
- Regular feedbacks are obtained from students and actions are implemented.

Post graduate:

- They are encouraged to attend various CMEs, workshops to gain new knowledge and skills.
- They are also encouraged to present their research work during various state and national conferences.



Number of Publications



| S.N. | Journals | No. of Publications | Indexed in | Citation Index |
|------|------------------------|---------------------|---|----------------|
| 1 | International Journals | 14 | Pubmed Scopus | Range: 0-58 |
| 2 | National Journals | 14 | Indian Citation Web of Science Google Scholar | Average: 5.2 |
| 3 | State | 02 | | |

List of Completed Funded BVU Projects

Department of Biochemistry

| Sr. No. | Title of projects | Funding and Year | Investigators |
|---------|---|------------------|---|
| 1 | Prevalence and Potential Significance of Vitamin D and Cardiovascular diseases. | BVU-2013 | Dr. R. R. Melinkeri Dr. M. K. Padwal |
| 2 | Evaluation of Oxidative stress in respiratory diseases in pediatric patients. | BVU-2013 | Dr. N. A. Vaidya Dr. P. M. Bulakh |
| 3 | Effect of Pyruvate and Cysteine on lens enzyme in experimental cataract | BVU-2013 | Dr. P. H. Padalkar Dr. P. M. Bulakh |
| 4 | Study of medicinal plants on lens enzymes in experimental diabetic cataract | BVU-2013 | Dr. A. M.Hajarnavis Dr. P. M. Bulakh |
| 5 | Study of insertion / deletion polymorphism of angiotensin converting enzyme gene in type 2 diabetic patients with and without nephropathy | BVU -2016 | Mr. A. A. Momin Dr. M. K. Padwal |

List of Completed Collaborative Research Projects

Department of Biochemistry

| Sr. No. | Title of projects | Funding and Year | Investigators |
|---------|--|---|---|
| 1 | Effect of Phytonutrient rich beverages in healthy subjects. | ICMR 2015 | Dr.Smita Nilegaonkar, Dr.Melinkeri, Dr Padwal |
| 2 | Studies on effect of Prebiotic and resistant starch enriched food preparations in healthy subjects- a preliminary study | MACS- Agarkar research institute 2013 | Dr. Vaishali Agte Dr.Melinkeri, Dr Padwal |
| 3 | Correlation of plasma level of high dose methotrexate and 6 mercaptopurine with their efficacy and adverse drug reactions in paediatric malignancies | BVDU 2016 | Ms. Manjusha Sajith Dr. Atmaram Pawar Dr. Neela A. Vaidya |

List of Completed ICMR-STS Research Projects

Department of Biochemistry

| Sr. No. | Title of projects | Funding and Year | Investigators |
|---------|---|------------------|--|
| 1 | Assessment of thyroid function in Euthyroid Obese Medical Students | ICMR-STS (2012) | Dr.Raiba Deshmukh Dr. M. K.Padwal |
| 2 | Association of Serum Ferritin levels with metabolic syndrome and insulin resistance | ICMR-STS (2013) | Dr. Mohsin Murshid Dr. M. K.Padwal |
| 3 | Inter-relationship between blood glucose and bone profile in type 2 diabetes | ICMR-STS (2013) | Dr. Nikita Sane Dr. P. H. Padalkar |
| 4 | Correlation of liver transaminase and platelet count in Dengue patients | ICMR-STS (2015) | Ms.Akanshya Vaidya Dr. R. R.Shivkar |
| 5 | Study of myocardial injury markers in patients of chronic kidney disease | ICMR-STS (2015) | Ms. Sumanshi Singh Mr. A. A. Momin |

List of Ongoing Research Projects(Faculty)

Department of Biochemistry

| Sr. No. | Title of projects | Funding & Year | Investigators |
|---------|---|-----------------|---|
| 1 | Evaluation of Homocysteine, Folic Acid, Vitamin B12 and Methylene Tetrahydrofolate Reductase (MTHFR) C677T and A1298C and ACE (I/D) gene polymorphisms as risk factors in young patients of Coronary Artery Disease (CAD) | BVU (2016-2018) | Dr. R.R.Shivkar Dr.G.C.Gawade Dr. A. A.Momin Dr. M. K.Padwal |
| 2 | Effect of antioxidants on oxidative stress in male infertility | BVU (2018) | Dr. P. H. Padalkar Dr. M. K. Padwal |
| 3 | Impact Of accreditation on awareness and knowledge of technicians about laboratory quality measures in tertiary care hospital | Applied (2018) | Dr. P. H. Padalkar Dr. R. R. Shivkar |
| 4 | Molecular markers of AGE-RAGE system and their association with AGEs, s RAGE and diabetic nephropathy | Applied (2018) | Dr. A. A.Momin Dr.Mahesh Kulkarni Dr. M. K. Padwal |

List of Ongoing Research Projects(UG Students)

Department of Biochemistry

| Sr. No. | Title of projects | Funding & Year | Investigators |
|---------|---|----------------|---|
| 1 | Evaluation of Serum Homocysteine as risk factors in young patients of Coronary Artery Disease (CAD) | 2018 | Ms.Anuradhakumari Dr. R. R.Shivkar |
| 2 | Evaluation of the pattern of electrolytes Disturbances in Patients Admitted in ICU | 2018 | Ms.Kushagri Gupta Dr. P. H. Padalkar |
| 3 | Correlation of TyG (Fasting Triglyceride – Glucose)-BMI index and liver transaminases In Polycystic Ovarian Disease(PCOD) | 2018 | Mr.Aman Aher Dr. G.C.Gawade |
| 4 | Assessment Of Thyroid Function in Type 2 Diabetes Mellitus | 2018 | Ms.Anjali Gupta Mrs.R.K.Chavan |

List of Completed Research Projects

PhD (Medical Biochemistry)

| Sr. No. | Title of projects | Funding and Year | Investigators |
|---------|---|------------------|--|
| 1 | Evaluation of Oxidative stress in respiratory diseases in pediatric patients. | Self (2014) | Dr. N. A. Vaidya Dr. P. M. Bulakh |
| 2 | Effect of endogenous antioxidants on lens enzymes in Hydrogen peroxide induced cataract | Self (2014) | Dr. P. H. Padalkar Dr. P. M. Bulakh |
| 3 | Study of medicinal plants on lens enzymes in experimental diabetic cataract | Self (2014) | Dr.A.M. Hajarnavis Dr. P. M. Bulakh |
| 4 | Study of single nucleotide polymorphism of lipoprotein lipase and adiponectin genes and their association with type 2 Diabetes Mellitus | Self (2016) | Dr.A.A.Momin Dr.M.P.Bankar |

List of Completed Research Projects

MD Biochemistry

| Sr. No. | Title of projects | Funding and Year | Investigators |
|---------|--|------------------|---|
| 1 | High sensitive CRP in hypertension | Self (2013) | Dr. S. Dawari Dr. R. R. Melinkeri |
| 2 | Correlation between Prostatic Acid Phosphatase and Prostatic specific antigen in prostatic disorders | Self (2013) | Dr. G. Karve Dr. A. K.Tandon |
| 3 | Oxidative Stress and paraoxonase status in diabetic nephropathy | Self (2014) | Dr. G. C. Gawade Dr. R. R. Melinkeri |
| 4 | Assessment of Biochemical Risk Factors of Cardiovascular Diseases in Patients with Hypothyroidism | Self (2014) | Dr. B. D. Kamble Dr. M. K. Padwal |
| 5 | Correlation of Homocysteine, paraoxonase 1 and Malondialdehyde in healthy elderly population | Self (2015) | Dr. P. N. Nirmale Dr. M. K. Padwal |
| 6 | Association between the levels of serum ferritin and C- reactive protein (CRP) in patients on hemodialysis | Self (2015) | Dr.A.V. Raichurkar Dr. M. K. Padwal |

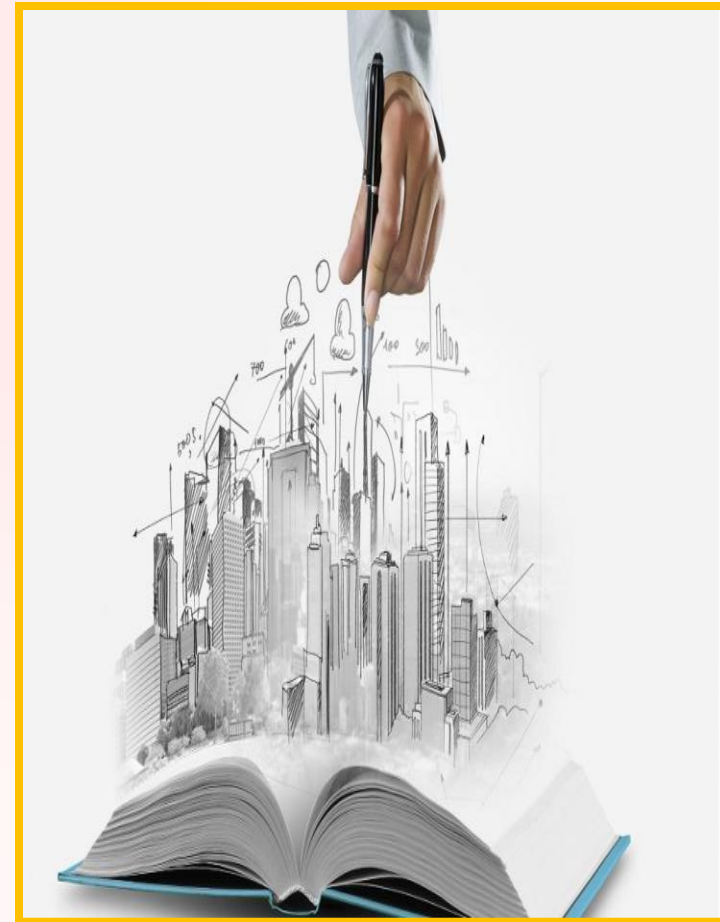
List of Completed Research Projects

MSc.(Medical Biochemistry)

| Sr. No. | Title of projects | Funding and year | Investigators |
|---------|---|------------------|---------------------------------------|
| 1 | Oxidative stress and antioxidant status in hypothyroidism | Self (2012) | Mr. Rajesh Thakur Dr. M. K. Padwal |
| 2 | Evaluation of oxidative stress in obese medical students with reference to Cardiometabolic Syndrome | Self (2013) | Ms.Priya Kamathe Dr. M. K. Padwal |
| 3 | Association of Vitamin D deficiency in cardiovascular disease with respect to Homocysteine, B12 and Lipid profile | Self (2014) | Mr. Kovan Sayyad Dr. M. K. Padwal |
| 4 | Association of serum ferritin levels in cardiovascular diseases with respect to lipid profile. | Self (2015) | Ms. Sholeh Khedri Dr. M. K. Padwal |

Infrastructure & Learning resources

- Demonstration Rooms: 2 (80 students each)
- Practical Class Room /Laboratories : 378 sq.m.(90 students)
- Preparation Room: 2, (36 sq.m.)
- Research Laboratory: 50 sq.m.
- Speciality Laboratory: 90 sq.m



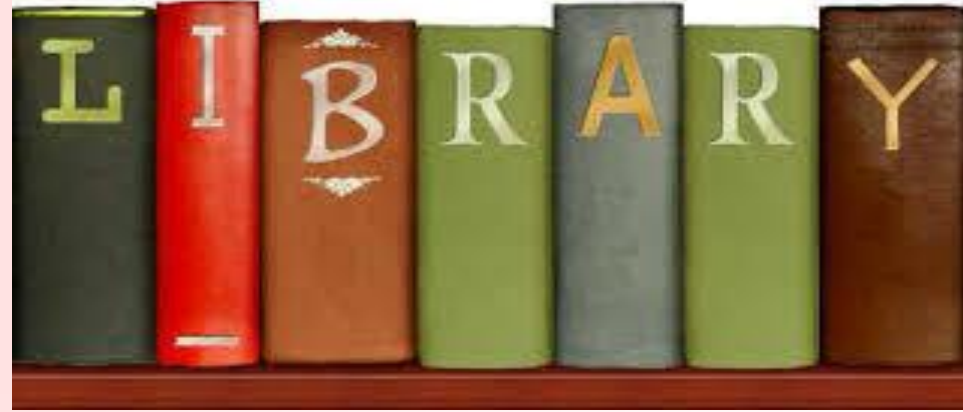
Infrastructure



Office Accommodation:

- Professor & HOD's Room: 18 sq. m.
- Professor's Room: 15 sq. m.
- Assoc. Professor's Room: 15 sq. m.
- Lecturer's Room: $12 \times 2 = 24$ sq.m.
- Tutor's Room: 15 sq.m.
- Clerk/Office: 12 sq. m
- Non-Teaching staff
and Clerical Staff: 24sq. m.

Infrastructure



- Departmental Library: 63 sq.m
- Consists of about 263 books - including latest editions on Molecular biology, Genetics and Clinical chemistry.

Equipments / teaching aids in the Dept:

LCD projectors: 2

Slide projectors: 1

Computers: 9 **connected to internet**

Laptop: 1

Cordless Mike-1

Collar Mike- 1

Pen for interactive teaching- 1



Department Of Biochemistry



Research Laboratory



Library Cum Seminar Room



Speciality Laboratory and Museum

Corridor



UG Practical Hall : Biochemistry



Central Clinical Laboratory:

- Augmentation of Infrastructure of Biochemistry section of central clinical laboratory of Bharati hospital was done during 2015- 2016.
- New lab is almost 2000 sq. ft, with upgraded and highly sophisticated sensitive equipments
- This has improved the quality of laboratory reports and turn around time.
- Technical staff is also encouraged to participate in various CMEs
- Routine tests of Biochemistry section are accredited by NABL (NABL Certificate Number : MC:2181) as per ISO 15189:2012.

Facilities for Hospital Services

| Sr.No | Instruments | Services Provided |
|-------|--|---|
| 1 | Fully Automated & Semi Automated Biochemistry Analyser | All routine Biochemistry parameters – liver function, kidney function, diabetic profile, Cardiac Markers, CRP |
| 2 | Fully Automated Chemiluminescence Immunoassay | Thyroid Profile, Fertility/ANC profile, Anemia profile, Tumor markers, vitamins. |
| 3 | UV-VIS Spectrophotometer | Oxidative stress markers, Enzymology, Vitamins, Drug concentration study |
| 4 | Electrolyte and Blood Gas Analysers | Serum Electrolytes and Blood gases |
| 5 | Nyco Card Reader and HPLC (D10) | Hemoglobinopathy detection and HbA _{1c} measurement |
| 6 | Osmometer | Serum & Urine Osmolarity |
| 7 | Electrophoresis apparatus with Densitometer | Protein Electrophoresis |
| 8 | Refrigerated high speed centrifuge | Separation of serum/plasma |
| 9 | Deep freeze and Walk in cooler | Storage of specimen and reagents |



Governance & Leadership

- Department shoulders the additional responsibility of Institutional Ethics committee (IEC). The committee has been registered under DCGI in February 2014 and reregistrered in May 2017 (DCGI Reg.No. ECR 518)
- Faculty is acting as editor and reviewer in various scientific journals.
- Faculty is also involved in various responsibi university and college, like Sports ,Library C research compilation, NAAC, NABH and NABL cell etc.
- Faculty regularly upgrades themselves by participating various training programmes and knowledge events.





DEPARTMENT OF BIOCHEMISTRY

We The Host

3rd Maharashtra state chapter conference AMBI 27-28 April 2017





DEPARTMENT OF BIOCHEMISTRY

We The Guest



**Chairperson in CME on Nutrigenomics
at Deenanath Mangeshkar hospital
November 2017**



**Chairperson in
2nd MH AMBI 2015,
LTMC Sion Mumbai**



**Judge for
Conference 2015**



**Resource person for
GP lectures 2017**



**Resource Person in CME
at TATA Memorial, Mumbai 2016**



DEPARTMENT OF BIOCHEMISTRY

We The Participants

