



Haffkine Institute

For Training Research and Testing

**ANNUAL
REPORT- 2009-2010**



ANNUAL REPORT

OF THE

HAFFKINE INSTITUTE
FOR TRAINING, RESEARCH & TESTING
ACHARYA DONDE MARG, PAREL, MUMBAI - 400 012

FOR THE YEAR

2009 - 2010

HAFFKINE INSTITUTE FOR TRAINING, RESEARCH AND TESTING



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HAFFKINE INSTITUTE FOR TRAINING, RESEARCH AND TESTING GOVERNING COUNCIL

PRESIDENT

Shri. Rajesh A. Tope

(10/12/2008 to 09/09/2009)

Minister for Medical Education,
Government of Maharashtra,
Mantralaya, Mumbai-32

Hon. Dr. Vijaykumar Gavit

(30/10/2009 - till date)

Minister for Medical Education,
Government of Maharashtra,
Mantralaya, Mumbai-32

Vice President

Hon. Prof. Varsha Gaikwad

Minister for Medical Education,
Government of Maharashtra,
Mantralaya, Mumbai-32.

Members:

Dr. Abhay S. Chowdhary

Director, Haffkine Institute for Training, Research & Testing,
Parel, Mumbai-12

Shri. Milind Mhaikar, IAS

Secretary to Government of Maharashtra,
Medical Education And Drugs Department,
Mantralaya, Mumbai-32.

Shri. P. R. Sabde

Commissioner, Food & Drug Administration,
Govt. of Maharashtra,
Bandra-Kurla complex, Bandra (E), Mumbai-51.

Dr. R. K. Shrivastav

Director General of Health Services,
Minister of Health & Family Welfare,
Govt. of India, New Delhi.

Dr. W. B. Tayde

Director, Medical Education & research,
Govt. of Maharashtra, Mumbai-01.

ACADEMIC COUNCIL

- | | |
|---|-------------|
| 1. Dr. (Mrs.) Mrudula A. Phadke
Former Vice Chancellor, MUHS, Nashik – 422 004.
Visiting Scientist, Haffkine Institute. | Chairperson |
| 2. Dr. Mrs. Nilima Kshirsagar
Vice Chancellor, MUHS, Nashik – 422 004. | Member |
| 3. Dr. W. B. Tayde
Director, Medical Education & Research,
Govt. of Maharashtra, Mumbai – 400 001. | Member |
| 4. Dr. Sanjay Oak
Director, Medical Education & Major Hospitals (MCGM),
Dean, Seth G. S. Medical College & K.E.M. Hospital,
Mumbai – 400 012 | Member |
| 5. Dr. R.S. Inamdar
(01/01/2009 to 10/02/2010)
Dean, Grant Medical College & Sir J.J. Group of Hospitals,
Byculla, Mumbai – 400 008 | Member |
| Padmashree Dr. T.P. Lahane
(10/02/2010 - till date)
Dean, Grant Medical College &
Sir J.J. Group of Hospitals
Byculla, Mumbai - 400 008 | Member |
| 7. Dr. V. A. Tabhane
Director, Institute of Science, Fort, Mumbai – 400 032 | Member |
| 8. Dr. G. D. Yadav
Director, Institute of Chemical Technology,
Matunga (E), Mumbai – 400 019. | Member |
| 9. Dr. Abhay S. Chowdhary
Director, Haffkine Institute for Training, Research & Testing,
Parel, Mumbai-400012 | Member |
| 10. Dr. S. V. Athlekar
Senior Scientific Officer (CL-I)
Director, Haffkine Institute for Training, Research & Testing,
Parel, Mumbai-400012 | Convener |

ADVISORY COUNCIL FOR RESEARCH

1. Dr. R. D. Lele Emeritus Professor, Dept of Nuclear Medicine Jaslok Hospital, Mumbai – 400 026.	Chairman
2. Dr. (Mrs.) Mrudula A. Phadke Former Vice Chancellor, MUHS, Nashik – 422 004.	Member
3. Dr. Mrs. Nilima Kshirsagar Vice Chancellor, MUHS, Nashik – 422 004.	Member
4. Dr. D. S. Dakhure Director, Directorate of Health Services, Govt. of Maharashtra, Arogya Bhavan, Mumbai – 400 001.	Member
5. Dr. W. B. Tayde Director, Medical Education & Research, Govt. of Maharashtra, Mumbai – 400 001.	Member
6. Vd. Kuldeep Raj Kohli Director of Ayurved, Directorate of Ayurved, Mumbai – 400 001.	Member
7. Dr. Rajiv Sarin Director, Advanced Centre for Treatment, Research Education in Cancer (ACTREC), Navi Mumbai – 410 210.	Member
8. Dr. H.S. Palep Dr. Palep's Medical education & Research Trust, Lower Parel (W), Mumbai – 400 013	Member
9. Dr. Abhay S. Chowdhary Director, Haffkine Institute for Training, Research & Testing, Parel, Mumbai-12.	Member
10. Shri. L. S. Patil, Asst. Director, Haffkine Institute for Training, Research & Testing, Parel, Mumbai-12.	Convener

EXECUTIVE COMMITTEE

- | | |
|---|------------------|
| 1. Dr. Abhay S. Chowdhary
Director. | Chairman |
| 2. Shri. L. S. Patil
Asst. Director. | Member |
| 3. Shri S.P. Gajabhiye
Senior Scientific Officer (CL-I) | Member |
| 4. Smt. P. V. Ansulkar
Senior Scientific Officer (CL-I) | Member |
| 5. President, Shramik Utkersha Sabha
(Worker's Union Representative) | Member |
| 6. Chief Administrative Officer
Haffkine Institute for Training, Research & Testing,
Parel, Mumbai-400012 | Member Secretary |

STAFF OF THE HAFFKINE INSTITUTE

ADMINISTRATION

Director:

Dr. Abhay Chowdhary, M.D., DHA, DM Virology, FIMSA.

Chief Administrative Officer:

Shri. L. S. Patil, M.Sc., D.M.L.T., D.B.M.

Accounts Officer:

1. Mrs. S.S. Garud (Jan. to March, 2010)

2. Shri. G. R. Tamagadge. (April 2009 to Jan. 2010, Additional Charge)

BACTERIOLOGY

Senior Scientific Officer, Class I:

Shri. S.P. Gajabhiye, M.Sc.

BIOCHEMISTRY

Senior Scientific Officer, Class I:

Smt. P. V. Ansulkar, M.Sc.

Scientific Officer, Class II:

Ms. Amruta A. Naik, M.Sc.

CLINICAL PATHOLOGY

Senior Scientific Officer, Class I:

Dr. S. V. Athlekar, M.Sc., Ph.D.

CHEMOTHERAPY

Senior Scientific Officer, Class I:

Dr. A. S. Bobade, M.Sc., Ph.D.

Scientific Officer, Class II:

Shri. Ashish L. Asrondkar, M.Sc.

CHEMICAL TESTING UNIT

Assistant Director:

Shri. L. S. Patil, M.Sc., D.M.L.T., D.B.M.

Scientific Officer, Class II:

1. Smt. S. L. Patil, B.Sc.

2. Ms. Vrushali N. Patil, M.Sc.

TOXICOLOGY

Senior Scientific Officer Class I:

Shri. A. G. Mitra, M.Sc.

Scientific Officer, Class II:

Dr. Pavankumar H.Chavan, M.V.Sc.

TRAINING

Officer In-charge:

Dr. S. V. Athlekar, M.Sc., Ph.D.

ZOONOSIS

Senior Scientific Officer Class I:

1. Shri. K. R. Pawar, M.Sc. (Snake Farm)
2. Dr. M.L. Rammaiya, M.Sc.,Ph.D.

Scientific Officer Class II:

Dr. Mrunali Ghag, M.V.Sc. (Animal Reproduction)

VIROLOGY

Scientific Officer Class II:

1. Shri. Ritwik Dahake, M.Sc.
2. Shri. Sandeepan Mukherjee, M.Sc.

INTRODUCTION:

Haffkine Institute, one of the premier institutes of our country has provided training and research facilities to graduate and post-graduate students of various colleges for last 110 years. This was the very institute where first ever clinical trial of plague vaccine was conducted by the founder of this institute by injecting himself with the plague vaccine. The institute has research laboratories, comprising of Chemotherapy, Pharmacology, Toxicology and Human Pharmacology, Immunology, Bioavailability, Virology, Clinical Pathology, Biochemistry, Herpetarium and Zoonosis. Haffkine institute has been selected to be part of the **Avian Influenza Laboratory Network by NCDC**- a project to be funded by World Bank. Following are the services currently offered by the Institute.

Zoonosis:

The department of zoonosis continued their screening programme for screening insecticidal agents. Maintenance of colonies of insects of public health and strains of parasites in experimental animals was continued. Venomous snakes were maintained at the venomous animal unit of the department. During the period 1st April 2009 to

31st March 2010, 2361 visitors visited the department.

Bacteriology:

This department has been carrying out the Bacteriological examination of water samples from various sources, testing of various types of water purifiers, *in vitro* anti-microbial testing of disinfectants and anti-microbial agents and Lyophilization of bacterial cultures etc. The department also imparts training on Bacteriological examination of water samples to the personnel from various government / semi government organizations.

Chemotherapy:

The main activity of the department has been training of graduate and post-graduate students for M.Sc. and Ph.D. programme. Currently 3 students have completed their project M.Sc. (By Research), in organic chemistry. The department has also started short-term training programme for graduates and post-graduates

Testing:

Testing unit is actively involved in distillation of HPLC grade solvents, standardization of denaturants on GLC and estimation of harmful ingredients in Country Liquor (CL) III samples.

Virology:

The Department of Virology is primarily engaged in the research on viruses like HIV, Influenza and the Rabies Virus. The Department is also one of the WHO surveillance centres for influenza viruses. The department is part of an ICMR-WHO National Influenza Surveillance Project for Human Influenza. A separate Biosafety-3 facility is to be set up with the Department of Virology under the NCDC-World Bank-MoHSW project for pandemic-preparedness for Avian Influenza. It is a National reference centre for rabies and NCDC/WHO centre for viral Hepatitis for Maharashtra and Goa. The Department is also recognised by the State and the Central FDA for Pharmacovigilance studies in humans and animals. The Department is affiliated to the University of Mumbai for MSc and PhD degrees, and currently has 7 PhD students and 1 MSc student carrying out research. The Department also undertakes several training programs at an undergraduate and post-graduate student level. These include the Annual Biotechnology Training Program and the Annual Course in Medical Virology (Viro Vitals). Apart from these, training is also imparted in specific virological techniques such as *in vivo*, *in ovo* and *in vitro* cultivation of viruses, Polymerase Chain Reaction, Animal Tissue Culture and Anti-viral assays.

The department of Virology has numerous state-of-the-art equipment for conducting research in the fields of Virology and Molecular Biology. The laboratories of the department house instruments such as Thermal Cyclers, Real Time PCR, Ultra Pure Water Purification system, -20° and -80°C Freezers, FACSCount, Inverted Microscopes, Refrigerated Centrifuges, Micro plate Readers etc. The department is also involved in various testing activities for commercial and academic purposes. These include diagnosis of viral infections by ELISA and PCR, *in vitro* and *in vivo* cytotoxicity testing and assaying potential anti-viral agents.

Clinical Pathology:

The main activity of this department is diagnostic bacteriology, serology, histopathology and hematology. The department receives clinical samples from E.S.I.S. hospitals, govt. hospitals and public health dispensaries. Anti-microbial testing of commercial synthetic compounds is also done in the department. Two students were registered for M.Sc.

(By Research), in Microbiology. Research projects on anti-malarial and anti-filarial activity by plant extracts were undertaken in the dept. of clinical pathology. The

department participates in short term training programme in biotechnology conducted by the institute.

Training Programme:

The institute has offered short-term training programme in Biotechnology to the students of various colleges. Short-term research projects were also given to the students of biotechnology in the department of virology. A list of recognized teachers at the institute is given in Appendix I. A list of students registered for M.Sc. and Ph.D. degrees and those who successfully completed their thesis and obtained their degrees is given in Appendix II and Appendix III respectively.

Haffkine institute has introduced a course in Basic Clinical Research Management & Regulatory Affairs from Jan 2009 onwards. Three batches of students successfully completed the above course and fourth batch has already commenced from April 2010. A total of 115 students have registered for the Basic Diploma in Clinical Research Management and Regulatory affairs.

ADMINISTRATIVE BODIES:

The Governing Council presided over by the Honourable Minister for Public Health, Govt. of Maharashtra, met twice during the year. Apart from this Executive Council met several times to provide smooth functioning of the institute.

HIGHLIGHTS OF PROGRESS ACHIEVED

1. The Institute has been a Govt. of India recognized Centre for Molecular Diagnosis of Pandemic H1N1 (Swine Flu) since Aug. 2009 and has carried out testing for > 4500 samples.
2. As part of NCDC-WHO Avian Influenza Surveillance project, the 1st BSL-III facility in Mumbai is being setup at the Institute.
3. New Senior Research Fellows (Total - 10) joined the institute & have started research on various aspects of Infectious Diseases & will subsequently register for Ph.D.
4. Training was provided in following courses:

COURSE NAME	STUDENTS ENROLLED
1. Annual Biotechnology Training Programme	492
2. Clinical Research Management	98
3. Viro-Vitals	42
4. Laboratory Management & Internal Audit (as per ISO 15189:2007)	13

5. Five students enrolled for short term projects have completed their projects and eleven students are still carrying out research projects.
6. Research work published and presented in various National & International Journals & Conferences. A total of 16 papers and 11 posters were presented.
7. Revenue generated through Various Training Programs and Testing of products from various Commercial & Academic Institutions in different Departments was Rs. 21,279,000/-
8. Increase in income of institute from Rs.17,479,000/- (in 2008-09) to Rs. 21,279,000/- (in 2009-10), a 12% increase was achieved.

DEPARTMENT OF ZOONOSIS
ANNUAL REPORT (2009-2010)
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Training Activities:

- 1) Training provided to students on Real Time PCR.
- 2) Training provided to students on *In vitro*-malaria parasite culture
- 3) Training provided to students for Animal handling, Different routes of drug Administration and blood collection techniques during Viro-vital from Feb to March 2010.
- 4) Department also participates in annual biotechnology training programme.

Research Activities:

Post-Graduate Student's Research projects: 1 Student

Short term Research Integrated Project:

Name of student : Mr. Apurva Gode
Qualification : M. Tech student
College/ Institution : DY Patil College- Belapur
Research Title : Invitro testing of plant extract against malarial parasite

Sponsored Research studies:

- Research project entitled "Mosquito repellent activity, knockdown and mortality studies against 50 fabric samples" funded by Aditya Birla Science and Technology Centre, Taloja.
- Research project entitled "Isolation of Tylophorin the most potent anti-allergic principal for respiratory allergic diseases from *Tylophora indica* in vitro culture of saomatic cells" funded by DST, Delhi.

Papers presented at Seminars, Conferences & Symposia:

- Suryaji Jadhav, Sahil Kulkarni, Rahul Gosavi, L.S. Patil, Dr Mira Ramaiya, Dr. C. H. Pandit, Dr. Abhay Chowdhary. Evaluation of some indigenous plant extracts for possible insecticidal activity against *Culex quinquefasciatus*. Poster presented at Microcon –XXXIII National conference of Indian Association of

Medical Microbiologists 3-8 Nov.2009.-Department of Microbiology JSS Medical Collage -Mysore.

- Deepak Patil, Ritwik Dahake, L.S.Patil, Dr.R.A.Deshmukh, Dr.Abhay Chowdhary. Molecular and sero - epidemiological study of leptospirosis outbreak in sindhudhurg, Maharashtra in 2006. Poster presented at Microcon - XXXIII National conference of Indian Association of Medical Microbiologists 3-8 Nov.2009.-Department of Microbiology JSS Medical Collage -Mysore.

Research papers published in Scientific Journals:

- Mosquito larvicidal activities of Rotenoids from *Adenthera pavonina* L. against *Aedes aegypti* larvae. Saroj Bapna, P. Chaturvedi, L.S. Patil and A. Chowdhary.
Journal of Phytological Research, Vol.22 (2), 2009. (Accepted January 2010)
- Anti-oxidant activity of alkaloids extract of *Tinospora codefolia* and *Cuscuta leflena*: a comparative study. P. Chaturvedi, Saroj Bapna, and A. Chowdhary.
Journal of Phytological Research. (In press)
- Hypoglycemic activity of *Adenthea poronima* leaves. P. Chaturvedi, Saroj Bapna, and A. Chowdhary. Journal of Phytological Research. (In press)
- Growth inhibitory and larvicial effect of *Adenthera paronina* L. seeds against *Aedes aegypti* mosquito larvae. Saroj Bapna, P. Chaturvedi and A. Chowdhary. Journal of Parasitology and Vector Biology (sent for publication)
- Larvicidal effect of different parts of *Ricinus communis* plant against *Aedes* larvae: a comparative study. Saroj Bapna, P. Chaturvedi and A. Chowdhary.
LIPID (sent for publication)

Organization of Scientific Seminars/Symposia/Conferences: NIL

Testing Activities during 1st April 2009 to 31st March 2010:

Sr. No.	Nature of the sample tested and the Test performed	Total number of sample tested	Testing Charges Earned Rs.
1	Commercial Insecticide Testing	11	9,86,544.00
2	Leptospirosis Testing	6	Govt. funded

Total Income from testing and Sponsored Research Activities:

A total income of Rs.9, 86,544.00/- was earned by the department during the period of 1st April 2009 to 31st March 2010)

DEPARTMENT OF SNAKE FARM

ANNUAL REPORT (2009-2010)

(1st April 2009 to 31st March 2010)

STATEMENT OF VENOM PRODUCTION AND SUPPLY DURING YEAR:

SNAKE & SCORPION	OPENING STOCK IN GM	PRODUCTION IN GM		SUPPLY IN GM		CLOSING STOCK IN GM	TOTAL VALUE IN RS.
		GMS	RATES	FOR SALE GMS	GIFT		
COBRA	145.91	1	10,000	0.15	--	145.76	14,57,600
RUSSEL VIPER	22.775	1	10,000	0.15	--	22.625	2,26,250
KRAIT	0.04	1	14,000	--	--	0.04	560
ECHIS	17.87	1	14,000	--	--	17.87	2,50,180
RED SCORPION	16.313	1	14,000	--	--	16.313	2,28,382
OLD DEAD COBRA	Not weighed 680 ampoules						

1. Total Visitors during 1st April 2009 to 31st March 2010 are 2361.
2. Shri. K.R.Pawar SSOCL I Dept of Snake farm had taken part in Rodent Management Programme during 17th Feb 2010 to 19th Feb 2010 at Andhra Pradesh Rice Research Institute & RARS Maruteru, Andhra Pradesh
3. Projects --- Evaluation of anti rodent properties of pipe with rodent repellent Additives & pipe without rodent repellent Additive.
4. Projects --- Antisnake repellent properties on spices & covers of Cashew nuts.

Snake Survey April 2009 to March 2010.

Sr. No.	Addresses	Survey Date
1.	Mr. Gayle Henriques Water Stone Country Club & Spa Off International Airport Approach Road, Marol, Andheri, (E). Mumbai-59.	Letter dated 17.11.2009 & Survey date 20.11.09
2.	Mr. Gayle Henriques Water Stone Country Club & Spa Off International Airport Approach Road, Marol, Andheri, (E). Mumbai-59.	Letter dated 23.11.2009 & Survey date 24.11.09
3.	Mr. Rajesh Shinde. Chalet Hotel Ltd. Sahar plot, Near Sahar Airport, Airport road, Andheri (E), Mumbai - 59.	Letter dated 3.12.2009 & Survey date 4.12.09
4.	Mugdha D. Karnik Director, University of Mumbai, Fort , Mumbai – 32.	Letter dated 8.12.2009 & Survey date 8.12.09
5.	Mr. Rajesh Shinde. Chalet Hotel Ltd. Sahar plot, Near Sahar Airport, Airport road, Andheri (E), Mumbai - 59.	Letter dated 15.12.2009 & Survey date 16.12.09
6.	Mr. Gayle Henriques Water Stone Country Club & Spa Off International Airport Approach Road, Marol, Andheri, (E). Mumbai-59	Letter dated 14.1.2010 & Survey date 19.1.2010
7.	Smt. Prema V. Ghagare. 124 G, Laxmi Nivas, Worli Village, Mumbai – 30.	Letter dated 5.3.2010 & Survey date 8.3.2010
8.	Smt. Prema V. Ghagare. 124 G, Laxmi Nivas, Worli Village, Mumbai – 30.	Letter dated 22.3.2010 & Survey date 29.3.2010

DEPARTMENT OF BACTERIOLOGY

ANNUAL REPORT (2009-2010) **(1st April 2009 to 31st March 2010)**

DATA OF TESTING STUDIES, CULTURES SUPPLY & TRAINING CONDUCTED DURING APRIL 2009 TO MARCH 2010

A) Testing studies & cultures supply

Sr. No.	Nature of the sample tested And the test performed	Total number Of samples Tested	Testing charges Earned (in Rs)
1	Water samples (Bacteriological examination of Water sample)	53	100000/-
2	Culture supply (Maintenance, preservation & Supply)	86	42644/-
3	Water purifiers of all types (Anti-bacterial efficacy & retention of bacteria by water Purifiers)	18	70000/-
4	Disinfectant (Anti-microbial efficacy testing of various disinfectant samples)	20	318000/-
5	Miscellaneous (Lyophilization, water storage tank, paint & microbial examination of samples etc.	2	15500/-
	Total numbers of samples tested including number of cultures supply and total charges earned (in Rupees) during the year April 2009 to March 2010.	179	546144/- (Excluding service tax)

B) Training: Imparted training to two external students on anti-microbial efficacy testing of disinfectant samples.

DEPARTMENT OF CHEMOTHERAPY

ANNUAL REPORT (2009-2010) **(1st April 2009 to 31st March 2010)**

Research Activity

In the year 2009-2010, 3 students have completed their project for M.Sc. degree and submitted their Thesis in Feb -Mar 2010 as M.Sc. [by Research] students for Mumbai University. The name of the student and the respective projects are as follows:

Sr. No.	Name of the Project	Name of the Student
1.	Synthesis and Study of New Heterocyclic Organic Compounds as Possible Therapeutic Agents.	Yogesh P. Jadhav
2.	Synthesis & Study Of Substituted Benzothiazoles, Triazoles & Pyrazoles As Possible Anti-Microbial Agents.	Vrushali N. Patil
3.	Synthesis & Study Of Some Substituted Oxadiazoles, Triazoles & Thiazolidinones As Possible Anti-Microbial Agents.	Kushal H. Dawane

Achievements:

Four student of chemotherapy department has been awarded M.Sc degree from Mumbai University in period 2009-2010.

Testing:

Standardization of percentage of Alcohol and detection of denaturants like methanol, acetone, crotonaldehyde, pyridine, benzene, diethyl amine, ethyl acetate, diethyl phthalate and ether is carried on **GLC [Gas-Liquid Chromatography]**. From the period of 1st April 2009 to 31st March 2010, **410 samples** were analysed on GLC.

Research Publications During Year 2009-10

1. R.R. Varma, S.V. Athlekar, L.S. Patil, A.S. Bobade, A.S. Chowdhary, Indian Journal of Heterocyclic Chemistry, 18(4) (2009), 415. "Synthesis and Biological Activity of some substituted benzothiazoles"
2. A.V Mayekar, S.V. Athlekar, L.S. Patil, A.S. Bobade, A.S. Chowdhary, Indian Journal of Heterocyclic Chemistry, 18(4) (2009), 417. "Synthesis and biological activity of substituted 4-amino antipyrine analogs"
3. Ameya Yadav, Vrushali Patil, A.S Bobade, SV Athlekar and Abhay Chowdhary, "Synthesis of 2,4-disubstituted thiazole derivatives containing 1,2,4-triazole ring system as antimicrobial agents", Indian Journal of Heterocyclic Chemistry, Vol. 18., July-Sept(2009).
4. Ameya Yadav, Vrushali Patil, A.S Bobade, L.S. Patil, SV Athlekar and A.S. Chowdhary, 'Synthesis and antimicrobial activity of some benzimidazolyl pyrazolone derivatives', Asian Journal of Research in Chemistry, Vol. 2, Issue 4, Oct-Dec 2009.
5. Vrushali Patil, Ameya Yadav, A.S Bobade, L.S. Patil, SV Athlekar and A.S. Chowdhary, 'Synthesis and biological evaluation of new benzothiazole derivatives.' Asian Journal of Research in Chemistry, Vol. 2, Issue 4, Oct-Dec 2009.
6. Y.S. Rane, R.R. Varma, L.S. Patil, S.V. Athlekar, A.S. Chowdhary, A.S. Bobade, "Synthesis and Biological Activity of 5-substituted and 5,6-disubstituted-2-(N, N-Dialkyl Thiocarbamido) Benzimidazoles" Asian Journal of Research in Chemistry, Vol. 3, Issue 2, Apr-Jun 2010,
7. Y.S. Rane, R.R. Varma, L.S. Patil, S.V. Athlekar, A.S. Chowdhary, A.S. Bobade, "Synthesis and Antimicrobial Evaluation of Benzimidazole Analogs" Asian Journal of Research in Chemistry, Vol. 3, Issue 2, Apr-Jun 2010,
8. Y.S. Rane, R.R. Varma, L.S. Patil, S.V. Athlekar, A.S. Chowdhary, A.S. Bobade, "Synthesis and Antimicrobial Activity of 5-substituted-2-(1-H-Benzimidazole) sulfonamides" Asian Journal of Research in Chemistry, Vol. 3, Issue 2, Apr-Jun 2010,
9. Vrushali N.Patil, Ameya G.Yadav, A.S.Bobade*, S.V.Athlekar, L.S.Patil and Abhay Chowdhary. 'Synthesis and evaluation of new Benzothiazole derivatives as potential Anti-Microbial agents'. Research Journal in Pharmaceutical Chemistry, Vol. 3(2), March-April 2010.
10. K. H. Dawane, Y. P. Jadhav, S.V. Athlekar, L. S. Patil, A. S. Bobade, A. S. Chowdhary. "Synthesis and Biological activity of some substituted 4-Thiazolidiones", Indian Journal of Heterocyclic Chemistry, (in press).
11. Y. P. Jadhav, K. H. Dawane, S.V. Athlekar, L. S. Patil, A. S. Bobade, A. S. Chowdhary. "Synthesis and biological activity of some cinnolinothiazole derivatives" Indian Journal of Heterocyclic Chemistry, (in press).

TESTING UNIT
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Prime function of the Testing unit is to conduct various tests on samples submitted by State Excise Department of the Government of Maharashtra.

AIMS AND OBJECTIVES:

1. To analyse the Alcoholic Beverages like Indian Made Foreign Liquors (I.M.F.L) , Beer, Toddy, Country liquor, etc.
2. To analyse the Denaturants (such as Benzene, Acetone, Crotonaldehyde, Diethylphthalate, Ethyl-Ether, Light Caoutchoucine, Pyridine base, Toluene, Diethylamine), Bitterants(Denatonium Sachharide & Denatonium Benzoate), Colourants(Crystal Violet & Methelene Blue) to be added for preparing Ordinary Denatured Spirit (O.D.S.) and Special Denatured Spirit (S.D.S.) sent by State Government of Maharashtra.
3. To analyse the samples of Special Denaturant Spirit (S.D.S) , Ordinary Denatured Spirit (O.D.S.) , French Polish , Thinner, Ganja, Bhang etc. sent by State Government of Maharashtra.
4. To extend the expertise to State Excise Department of the Government of Maharashtra in respect of above referred activities.

TESTING UNIT
1st April 2009 to 31st March 2010.

Sr. No.	Type of Sample	Number of Sample Received	Testing Charges Received (Rs.)
1.	CL – I	15,328	22,99,200/-
2.	CL – III	5655	11,31,000/-
3.	TDL	2918	29,18,000/-
4.	TPE	3609	14,43,600/-
5.	I.M.F.L./TL	7237	21,71,100/-
6.	TCL	52	35,700/-
7.	TFS	08	3,100/-
8.	TAC	105	1,05,000/-
	Total	34,912	1,01,06,700/-

DEPARTMENT OF VIROLOGY
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Training Activities:

The following staff members of the department were recognized guiding teachers at the University of Mumbai for the respective degrees and subjects mention below during the period of reporting.

Sr. No.	Name of the Guiding Teacher	Degree & Subject for which Recognized by the University of Mumbai	Total Intake Capacity 2007-2008	Total Number of Students registered as on 31-03-2010
1.	Dr. Abhay Chowdhary	M.Sc. & Ph.D., Microbiology	10	M. Sc (01)
2.	Dr. (Mrs.) R. A. Deshmukh	M.Sc. & Ph.D., Microbiology & Applied Biology	10	03

1. The Annual Biotechnology Training Program was conducted in 5 batches from 31st March 2009 until 12th June 2009. Two Hundred Twenty (220) B. Sc, M. Sc and B. Tech Students were enrolled and a total revenue of Rs. 4, 40,000/- was generated.
2. The Department conducted the Basic Biotechnology Training Program from 26th October 2009 until 30th October 2009. For this course, 20 enrolments were made and revenue of Rs.60, 000/- was generated.
3. The Department also conducted "Viro-Vitals", Annual Course in Medical Virology for M.Sc and M.D. Students of University of Mumbai and Maharashtra University of Health Sciences, from 27th January 2010 until 4th February 2010. Twenty Five candidates were enrolled and a revenue of Rs. 50,000/- was generated.
4. Five Post-Graduate Students pursuing M. Sc degree under Mumbai University completed their Short Term Research Internship Program during this period.

List of students completing Post Graduate studies and obtaining degrees of the Mumbai University, during the period 2008-2009

Sr. No	Name of the Students & [Guiding Teacher]	Degree Subject (Year of Passing)	Title of Thesis
1	Priya Bangera [Dr. (Mrs.) R. A. Deshmukh]	PhD (2009)	Role of Co-receptors in HIV Pathogenesis in Indian Cohorts
2	Anuya Rege [Dr. (Mrs.) R. A. Deshmukh]	PhD (2009)	<i>In vitro</i> testing of Anti-HIV properties of Mangrove & some other medicinal plants.

Research Activities: (1st April 2009 to 31st March 2010)

Post – Graduate Students Research Projects:

1. Study of Morbidity and Mortality trends in HIV associated Wasting Syndrome.
2. Study of Drug-Resistant HIV-1 in the patient cohort in Mumbai.
3. Study of Seroprevalence of Leptospirosis using Conventional & Modern Diagnostic tools.
4. To study the prevalence and characterization of Dengue Virus in and around Mumbai

Short Term Research Internship Program

1. Assessment of Anti-Influenza Activity of Mangroves and associated plants
2. *in-vitro* assessment of anti-cancer activity of *Moringa olifera* and *Agastache rugosa*
3. *in-vitro* assessment of anti-cancer activity of *Acacia catechu*
4. *in-vitro* anti-influenza activity in *Begonia semperflorens*

Sponsored Research & Testing Studies:

Anti-Influenza Activity was evaluated for various products manufactured by the following commercial organizations:

1. M/s. CLAIMS Pvt. Ltd.; In-vitro anti-influenza activity of Hand Sanitizer: Revenue generated: Rupees Thirty Thousand Only
2. M/s. Septodont Healthcare India Pvt. Ltd.; In-vitro anti-influenza activity of Antiseptic for Hands: Revenue generated: Rupees Thirty Thousand Only

Guest Lectures:

Dr. Abhay Chowdhary, Head, Department of Virology & Director, Haffkine Institute, delivered guest lectures the following scientific meetings during the year 2009–2010

Sr. No.	Date	Name of the Institution	Guest Lectures delivered / Conferences attended
1.	05.04.2009	India Habitat Centre, New Delhi.	Participated in the Consultative Meeting – "Indian Medical Professional Associations' Coalition against Tuberculosis (IMPACT).
2.	17.04.2009	Health & Family Welfare Training & Research Centre, Mumbai.	Participated as 'Resource Person' for PG Certificate Course in Hospital Management and delivered a talk on "Hospital Laboratory Services".
3	25-26.04.2009	NEMICROCON 2009, Guwahati.	Participated in the 2 nd North East Conference of Medical Microbiologists as a Guest Speaker and delivered a talk on "Laboratory Management of Human Influenza".
4	05.05.2009	Joshi Research Institute, Mumbai.	Participated in the conference on "New Horizon in the treatment of" AIDS and delivered a lecture on "Introduction & Research Experiences".
5	09.05.2009	KLE University, Belgaum	Participated as 'Resource Person' for workshop on "Sterilization and Disinfection Techniques in the Hospital" and delivered a talk on "Sterilization / Disinfection Techniques in CSSD".
6	14.06.2009	Association of the Hospital & Practicing Biochemists & Medical Technologists, Mumbai.	Participated in the workshop on "Influenza A (H1N1)" and delivered a talk on "Laboratory Detection of Influenza A (H1N1)".
7	25-27.06.2009	National Institute of Communicable Diseases, Delhi.	Participated in the workshop on "Strengthening and Initiation of Influenza A H1N1 under the AI Lab Network".
8.	11-13.08.2009	National AIDS Control Organization, New Delhi.	Attended the consultative meeting of the experts from WHO, CDC and other eminent Microbiologists
9.	07-10.09.2009	Mizoram, Tripura and Manipur	Attended the programme on "Assessment & Evaluation of NACO State Reference Laboratories (SRL's) for HIV testing" as a Lab. Assessor.
10	15-18.09.2009	Vishakhapatnam, Kakinada, Guntur, Vijaywada & Andhra Pradesh	Attended the programme on "Assessment & Evaluation of NACO State Reference Laboratories (SRL's) for HIV testing" as a Lab. Assessor.

11	01.10.2009	M.D. College, Mumbai.	Invited as Chief Speaker to deliver a talk on "Swine Flu".
12	11.10.2009	Indo-French Technical Association, Mumbai	Delivered a lecture on "Swine Flu".
13	22.11.2009	Indian Pharmaceutical Association, Mumbai	Invited as Chief Guest to attend the 48 th National Pharmacy Week. Delivered keynote address.
14	03-08.11.2009	JSS Medical College, Mysore.	Attended the 33 rd National Conference of IAMM. Delivered guest lecture in Pre-conference workshop and CME on 4 th & 5 th November respectively. Delivered guest lecture in conference on 6 th November & in Symposium on 7 th November. Elected as President of IAMM for 2009-2010.
15	11-12.12.2009	SRM University, Chennai	Attended 7 th National Conference of IAPM and delivered a key note address.
16	22.12.2009	SNDT Women's University, Mumbai.	Invited as a 'Guest of Honour' to attend the 'CLINITEK 2009 Conference' and delivered a key note address.
17	23-24.12.2010	DST, New Delhi	Attended 10 th Meeting of the PAC in Health Sciences.
18	15.02.2010	National Institute of Immunohaematology, Mumbai.	Invited as a 'Chief Guest' on the occasion of the Foundation Day of NII and also attended Dr. H.M. Bhatia Memorial Oration -2010.
19	19.02.2010	Federation of Indian Chambers of Commerce & Industry, DBT, New Delhi.	Attended the 'CV Raman International Fellowship for African Researchers' programme.
20	06.03.2010	Bharati Vidyapeeth Deemed University, Pune	Participated in the Seminar on "Diagnostic Techniques" and delivered a lecture on 'PCR – A Diagnostic Tool'.
21	07.03.2010	Dr. Palep's Medical Research Foundation, Mumbai	Invited as a 'Co-Chairperson' for the Seminar on "Tadvidya Sambasha Ayurveda VI".
22	14.03.2010	MUHS, Nashik	Participated for the Dean's Consultation on "Issues and Challenges in Health Sciences Education".
23	19-21.03.2010	Central Agricultural Research Institute, Port Blair.	Attended Fourteenth Annual Group Meeting – AINP on Rodent Control.

Trainings & Workshops Attended:

1. Ms. Amita Patil, Sr. Technician and Mr. Sandeepan Mukherjee, S. R. F, attended a workshop on “Hands on Laboratory Training on Molecular Detection of Novel Influenza A H1N1” at the National Institute of Communicable Diseases, New Delhi from 25th June 2009 to 30th June 2009.
2. Mr. Sandeepan Mukherjee, S. R. F. attended a “Research Methodology Workshop” at NIMHANS, Bangalore from 3rd December 2009 until 5th December 2009.
3. Mr. Sanddepan Mukherjee, Scientific Officer (CI-II) was selected for the “ICGEB-IUBMB Workshop on Human RNA Viruses” from 10th February 2010 until 12th February 2010 at ICGEB, New Delhi.
4. Deepak Patil, S. R. F. and Soumen Roy, J. R. F, attended a training workshop on Virus LIMS, at NIV Pune from 24th March 2010 until 25th March 2010.

Papers Presentations:

The following papers were presented at various National Conferences during the period:

1. S. Mukherjee, R. A. Deshmukh, A. Chowdhary. Oxidative Stress in HIV/AIDS Patients. Presented at HIV Science 2009, 28th – 29th September 2009 at YRG Care, Chennai.
2. Ritwik Dahake, Rohan N Kesarkar, Sandeepan Mukherjee, Dr. R A Deshmukh, Dr. Abhay Chowdhary, Goldie Oza, Sunil Pandey & Dr. Madhuri Sharon. Preliminary Studies on the Potential Anti-HIV Activity of Gold and Silver Nanoparticles and Carbon Nano-Beads. Presented at ‘Microcon 2009’, 3–8 November 2009; JSS Medical College, Mysore, Indi
3. Dr. Abhay Chowdhary, Ritwik Dahake, Sandeepan Mukherjee, Soumen Roy, Deepak Patil, Arunagiri Subramanian, Devanshi Gohil, Kanchan Kathalay, Rahul Chavan, Rohan Kesarkar, Shraddha Mehta, Amita Patil, Sujata Phalke, Lavina D’Costa, Shreewardhan Rajopadhye, Sheetal Rai, Suvarna Joshi, Rahul Gosavi, Sahil Kulkarni. Clinico-Epidemiological Perspectives on the 2009 Novel H1N1 Influenza Pandemic: Mumbai Region. Presented at ‘Microcon 2009’, 3–8 November 2009; JSS Medical College, Mysore, India.
4. Sandeepan Mukherjee, Ritwik Dahake, Soumen Roy, Deepak Patil & Dr. Abhay Chowdhary. Co-Existence of Novel H1N1 Influenza A with Seasonal Influenza A in the Population of Mumbai during the 2009 Influenza Pandemic. Presented at ‘Microcon 2009’, 3–8 November 2009; JSS Medical College, Mysore, India.
5. Deepak Patil, Ritwik Dahake, L S Patil, Dr. R A Deshmukh, Dr. Abhay Chowdhary. Molecular and Sero-Epidemiological Study of Leptospirosis Outbreak in Sindhudurg, Maharashtra in 2006. Presented at ‘Microcon 2009’, 3–8 November 2009; JSS Medical College, Mysore, India.
6. V Suresh Gupta, Shraddha Mehta, Arunagiri Subramanian, Sahil Kulkarni, Sandeepan Mukherjee, Dr. R. A. Deshmukh, Dr. Abhay Chowdhary. Role of TNF- α and IL-6 in Morbidity and Mortality associated with HIV/AIDS. 18th – 19th December 2009, Presented at IMMUNOCON 2009, at NIMHANS Bangalore.
7. V Suresh Gupta, Arunagiri Subramanian, Shraddha Mehta, Sahil Kulkarni, Sandeepan Mukherjee, R. A. Deshmukh, Dr. Abhay Chowdhary. Role of β -2 Microglobulin in Prognosis of HIV/AIDS. 18th – 19th December 2009, Presented at IMMUNOCON 2009, at NIMHANS Bangalore.
8. Sandeepan Mukherjee, Sheetal Rai, Sahil Kulkarni, Shraddha Mehta, Arunagiri Subramanian, Dr. R. A. Deshmukh, Dr. Abhay Chowdhary. Interplay of TNF- α , Superoxide Anion (SOA) and Apoptosis in HIV/AIDS Patients. Presented at IMMUNOCON 2009, 18th – 19th December 2009, at NIMHANS Bangalore.

Testing:

Sr. No.	Name of the Test	Total Test	Testing Charges (Rs.)
1	H1N1 Testing	4706	Free
2	Anti-Influenza Activity of Disinfectant	3	65,000/-

Achievements:

1. Dr. Abhay Chowdhary, Director & Head, Department of Virology was elected the President of Indian Association of Medical Microbiologists (IAMM) for the year 2009 – 2010.
2. Dr. Abhay Chowdhary, Director & Head, Department of Virology was selected as a member of the Expert Core Group of NACO for strengthening National & State Referral Laboratories for HIV/AIDS from 2009.

DEPARTMENT OF CLINICAL PATHOLOGY
ANNUAL REPORT (2009-2010)
(1st April 2009 to 31st March 2010)

Research

One research student has been enrolled for M.Sc. (Microbiology) by research in the department & three students for short term project work in the department of Clinical Pathology under the guidance of Dr.S.V.Athlekar. Department will participate in the various training programme.

Research Projects in the Clinical Pathology Department

Assessment of antibacterial activity with special emphasis on anti-tubercular activity of selected plant extracts.

The objective of the experiment is to assess the antibacterial activity of the plant extracts. A special emphasis will be given so as to assess the anti-Mycobacterial activity of these extracts. Extracts of medicinal plants and spices are obtained using the soxhlet apparatus. Rotavapour will be further use to evaporate the solvent. These extracts will be tested against two Gram –positive and two Gram-negative micro-organisms. Phytochemical analysis and HPTLC will be carried out. The extracts will be tested against standard strain of Mycobacterium tuberculosis HRv37. Cytotoxic assay will be also performed for the cytotoxic concentration of the plant extracts.

Testing Activities

The department receives clinical specimens from various hospitals and general nursing homes for routine investigations.

The services offered cover the following areas:

1. Diagnostic bacteriology and serology.
2. Antimicrobial testing of commercial synthetic compounds.
3. Routine haematological examination.
4. Histopathological examination of surgical specimens and biopsies.
5. Cytology of various body fluids.

SAMPLES RECEIVED FROM HOSPITALS

Year	No. of Samples	Testing charges
2009-2010	3468	1,82,696/-

DEPARTMENT OF BIOCHEMISTRY
ANNUAL REPORT (2009-2010)
(1st April 2009 to 31st March 2010)

Training Activities:

- 1) Training provided to students on Semi automated biochemistry analyzer.
- 2) Training provided to students on Urine stone analysis.
- 3) Training provided to students on Soxhlet Apparatus and phytochemical analysis of plant extracts.
- 4) Department also participates in annual biotechnology course.

Research Activities:

Post-Graduate Student's Research projects: 2 Students.

Short term Research Integrated Project:

Name of student : Mr. Pushkar Athlekar.
Qualification : M. Tech student
College/ Institution : DY Patil College- Belapur
Research Title : Hypolipidemic activity of plant extracts on rats.

Name of student : Ms. Monu Ojha.
Qualification : M. Tech student
College/ Institution : DY Patil College- Belapur
Research Title : Hepatoprotective activity of plant extracts on rats.

Papers presented at Seminars, Conferences & Symposia:

- ***Sandeepan Mukherjee, Sheetal Rai, R.A. Deshmukh, Abhay Chowdhary. Interplay of TNF-alpha, superoxide anion & apoptosis in HIV positive subjects. Presented at Immunocon 2009, Bangalore.***

Organization of Scientific Seminars/Symposia/Conferences: NIL

Testing Activities during 1st April 2009 to 31st March 2010:

Sr. No.	Nature of the sample tested and the Test performed	Total number of Sample tested	Testing Charges Earned Rs.
1	Urine stone Analysis	85	7125.00/-
2	Blood glucose (Rs. 70/-)	4	280/-
3	Phytase Enzyme Assay	2	10, 000/-
4	Annual medical check up of HBPCCL Employees.(Rs.620/- per Employee) (Tests: Glucose, SGOT, SGPT, Cholesterol, triglycerides,BUN, Uric acid, Bilirubin, Creatinine).	337	2, 08,940/-
		Total	2, 26,345/-

Total Income from testing and Sponsored Research Activities:

A total income of Rs. 2, 26,345/- was earned by the department of biochemistry during the period of 1st April 2009 to 31st March 2010.

TOXICOLOGY DEPARTMENT
ANNUAL REPORT (2009-2010)
(1st April 2009 to 31st March 2010)

The Department of Toxicology was actively engaged during the period under report in toxicology testing of commercial samples referred by various industries and institutes. The samples included drugs and related products, cosmetics, chemicals. The details of the tests undertaken are shown as below.

Appendix I

Sr. No.	Type of test	No. of sample tested	Testing charges Earned Rs.
1	Acute oral toxicity in mice	4	80,000/-
2	Primary skin irritation in rabbits	2	40,000/-
3	Primary skin irritation in mice	1	10,000/-
4	Mucus membrane irritation in rabbits	1	10,000/-
5	Intracutaneous sensitization in guinea pigs	1	7,000/-
	Total	9	1,47,000/-

Appendix II

A) Acute toxicity in mice

Name of the sample	Route	Results		
		Lower Limit Mg/kg	LD50 Mg/kg	Higher Limit Mg/kg
Zycrobial	Oral	8883	12600	17871
Ginsol Green	Oral		> 6000	
Poly Urethane	Oral		> 50 ml/kg	
Diamond dioxide	Oral		> 50 ml/kg	

B) Primary skin irritation in Rabbits

Name of the sample	Results
Zycrobial	Mild Irritation
Odomos	No Irritation
Mosfree	No Irritation

C) Mucous membrane irritation in Rabbits

Name of the sample	Results
Zycrobial	Mild Irritation

D) Intracutaneous sensitization in guinea pigs

Name of the sample	Results
Zycrobial	No sensitization

ANNUAL REPORT OF THE LIBRARY
ANNUAL REPORT (2009-2010)
(1st April 2009 to 31st March 2010)

The aim and objective of the Haffkine Institute Library has been to collect, organize, search and retrieve information in the areas of prime activities of the institute i.e. biomedical and allied subjects with a special reference to the communicable diseases.

The library subscribed to 70 specialized scientific journals and added 15 new books in the various fields of research. With this, the total collection of library has grown to 10536 books and 26961 back volumes of journals.

The library continued to provide online scientific search and retrieval facilities to its staff and students. Considering the need and urgency of the requirement, the library continued to deliver documents by post / courier to the distant users who could not come to the library.

The library made available different publications from other libraries to the staff and student of this institute for about 9 times on the basis of Inter library cooperation. Similarly 12 publications available in our library were made available to other libraries, in the current year.

The library regularly imparted induction and orientation training to outside visitors and new students of the institute on the library usage and conducting the literature searches effectively.

HAFFKINE INSTITUTE FOR TRAINING, RESEARCH AND TESTING

LIBRARY 2009-2010

YEAR	2009-2010
Books Added	15
Journals Bound	72
Total Titles	10536
Total bound volumes of journals	26961
Journal Subscribed	70
Inter Library Loan:	
Loaned Out	12
Borrowed in	9
Number of times the library collection was consulted by the:	
Outside visitors	1161
Staff and Students	786

Appendix I

LIST OF RECOGNISED POST-GRADUATE TEACHERS & TEACHING FACULTY

Sr No	Name	Designation	Course recogzd for	Subjects	University
1	Dr.A. S. Chowdhary. M.D.,DHA,DM Virology, FIMSA.	Director	M.Sc. Ph.D. Ph.D	Microbiology Appl.Biology Microbiology Appl.Biology Medical Microbiology Appl.Biology	Mumbai University " " MUHS "
2	Shri. L. S. Patil. M.Sc.,D.M.L.T.,D.B.M.	Assistant Director	M.Sc.	Organic Chemistry	Mumbai University
3	Dr.S. V. Athlekar M.Sc., Ph.D.	Sr. Scientific Officer & I/C Training.	M.Sc.	Microbiology	Mumbai University
4	Dr. A. S. Bobade M.Sc., Ph.D.	Sr. Scientific Officer	M.Sc., Ph.D	Organic Chemistry	Mumbai University
5	Dr.Mrs.R.A.Deshmukh M.D., Ph.D.	Visiting Scientist (1/8/08 to 31/7/09)			
6.	Dr. Ajitha Mehta MD, DCP.	Visiting Scientist (1/6/08 to 31/5/09)			
7	Dr. Mrudula A.Phadke MD,DCH,FIAP,MR.CP(UK) FRCPH(Hon), MNAMS	Visiting Scientist (23/12/09 to 22/12/10)			
8	Dr. Usha Sharma MD(Pharmacology), Ph.D. Medicine	Visiting Scientist (1/10/09 to 30/9/10)			
9	Dr. Naresh. Tongey Ph.D.(Pharma)	Visiting Scientist(1/8/09 to 31/11/11)			
10	Dr. Ravikant Raynade Ph.D.(Virology)	Visiting Scientist (1/8/09 to 31/7/10)			
11	Dr. Rajas Warke Ph.D.(Biomedical Scie.)	Visiting Scientist (1/8/09 to 31/7/10)			
12	Dr. M. A. Indap Ph.D.(Biochemistry)	Visiting Scientist (1/12/09 to 22/12/2010)			

Appendix II

List of students registered for M.Sc./Ph.D.

Sr. No.	Name of student	Subject	Degree	Year of Registrn.
1.	Ms. Kanchan Milind Kathalay	Mircrobiolgy	M.Sc.	08/09/2009
2.	Ms. Sushma Sharad Taishete	Mircrobiolgy	M.Sc.	12/01/2010
3.	Shri L. S. Patil	Applied Biology	Ph.D.	01/01/2010

Appendix III

List of students who obtained M.Sc/Ph.D.

Sr. No.	Name of student	Subject	Degree	Year of Passing
1.	Mr. Ameya G. Yadav	Organic Chemistry	M.Sc.	02/07/2009
2.	Mr. Rajeev R. Varma	Organic Chemistry	M.Sc.	11/12/2009
3.	Mr. Yogesh S. Rane	Organic Chemistry	M.Sc.	30/10/2009
4.	Ms. Amita Mayekar	Organic Chemistry	M.Sc.	23/09/2009
5.	Ms. Priya N. Bangera	Microbiology	Ph.D.	23/06/2009
6.	Ms. Anuya A. Rege	Microbiology	Ph.D.	23/04/2009

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