ANNEXURE

IQAC Report – Details, Part B

Department of Biochemistry
July 2014 – June 2015

Criterion – I

1. Curricular Aspects

1.1 Details about Academic Programmes

Ph.D. –Ph.D in Biochemistry – 5 years programme; Two courses in maximum of two semesters to be qualified by eligible students.

PG – M.Sc. in Biochemistry – 2 years programme; 4 semesters

Interdisciplinary -M.Phil. Biotechnology jointly with Departments of Genetics, Microbiology, Plant Molecular Biology and Biotechnology; 1.5 years programme

1.2. Feedback from stakeholders

a. The feedback of the faculty on curriculum is sought during the departmental meetings which are held almost every month. This is taken into account while the course revision is undertaken.

b. The feedback of the students on curriculum is undertaken during discussions with the students especially during the project presentation by the final year students **who** are more mature and are ready to give **significant** advice based on their experience to improve the syllabus and teaching methodology. This is taken into consideration during the curriculum revision.

c. The alumni who are employed to teach Biochemistry course at undergraduate level in the Delhi University colleges regularly give feedback for improvement/revision of the curriculum.

Feedback is mostly sought manually in face-to-face discussions to help the stakeholders justify their position on issues and probable solutions. The open discussion helps find a better solution to problems and promotes frankness, honestly and the immediate solution to problems. Our curriculum has seen inclusion of new papers or deletion **of** existing papers based on student feedback. We include specific modules for which the demand is there.

Our course also secures very positive feedback on its strength of academic excellence and is considered one of the best courses in Biochemistry nationwide.

Criterion – II

2. Teaching, Learning and Evaluation

2.1 Total No. of permanent faculty – 09

Assistant Professor - (1) Dr. Suneel Kateriya (2) Dr. Garima Khare
Associate Professor – (1) Dr. Amita Gupta
Professors - (1) Dr. Anil K Tyagi (2) Dr. Vijay K Chaudhary (3) Dr. Prahlad C Ghosh (4) Dr. Debi P Sarkar (5) Dr. Suman Kundu and (6) Dr. Alo Nag

2.5 Faculty participation in conferences and symposia

International Conferences – <u>Attendance and Presentation of Papers</u>

1. Prof. Anil K. Tyagi - International Symposium on "Probiotics – From Bench to Community", New Delhi, 7th& 8th March 2015. Acted as Chief Guest and delivered a talk.
2. Prof. Anil K. Tyagi - 6th Symposium on "Frontiers in Molecular Medicine" JNU, New Delhi and delivered a talk, 13th-15thFebruary 2015.
3. P. Vineel Reddy, RupangiVermaPuri, Priyanka Chauhan, RitikaKar, **Akshay Rohilla**, Aparna Khera and **Anil K. Tyagi**. (2014). Disruption of mycobactin biosynthesis leads to attenuation of *Mycobacterium tuberculosis* for growth and virulence. Posted presented at International Confernece and workshop on "Recent Advances in Structural Biology and Drug Discovery", October 9-11, 2014 held at IIT, Roorkee. **Best poster award.**
4. NitikaMukhi, SonaliDhindwal, Sheetal Uppal, Pravindra Kumar, **Suman Kundu** and Jagreet Kaur (2014) "Crystallographic Structures of Arabidopsis plant hemoglobins reveal novel features", XVIII International Conference on Oxygen-Binding and Sensing Proteins, 6th-10th July,2014, University of Sheffield, Sheffield, United Kingdom. (***Best Poster***)
5. Amit Kumar, Suneel Kateriya, **Suman Kundu** (2014) "Hemoglobins from extremophilic and mesophilic algae: a comparative study", XVIII International Conference on "Oxygen-binding and sensing proteins", 6th-10th July, 2014, University of Sheffield, Sheffield, United Kingdom. (***Selected for Oral presentation***)
6. Sanjay Kumar Dey, ToyanjiJoseph, Santosh Kumar, A. Kamaladevi, Nabanita Sarkar, Surajit Sarkar, K. Balmurugan, B.K. Thelma and **Suman Kundu** (2014) "Biochemical and Biophysical validation of new inhibitors identified through rational structure based design against Dopamine-beta-hydroxylase to combat hypertension", the International Society for Hypertension New Investigator Symposium on Hypertension and Cardiovascular Disease 2014, 8th September, 2014, San Francisco, USA.
7. Sanjay Kumar Dey, ToyanjiJoseph, Santosh Kumar, A. Kamaladevi, Nabanita Sarkar, Surajit Sarkar, K. Balamurugan, B.K. Thelma and **Suman Kundu** (2014) "Identification And Validation of New Inhibitors Based on Rational Design against

Dopamine-β-hydroxylase To Combat Hypertension". High Blood Pressure Research Scientific Sessions 2014 of the American Heart Association, 9th-12th September, 2014, San Francisco, USA.

8. NitikaMukhi, SonaliDhindwal, Sheetal Uppal, Pravindra Kumar, **Suman Kundu** and Jagreet Kaur (2014) "New Insights into the function of Arabidopsis plant hemoglobins from their Crystallographic Structures", Indo-US Conference and Workshop on " Recent Advances in Structural Biology and Drug Discovery", 9th-11th October,2014, Indian Institute of Technology, Roorkee, India.

9. Richa Arya, Monica Sundd, **Suman Kundu** (2014) "Structural and Biochemical Characterization of Acyl-coenzyme A Binding Proteins (ACBP) of Leishmania major to Facilitate Therapeutic Application against Leishmaniasis", Indo-US Conference and workshop on Recent advances in Structural Biology and Drug Discovery, 9th-11th October, 2014, Indian Institute of Technology, Roorkee, Uttarakhand, India.

10. Sanjay Kumar Dey, ToyanjiJoseph, Santosh Kumar, A. Kamaladevi, Nabanita Sarkar, Surajit Sarkar, K. Balmurugan, B.K. Thelma and **Suman Kundu** (2014) "Structure based lead identification and validation against Dopamine-β-hydroxylase to combat cardiovascular diseases", Indo-US International Conference/Workshop on Recent Advances in Structural Biology and Drug Discovery, 9th-11th October, 2014, Indian Institute of Technology-Roorkee, Roorkee, India.

11. **Suman Kundu**, S. Durai and K. Balamurugan (2014) "Proteomic investigation of *Caenorhabditis elegans* subjected to bacterial infection: Implication of unfolded protein response pathway", ***Invited Talk***, 6th Annual Meeting of the Proteomics Society of India and International Proteomics Conference on "Proteomics from Discocery to Function", 7th-9th December, 2014 in Indian Institute of Technology (IIT) Bombay, Mumbai, India.

12. Invited to deliver a lecture on *"Hijacking host SUMOylation machinery, a strategy for HPV oncogenesis"* in the International Symposium Current Advances in Radiobiology, Stem Cells and Cancer Research, 19th-21st Feb, 2015, JNU, New Delhi. **(Dr. Alo Nag).**

13. **Neha Jaiswal,** Pradeep Singh Cheema, Rince John, Vaibhav Chand and Alo Nag(2015).*"Viral oncoprotein HPV16E7 perturbs SUMOylation of FoxM1 to induce oncogenesis"* at International Symposium on 'Current Advances in Radiobiology, Stem cells and Cancer Research 2015' held from Feb 19-21, 2015 at Jawaharlal Nehru University, New Delhi, India. (First author received **Best poster award**)

14. **Neha Jaiswal**, Rince John, Vaibhav Chand and Alo Nag (2015) *"Modulation of FoxM1 SUMOylation by high risk HPV and its significance in cervical cancer"*in '4th World congress on Cancer Science and Therapy 2014' held during 20th -22nd October, 2014 in Chicago, USA.

International Conferences – <u>Resource Person</u>

None

National Conferences – <u>Attendance and Presentation of papers</u>:

1. **Prachi Nangpal,** RitikaKar and Anil K. Tyagi. (2015). Boosting BCG vaccinated guinea pigs with recombinant MVA expressing □-crystalline gene of *M. tuberculosis*augments the protection imparted by BCG against tuberculosis. Poster presented at 5th National Science Day Symposium, 27th-28th February 2015 held at University of Delhi South Campus, New Delhi.

2. **Akshay Rohilla,** GarimaKhare and Anil K. Tyagi (2015). Identification of inhibitors against Iron Dependent Regulator (IdeR) by structure based high throughput virtual screeing disruption of mycobactin biosynthesis. Poster presented at 5th National Science Day Symposium, 27th-28th February 2015 held at University of Delhi South Campus, New Delhi.

3. **Swati Singh,** GarimaKhare and Anil K. Tyagi, (2015). Identification of biotin biosynthesis inhibitors for inhibition of *Mycobacterium tuberculosis*. Poster presented at 5th National Science Day Symposium, 27th-28thFebruary, 2015, University of Delhi South Campus, New Delhi. **Best poster award.**

4. **Suman Kundu**, NitikaMukhi, SonaliDhindwal, Sheetal Uppal, Pravindra Kumar, Jagreet Kaur (2014) "Plant Hemoglobin Structures from *Arabidopsis thaliana* Exhibit Novel Features Supporting Non-Classical Functions", ***Invited Talk***, 43rd National Seminar on Crystallography, CSIR-Central Drug Research Institute Lucknow, November 12th-14th, 2014.

5. **Suman Kundu** (2014) "Engineering myoglobin to prevent heme dissociation: A step towards production of stable hemoglobin based blood substitute", ***Invited Talk***, BioWorld-2014:Protein Structure and Function, Kusuma School of Biological Sciences, Indian Institute of Technology, New Delhi, December 12th-14th, 2014.

6. Richa Arya, Ambrish Kumar, Monica Sundd, **Suman Kundu** (2014) "Biochemical and Biophysical Characterization of a 4' Phosphopantetheinyl transferase (PPTase) from *Leishmania major*", Bioworld-2014: Protein Structure and Function, 12th-14th December, 2014, Indian Institute of Technology, New Delhi, India.

7. Sanjay Kumar Dey, ToyanjiJoseph, Santosh Kumar, A. Kamaladevi, Nabanita Sarkar, Surajit Sarkar, K. Balamurugan, B.K. Thelma and **Suman Kundu** (2014) "Identification and validation of small molecule antagonists of Dopamine-β-hydroxylase to combat hypertension", Bio-World 2014: Protein Structure and Function, 12th-14th December, 2014, Indian Institute of Technology-Delhi, New Delhi.

8. Sanjay Kumar Dey, ToyanjiJoseph, Santosh Kumar, A. Kamaladevi, Nabanita Sarkar, Surajit Sarkar, K. Balamurugan, B.K. Thelma and **Suman Kundu** (2015) "Experimental validation of new inhibitors identified through rational structure based design againstDopamine-β-hydroxylase to combat cardiovascular diseases", Cardiovascular Research Convergence 2,17th January, 2015, All India Institute of Medical Sciences, New Delhi, India.(***Best Poster Award***).

9. Sanjay Kumar Dey, ToyanjiJoseph, Santosh Kumar, A. Kamaladevi, Nabanita Sarkar, Surajit Sarkar, K. Balamurugan, B.K. Thelma and **Suman Kundu** (2015) *"*Biophysical and Biochemical validation of new inhibitors identified through rational structure based design againstDopamine-β-hydroxylase to combat cardiovascular diseases", National Symposium on Biophysics and Golden Jubilee Meeting of the

Indian Biophysical Society (IBS), 14th-17th February, 2015,JamiaMilliaIslamia, New Delhi (***Oral presentation***)

10. Richa Arya, Ambrish Kumar, Monica Sundd and **Suman Kundu** (2015) "Functional Insights into a unique 4' Phosphopantetheinyl transferase from *Leishmania major* ", National Symposium on Biophysics & Golden Jubilee Meeting of Indian Biophysical Society, 14th-17thFebruary, 2015, JamiaMilliaIslamia, New Delhi. (***Oral presentation***)

11. PushpanjaliDasauni and **Suman Kundu** (2015) "Identification of single mutations in Recombinant Hemoglobin Variants using modified digestion method and separation power of LC coupled with MALDI MS/MS", National Symposium on Biophysics and Golden Jubilee Meeting of the Indian Biophysical society, Feb 14th -17th, 2015, JamiaMilliaIslamia, New Delhi (***Oral presentation***)

12. Gagandeep Kaur, Sanjay Kumar Dey and **Suman Kundu** (2015) "Targeting Cytochrome b5 reductase3 to combat cardiovascular diseases", 5thNational Science Day Symposium,27th-28th February, 2015, University of Delhi South Campus, New Delhi (***Won a poster prize***)

13. Mamta, PushpanjaliDasauni and **Suman Kundu** (2015) "Spectroscopic Identification and Characterization of Hemoglobins with Single Amino Acid Mutations for Simpler Diagnosis of Hemoglobinopathies" 5th National Science Day Symposium 2015, February 27th - 28th, 2015, University of Delhi South Campus, New Delhi.

14. Richa Arya, Ambrish Kumar, Monica Sundd and **Suman Kundu** (2015) "Insight into ACP-PPTase interaction essential for Fatty acid synthesis in *Leishmania major* with application in drug design", 5th National Science Day Symposium, 27th-28thFebruary, 2015, University of Delhi South Campus, New Delhi. (***Third Best Oral Presentation Award***).

15. Sanjay Kumar Dey, Himanshu Meghwani, Pankaj Prabhakar, Subir Kumar Maulik and **Suman Kundu** (2015) "Dopamine-β-hydroxylase inhibitor UDSC171 can prevent isoproterenol induced cardiac hypertrophy in rats". 12th Annual Conference of International Society for Heart Research (Indian Section), 14th-15th March, 2015, Jawaharlal Nehru University, New Delhi, India. (***Selected among the best five posters***)

16. Sanjay Kumar Dey, Gagandeep Kaur, ToyanjiJoseph, Santosh Kumar, A. Kamaladevi, Nabanita Sarkar, Surajit Sarkar, K. Balamurugan , B.K. Thelma and **Suman Kundu** (2015) "New inhibitors of Dopamine-β-hydroxylase: identified and validated through structure based approach to combat hypertension" 12th Annual Conference of International Society for Heart Research (Indian Section), 14th-15th March, 2015, Jawaharlal Nehru University, New Delhi, India.

17. **Suman Kundu** and K. Balamurugan(2015) "Proteomic investigation of *C elegans* upon bacterial infection", ***Invited Talk,*** Symposium on Proteomics, Sri Venkateswara College, Silver Jubilee for Post-graduate Diploma, March 16th, 2015, New Delhi.

18. Invited to deliver a lecture on "Discovery of Novel Drug candidates for anti-Cancer Therapy" in the Symposium on Innovations in Product Design, 11-13 May, **2015**, Indian Institute of Information Technology, Design and Manufacturing, Jabalpur, India. **(Dr. Alo Nag).**

19. Invited to deliver a lecture on "Human Papillomavirus, the Oncogenic SUMO Wrestler".5th National Science Day Symposium, 27th-28th February, 2015, University of Delhi South Campus, New Delhi, India. **(Dr. Alo Nag)**.

20. Bharti Nawalpuri, Pradeep Singh Cheema, Deeptashree Nandi, Priyanka Gautam and **Nag, A.** (2015). "Cul4A: Moonlighting E3 Ligase in HPV driven Carcinogenesis". 5th National Science Day Symposium, 27th-28th February, 2015, University of Delhi South Campus, New Delhi, India.

National Conferences - <u>Resource Persons</u>

1. Invited as Panelist for Panel Discussion in a session entitled "Meet the Editors", as Chief Editor of Journal of Proteins and Proteomics, in 6th Annual Meeting of the Proteomics Society of India, 7th-9th December, 2014 in Indian Institute of Technology (IIT) Bombay, Mumbai. (**Prof. Suman Kundu**)
2. Invited as Chairperson of a session in the Symposium on Innovations in Product Design, 11-13 May, **2015**, Indian Institute of Information Technology, Design and Manufacturing, Jabalpur, India. **(Dr. Alo Nag)**

IQAC Report - Details
Part B, Criterion III
Department of Biochemistry
July 2014 – June 2015

3. Research, Consultancy and Extension

3.2 Details regarding major projects

Completed

None

Ongoing

No.	Name of Project	Duration	Funding Agency	Budget
Professor Anil K. Tyagi				
1.	A Virtual Centre of Excellence for Co-ordinated Research on Tuberculosis : Development of Alternate Strategies	September 2011 to September 2016	DBT	484.77 lakhs
2.	Development and evaluation of an α–crystallin based prime boost vaccination strategy against TB by employing MVA	May 2012 to November 2015	DBT	80.89 lakhs
Professor Vijay K. Chaudhary				
3.	DNA Sequencing facility at UDSC (Phase V)	June 2014 to May 2017	DBT	111 lakhs
4.	Development of reagents for simple immunochemical tests for the detection of Chikungunya infection	March 2014 to Feb 2017	DBT	86 lakhs
Professor Prahlad C. Ghosh				
5.	Innovative strategies for developing Diagnostics and Therapeutics to combat Infections	November 2014 to October 2019	DU DST-Purse	22.50 lacs
6.	Evaluation of soya phosphatidylcholine-stearylamine liposome as anti-malarial agent.	April 2014 to March 2017	ICMR	25.0 lacs
Professor Debi P. Sarkar				
7.	Centre of Excellence for Research on Hepatitis C Virus – Phase II (Co-PI with Prof. Saumitra Das, IISc., Bangalore)	September 2013 to September 2016	DBT	40.12 lakhs

Professor Suman Kundu				
8.	Development of potent small molecule inhibitors against dopamine beta-hydroxylase to combat cardiovascular diseases	June 15, 2015 to June 14, 2018	DBT	Rs. 78,90,300
Dr. Suneel Kateriya				
9.	Engineering of Photoactivated Adenylate Cyclase (PAC) for the Development of Optogenetic Tools for Neuroscience Applications	2012-2015	DBT	46 lakhs
10.	Functional characterization of new photoreceptor proteins and ion channels in the microalga*Chlamydomonasreinhardtii* using functional genomics methods. DST-India-RFBR-Russia (2014-16)	2014-2016	DBT-RFBR (Indo-Rusia)	25 lakhs
11.	Photo-dynamic, Biochemical and Optogenetic Characterization of the Novel Bacterial Photoactivated Adenylate Cyclase	2013-2017	DST-SERB	46 lakhs
Dr. Amita Gupta				
12.	Identification and characterization of promoters of toxin antitoxin loci in *Mycobacterium tuberculosis*	(October 2014 – September 2017)	CSIR	35.0 lakhs
Dr. GarimaKhare				
13.	Understanding the VirS mediated acid induced responses of *Mycobacterium tuberculosis* in maintaining the pH homoeostasis *in vitro* and in host	(August 2014 – August 2017)	DBT	50.0 lakhs
	Total			**1131.18 lakhs**

Sanctioned

None

Submitted

No.	Name of Project	Duration	Funding Agency	Budget
Professor Suman Kundu				
1.	Structural characterization of ARL 15 to combat rheumatoid arthritis	3 years Submitted July 2014	DBT	79.02 lakhs
	Total			**79.02 lakhs**

3.3 Details regarding minor projects

Completed

No.	Name of Project	Duration	Funding Agency	Budget
Professor Vijay Chaudhary				
1.	Production of Reagents for simultaneous immunochemical detection M. tuberculosis Complex (MTC) and Non Tuberculous Mycobacteria (NTM)	October 2014 to Sept. 2015	R&D Grant Delhi University	2.8 lakhs
Professor Suman Kundu				
2.	An Initiative into Three-Dimensional Structure Determination of Extremophilic Globins from Algae, their Mesophilic Counterparts and the Related Plant Hemoglobins	1 year; October, 2013-September, 2014	R&D Grant Delhi University	2.8 lakhs
Prof. Prahlad C. Ghosh				
3.	Long circulatory PLGA-nanoparticles mediated delivery of anti-malarial drugs for the treatment of malaria	October 2014 to Sept. 2015	R&D Grant Delhi University	2.7 lakhs
Professor. Alo Nag				
4.	Investigation of the link between mammalian coactivator hADA3 and Promyelocytic Leukemia protein	Oct. 2014-Sept. 2015	R&D Grant Delhi University	3.0 lakhs
		Total		**11.3 lakhs**

Ongoing

Professor Suman Kundu				
1.	Understanding the structure of *Leishmania major*phosphopantetheinyl transferase (LmjPPTase) and its interaction with cognate ACP	3 years from 27th March, 2015	UGC-DAE	Rs7.902 lakhs
2.	Stability and amyloidogenicity of cyanobacterial hemoglobin in relation to myoglobin: model for engineering stable artificial blood substitutes	1 year from 15.10.2014	R&D Grant Delhi University	2.85 Lakhs
		Total		**10.752 lakhs**

Sanctioned

None

Submitted

No.	Name of Project	Duration	Funding Agency	Budget
Professor Vijay Chaudhary				
1.	Production of Reagents for simultaneous immunochemical detection M. tuberculosis Complex (MTC) and Non Tuberculous Mycobacteria (NTM)	1 year Sept 2015	R&D Grant Delhi University	3 lakhs
Professor Suman Kundu				
2.	Engineering Stable Recombinant Hemoglobin for use as Artificial Blood Substitutes and Amyloidogenecity of Neuroglobin with relevance to Neurodegenerative Diseases.	1 year; June 2015	R&D Grant Delhi University	3 lakhs
Professor Prahlad C. Ghosh				
3.	Whole cell based and structure based drug screening of NCI compounds and other potent chemically synthesized small inhibitors for the treatment of malaria	1 year June 2015	R&D Grant Delhi University	3 lakhs
Professor Alo Nag				
4.	Investigation of the link between mammalian coactivator hADA3 and Promyelocytic Leukemia protein	1 year Sept 2015	R&D Grant Delhi University	3 lakhs
Dr. Amita Gupta				
5.	Cloning, expression, purification and production of antibodies to the Tet Repressor protein encoded by Transposon Tn10	1 year Sept 2015	R&D Grant Delhi University	3 lakhs
Dr. GarimaKhare				
6.	To study the role of LprA in the survival and virulence of *Mycobacterium tuberculosis*	1 year June 2015	R&D Grant Delhi University	3 lakhs
	Total			**18 lakhs**

3.4 Details on research publications (impact factor included)

Professor Anil K. Tyagi

International- Peer Review Journals None

National – Peer Review Journals (Total = 1)

Sharma S., Rajmani R.S., Kumar A., Bhaskar A., Singh A., Manivel V., **Tyagi A.K**., Rao K.V. (2015). Differential proteomics approach to identify putative protective antigens of *Mycobacterium tuberculosis* presented during early stages of macrophage infection and their evaluation as DNA vaccines. *Indian J Exp Biol.* 2015 Jul;53(7):429-39.

Impact Factor – 0.835

International – e-Journals None

National – e-Journals - None

International – Conference proceedings - None

National – Conference proceedings - None

Professor Prahlad C. Ghosh

International- Peer Review Journals (Total = 6)

1) Nikhil Tyagi, Monika Tyagi, Manendra Pachauri and **Ghosh, P.C.** (2015) Potential therapeutic applications of plant toxin-ricin in cancer: challenges and advances. Tumor Biology DOI: 10.1007/s13277-015-4028-4, *In press.* **(Impact factor 3.61).**
2) Manendra Pachauri, Enna Dogra Gupta, **Ghosh, P.C.** (2015) Piperine Loaded PEG-PLGA Nanoparticles: Preparation, Characterization and Targeted Delivery for Adjuvant Breast Cancer Chemotherapy. Journal of Drug Delivery Science and Technology, 29, 269–282 doi:10.1016/j.jddst.2015.08.009 **(Impact factor 0.65).**
3) Singh AK, Rajendran V, Pant A, **Ghosh P.C.**, Singh N, Latha N, Garg S, Pandey KC, Singh BK, Rathi B.(2015). Design, synthesis and biological evaluation of functionalized phthalimides: a new class of antimalarials and inhibitors of falcipain-2, a major hemoglobinase of malaria parasite. Bioorg Med Chem. 2015 Apr 15;23(8):1817-27. doi: 10.1016/j.bmc.2015.02.029**. (Impact factor 2.79).**
4) Raza M, Chakraborty S, Choudhury M, **Ghosh P.C.**, Nag A. (2014). Cellular iron homeostasis and therapeutic implications of iron chelators in cancer. Curr Pharm Biotechnol. 2014;15(12):1125-40. **(Impact factor 1.95)**
5) Gupta, Ruchi, Rajendran, V., **Ghosh, P.C.** and Srivastava, S. (2014). Assessment of anti-plasmodial activity of non-hemolytic, non-immunogenic, non-toxic antimicrobial peptides (AMPs LR14) produced by Lactobacillus plantarum LR/1. Drugs R D. 2014 Jun; 14(2): 95–103. **(Impact factor 1.71).**
6) Mahajan, Richi; Kumar, Vinod; Rajendran, Vinoth; Saran, Saurabh**; Ghosh, P.C**.; Saxena, Rajendra (2014). Purification and characterization of a novel and robust L-asparaginase having low glutaminase activity from *Bacillus licheniformis*: in vitro evaluation of anti-cancerous properties. Plos One 9(6): e99037, **(Impact factor 3.23).**

National – Peer Review Journals *- None*

International – e-Journals One

1. Mahajan, Richi; Kumar, Vinod; Rajendran, Vinoth; Saran, Saurabh; **Ghosh, Prahlad;**Saxena, Rajendra (2014). Purification and characterization of a novel and robust L-asparaginase having low glutaminase activity from *Bacillus licheniformis*: in vitro evaluation of anti-cancerous properties. Plos One 9(6) e99037 doi:10.1371/journal.pone.0099037.

National – e-Journals - None
International – Conference proceedings - None
National – Conference proceedings - None

Professor Suman Kundu

International – Peer Review Journals (total = 4)

1. Durai, S., Singh, N., **Kundu, S**.* and Balamurugan, K.* (2014) "Proteomic investigation of *Vibrio alginolyticus* challenged *Caenorhabditis elegans* revealed regulation of cellular homeostatis proteins and their role in supporting innate immune system". ***Proteomics*** 14, 1820-1832. (*-joint corresponding authors).
Impact Factor: 4.2
2. Oshtrakh, M.I.*, Kumar, A., Alenkina,, I.V., Zakharova, A.P., Semionkin, V.A. and **Kundu, S.*** (2014) "Characterization of monomeric soybean leghemoglobin using Mössbauer spectroscopy with a high velocity resolution" ***Hyp. Interact.*** 226, 431-438. (*-joint corresponding authors) **Impact Factor: 0.25**
3. Uppal, S., Salhotra, S., Mukhi, N., Zaidi, F.K, Seal, M., Ghosh Dey, S., Bhat, R. and **Kundu, S.** (2015) "Significantly enhanced heme retention ability of myoglobin engineered to mimic the third covalent linkage by non-axial histidine to heme (vinyl) in *Synechocystis* hemoglobin". ***J. Biol. Chem***. 290, 1979-1993. **Impact Factor : 4.89**
4. Seal, M., Uppal, S., **Kundu, S.** and Dey, S.G. (2015) "Interaction of ApoNeuroglobin with Heme-Aβ Complexes Relevant to Alzheimer's Disease". ***J BiolInorg Chem.*** 20, 563-574. **Impact Factor : 3.2**

National – Peer Review Journals (total = 1)

1. Dey, S.K and **Kundu, S**. (2014) "The Indian Wizard of Biophysics: Remembering G.N. Ramachandran in the International Year of Crystallography" ***J. Prot. Proteomics*** **5**, 65-72. **Impact Factor : 0.5**

International – e-Journals (total = 1)

1. Singh, K., Shandilya, M., **Kundu, S.*** and Kayastha, A.M.* (2015) "Heat, acid and chemically induced unfolding pathways, conformational stability and structure-function relationship in wheat α–amylase". ***PLoS One***. 10(6):e0129203. (*-joint corresponding authors). **Impact Factor : 3.27**

National – e-Journals - None

International – Conference proceedings (total = 1)

1. Shandilya, M., Kumar, A., Uppal, S., Kateriya, S and **Kundu, S** (2014) In support of nitric oxide dioxygenase function: Algal hemoglobins and their reduction partners, pp. 674a, 58th Annual Meeting of Biophysical Society, San Francisco, California, Feb 15-19, 2014. Published in ***Biophys. J*** (Cell Press) 106(2), 674a. **Impact Factor : 3.83**

National – Conference proceedings

None

Professor Alo Nag

International – Peer Review Journals (total = 7)

1. Jaiswal, N., John, R., Chand, V. and ***Nag, A.*** (2015). **"**Oncogenic Human Papillomavirus 16E7 modulates SUMOylation of FoxM1b". ***Int. J Biochem Cell Biol.*** 58:28-36.58,28**. Impact Factor : 4.046**
2. Kumar S**,** ***Nag A***, Mandal CC. (2015). "A Comprehensive Review on miR-200c, a Promising Cancer Biomarker with Therapeutic Potential".***Curr Drug Targets***. 16(12):1381. **Impact Factor : 3.021**
3. Jaiswal, N., Chakraborty, S. and ***Nag A.*** (2014). "Biology of FOXM1and its Emerging Role in Cancer Therapy". ***J. Proteins and Proteomics***, 5(1): 249. **Impact Factor : 0.5**
4. Chakraborty, S., John, R. and ***Nag A***. (2014) "Cytoglobin in tumor hypoxia: Novel insights into cancer suppression". ***Tumor Biology***, 35(7), 6207**. Impact Factor : 3.6**
5. Chand, V., John, R., Jaiswal, N., Johar, S. and ***Nag, A.*** (2014) "High Risk HPV16E6 Stimulates hADA3 Degradation by Enhancing its SUMOylation". ***Carcinogenesis*** . 35(8):1830-9. doi: 10.1093/carcin/bgu104.**Impact Factor : 5.334**
6. Raza, M., Chakraborty, S., Choudhury, M., Ghosh, P.C. and ***Nag A***. (2014). "Cellular iron homeostasis and therapeutic implications of iron chelators in cancer". ***Curr. Pharm. Biotech.*** 15(12):1125-40. **Impact Factor : 2.51**
7. Sharma, P and **Nag, A.** (2014) **"**CUL4A Ubiquitin Ligase: A Promising Drug Target for Cancer and Other Human Diseases". ***Open Biology***. 4: 130217.doi: 10.1098/rsob.130217.**Impact Factor: 5.784**

National – Peer Review Journals (total = 1)

1. Jaiswal, N., Chakraborty, S. and ***Nag A.*** (2014) "Biology of FOXM1and its Emerging Role in Cancer Therapy". ***J. Proteins and Proteomics***, 5(1): 249. **Impact Factor : 0.5**

International – e-Journals (total = 6)

1. Jaiswal, N., John, R., Chand, V. and ***Nag, A.*** (2015). **"**Oncogenic Human Papillomavirus 16E7 modulates SUMOylation of FoxM1b". ***Int. J Biochem Cell Biol.*** 58:28-36.58,28**. Impact Factor : 4.046**

2. Kumar S**,** ***Nag A***, Mandal CC. (2015). "A Comprehensive Review on miR-200c, a Promising Cancer Biomarker with Therapeutic Potential".***Curr Drug Targets***. 16(12):1381.**Impact Factor : 3.021**
3. Chakraborty, S., John, R. and ***Nag A***. (2014) "Cytoglobin in tumor hypoxia: Novel insights into cancer suppression". ***Tumor Biology***, 35(7), 6207**. Impact Factor : 3.6**
4. Chand, V., John, R., Jaiswal, N., Johar, S. and ***Nag, A.*** (2014) "High Risk HPV16E6 Stimulates hADA3 Degradation by Enhancing its SUMOylation". ***Carcinogenesis*** . 35(8):1830-9. doi: 10.1093/carcin/bgu104. Epub 2014 May 2. **Impact Factor : 5.334**
5. Raza, M., Chakraborty, S., Choudhury, M., Ghosh, P.C. and ***Nag A***. (2014). "Cellular iron homeostasis and therapeutic implications of iron chelators in cancer". ***Curr. Pharm. Biotech.*** 15(12):1125-40. **Impact Factor : 2.51**
6. Sharma, P and **Nag, A.** (2014) **"**CUL4A Ubiquitin Ligase: A Promising Drug Target for Cancer and Other Human Diseases". ***Open Biology***. 4: 130217.doi: 10.1098/rsob.130217. **Impact Factor: 5.784**

International – Conference proceedings (total = 1)

1. Jaiswal, N., Cheema, S.P., John, R., Chand, V., and **Nag, A.** (2015)."Viral oncoprotein HPV16E7 perturbs SUMOylation of FoxM1 to induce oncogenesis" at International Symposium on "Current Advances in Radiobiology, Stem cells and Cancer Research 2015" held from Feb 19-21, 2015 at Jawaharlal Nehru University, New Delhi, India. Published in ***Nature India.*** Feb 2015.
2. Neha Jaiswal and **Nag, A.** (2015).*"Modulation of FoxM1 SUMOylation by high risk HPV and its significance in cervical cancer"*in '4th World congress on Cancer Science and Therapy 2014' held during 20th -22nd October, 2014 in Chicago, USA. " ADA3 : A novel molecular target for cancer therapy"

National – Conference proceedings (total = 1)

Alo Nag "Discovery of Novel Drug candidates for anti-Cancer Therapy" in the Symposium on Innovations in ProducsDesign, 11-13 May, 2015, Indian Institute of Information Technology, Design and Manufacturing, Jabalpur, India.

3.5 Details on Impact factor of publications (2014-2015)

Professor Prahlad C. Ghosh

Range 0.65 – 3.61
Average 2.597 (total IF = 20.78; total publications = 8)
h-index 10 (Last 5 years); 17 (overall) (Google Scholar)
Nos. in SCOPUS Citations – 16

Professor Suman Kundu

Range 0.25 – 4.89
Average 2.89(total IF=20.14; total publications = 7)
h-index 18(Last 5 years); 26 (overall)(Google Scholar)
Nos. in SCOPUS Citations–20

Professor Alo Nag

Range 0.5 – 5.784
Average 3.57 (total IF = 25; total publications = 7)
h-index 12 (Last 5 years); 15 (overall) (Google Scholar)
Nos. in SCOPUS ……Citations – 80

3.7 No. of books published - None

3.11 No. of conferences organized by the institution

International
None

National –
None

State
None

University:

"Special seminar on "Morphogenesis of Proteins" by Prof. Maurizio Brunori, University of Rome, Italy at Biotech Centre Auditorium, University of Delhi South Campus on December 3, 2014.

College: Nil

3.12 Served as experts, chairpersons or resource persons

Professor Prahlad C. Ghosh

Invited as a member of the UGC Expert Committee Meeting for finalizing Under Graduate Courses Syllabi under Choice based credit System (CBCS), held on June 22, 2015 at South Campus, Delhi University, New Delhi-110021.

Member, Research Review Committee (RRC), National Dope Testing Laboratory w.e.f. f October 09, 2-14

Member, Doctoral Committee, Indira Gandhi National Open University (IGNOU), New Delhi

Member, Doctoral committee, JNU, New Delhi.

Invited by Global Innovation & Technology Alliance (GITA) under DST funded India-UK Collaborative Industrial R & DProgramme as Technical Expert in project mentoring Group for funding research project and quarterly review of the project. September 24, 2014

Professor Suman Kundu

Experts

1. External Expert of Faculty Re-designation Committee, TERI University, Vasant Kunj, New Delhi, 16 April 2015.
2. External examiner, One year P.G. Diploma Course in Molecular and Biochemical Technology Semester –II, Sri Venkateswara College, New Delhi, 28-30 April, 2015.
3. External Expert, Doctoral Advisory Committee, School of Life Sciences, Jawaharlal Nehru University, February 9, 2015.
4. Advisory Committee Member, Post graduate Diploma Course in Molecular and Biochemical Technology, Sri Venkateswara College, University of Delhi (since 5.1.2015; DBT sponsored course), New Delhi
5. External Examiner, M.Tech thesis evaluation including viva, (three) students of Department of Biotechnology, Delhi Technological University, Delhi, August 7th, 2014
6. Judge, Dr. A.K. Saha Memorial Young Scientists Experimental Project Contest, Springdales School, DhaulaKuan, August 8th, 2014
7. External, Practical Examinations of One Year P.G. Diploma Course in Molecular & Biochemical Technology Semester I, 25-27th November, 2014.
8. External Expert, Doctoral Advisory Committee (Level II) IGIB, New Delhi Jan 2015.
9. Member on the Special Committee of the Special Centre for Molecular Medicine of Jawaharlal Nehru University (JNU), 2013-2016.
10. Reviewed grant applications for DBT, DST and CSIR
11. Reviewed SixPh.D Thesis.
12. Peer Reviewed articles for J. Agr. Food Chem., Indian J. Microbiol., PloS One. Applied Biochemistry and Biotechnology; Letters in Drug Design and Discovery, F1000 Research, FEBS Letters, Indian J of Biotechnology, Cell and Developmental Biology

Chairpersons

1. Chief Editor, Journal of Proteins and Proteomics (www.jpp.org.in)

Resource persons

1. Executive Council Member, Proteomics Society, India
2. Deputy Coordinator, UGC-SAP Programme, Department of Biochemistry, University of Delhi South Campus (2009-2014)
3. Indian Academy of Sciences (IAS) mentor to Summer Trainees (2011-2015)
4. Local Organizing Committee Member and Judge, Poster Session, National Symposium on Biophysics and Golden Jubilee Annual Meeting of IBS, 50th year of Indian Biophysical Society, Feb 14-17, 2015, JamiaMilliaIslamia, New Delhi.
5. Users Workshop for the Utilization of Indus Synchrotron beamlines and CRS Project Review Meeting, UGC DAE CSR and RRCAT, Indore, Jan 22-23, 2015. Talk title- Understanding the structure of *Leishmania major*Phosphopantetheinyl Transferase and its Interaction with cognate ACP.

Professor Alo Nag

Experts

1. Examiner, M.Phil. Dissertation (including viva-voce), for M.Phil Degree in Life Sciences, Gujrat Central University of Gujrat, Gandhinagar (December, 2013).
2. Reviewed grant applications for DST and CSIR (2012-2015).
3. Peer Reviewed articles for Molecular Cancer (USA), Tumor Biology (USA), eCancer (UK), eCancer Medical Science (UK), PLoS One, PLASMID (USA), Current Cancer Drug Targets (USA), Genetics Research International (USA) and Molecular Cancer Biology (USA). (2009-2015).
4. Examiner, Practical for Diploma in Biotechnology, Sri Venkateswara College, New Delhi (2012-2015)

Resource persons

1. **Training PG students with research skills** by serving as mentor in theSummer Research Fellowship Programme jointly sponsored by the three national science Academies, India. (2012-2015).
2. **Teacher-in-Charge** for Phosphoimager, LAS-4000 Imager, CIF, University of Delhi South Campus (2009-2014).

Dr. GarimaKhare

Experts

1. External examiner, One year P.G. Diploma Course in Molecular and Biochemical Technology Semester –II, Sri Venkateswara College, New Delhi, 2015.

3.13 Number of Collaborations

(a) National collaboration Total = 08

Name of the Faculty	Collaborated Agency
Prof. Vijay K. Chaudhary	Development for reagents for simple immunochemical tests for the detection of Chikungunya infection. ICMR Virus Research Unit, Kolkata and JIIT, Noida.
	Development of rapid test for infectious diseases with M/s SPAN Diagnostics Limited, Surat
	Development and evaluation for the development of rapid test for culture confirmation of *M. tuberculosis* with AIIMS (New Delhi), PGI (Chandigarh), P.D.HindujaHospital (Mumbai), Nizam Institute of Medical Sciences (Hyderabad), NJIL&OMD (Agra)
Prof. Debi P. Sarkar	Inhibition of HCV RNA translational and replication using small RNAs" in collaboration with Dr. Saumitra Das, Dept. of Microbiology and Cell Biology, Indian Institute of Science, Bangalore-560012

	Role of Nonmescle Myosin II in virus-cell fusion" with Dr. SS Jana, IACS, Kolkata.
	Novel nanoscale materials-----antimicrobial and anticancer activities" with Prof. SS Ghosh, IIT, Guwahati.
Prof. Suman Kundu	Prof. N. Ramesh, Department of Chemistry, Indian Institute of Technology (through DBT. Govt. of India)
Dr. Suneel Kateriya	Engineering of photoactivatedadenylatecyclase (PAC) for the development of optogenetic tools for neuroscience Applications. Collaborative project with Dr. Surjit Sarkar, Department of Genetics, UDSC, New Delhi

(b) International Collaboration, Total = 05

Name of the Faculty	Collaborated Agency
Prof. Vijay K. Chaudhary	High Performing Lateral Flow ……. For Cardiac and Infectious diseases")with University of Turku, Finland under Indo-Finland programme supported by DBT
	Ready-to-use Microfluidic Cartridges for Affordable Point-of-care Diagnostics "ReDia"" by Prof. Vijay. K. Chaudhary, Prof. PasiKallio, Tampere University of Technology and Department of Biotechnology, University of Turku, BioCity, Finland under Indo-Finnish collaboration in diagnostics" by Finnish Funding Agency for Technology and Innovation (TEKES), and the Indian Department of Biotechnology (DBT).
Prof. Suman Kundu	Mossbauer Spectroscopy of Mammalian and other Novel Hemoglobins. BoehringerIngelheimFonds Fellowship for student and Research Collaboration with Ural State Technical University-UPI, Ekaterinburg, Russia, 2010-2015
Dr. Suneel Kateriya	Development of novel optogenetics tools, collaborative project with Prof. Peter Hegeman, Humboldt University, Berlin, Germany
	Engineering and characterization of LOV domain proteins, Max-Planck Institute, Muelheim, Germany

3.16 No. of patents received this year

<u>Professor Suman Kundu</u>

None

3.17 Research awards / recognitions (total = 13)

Professor Anil K. Tyagi

Faculty - None

Research fellow

International –

P. Vineel Reddy, Rupangi VermaPuri, Priyanka Chauhan, Ritika Kar, **Akshay Rohilla**, Aparna Khera and **Anil K. Tyagi**. (2014). Disruption of mycobactin biosynthesis leads to attenuation of *Mycobacterium tuberculosis* for growth and virulence. Posted presented at International Confernece and workshop on "Recent Advances in Structural Biology and Drug Discovery", October 9-11, 2014 held at IIT, Roorkee. **Best poster award.**

National –

State –

University –

Swati Singh, Garima Khare and Anil K. Tyagi, (2015). Identification of biotin biosynthesis inhibitors for inhibition of *Mycobacterium tuberculosis*. Poster presented at 5th National Science Day Symposium, 27th-28thFebruary, 2015, University of Delhi South Campus, New Delhi. **Best poster award.**

Professor Vijay K. Chaudhary

Faculty

National – **Biotech Product and Process Development and Commercialization Award 2014 –** given by Department of Biotechnology, Ministry of Science and Technology, Govt. of India

Visitor's Award for Innovation-2015 by the President of India at a special ceremony at RashtrapatiBhawan on 4 February 2015

State – None

University – None

Professor Prahlad C. Ghosh

Faculty

National – Awarded Prof. M.L. Khorana Memorial Prize on June 05, 2015 by the Indian Pharmaceutical Association (IPA) for publishing best paper in

the field of **Pharmacology & Clinical Pharmacy** in IJPS for the year 2013.

State – None

University – None

Professor Suman Kundu

Faculty - None

Research fellow

International–

BoehringerIngelheimFonds (BIF) Travel Grant Award to **Sanjay Kumar Dey** (2015) for Short Term Research Work in Germany.

National–

- **Sanjay Kumar Dey** (2015) 12th Annual Conference of International Society for Heart Research (Indian Section), 14th-15th March, 2015, Jawaharlal Nehru University, New Delhi, India. **Selected among the best five posters**.

State –

- **Sanjay Kumar Dey**, (2015) Cardiovascular Research Convergence 2, *17th January, 2015, All India Institute of Medical Sciences, New Delhi, India.* **Best Poster Award**

University–

- **Richa Arya**, (2015) 5th National Science Day Symposium, 27th-28thFebruary, 2015, University of Delhi South Campus, New Delhi. **Third Best Oral PresentationAward**

Professor Alo Nag

Research fellow

International –

1. ***Neha Jaiswal,*** Received Best Poster Award (2015) in International Symposium Current Advances in Radiobiology, Stem Cells and Cancer Research, 19th-21st Feb, 2015, JNU, New Delhi.

2. ***Neha Jaiswal,*** Selected for **Young Scientist Forum** and oral presentation by conference organizers for her work "**Modulation of FoxM1 SUMOylation by high risk HPV and its significance in cervical cancer" in '4th World congress on Cancer Science and Therapy 2014'** held during 20th -22nd October, 2014 in Chicago, USA.

3. *Neha Jaiswal*, Awarded **DST Young Scientist International Travel Award** for oral presentation of her work **in '4th World congress on Cancer Science and Therapy 2014'** held during 20th -22nd October, 2014 in Chicago, USA.

National – None
State – None
University – None

Dr. Amita Gupta

National - **Visitor's Award for Innovation-2015** by the President of India at a special ceremony at RashtrapatiBhawan on 4 February 2015

3.18 Students registered (July 2014– June2015)

Professor Suman Kundu

None

Professor Alo Nag

Three (03) Pradeep Singh Cheema, Yama Atri and Simran Kaur

3.19 Ph.D. awarded(July 2014– June 2015) Names in italics in table below

Professor Anil K. Tyagi

S.No.	Name of Scholar	Date of Qualifying JRF	Whether JRF/ SRF	Date of Registration	Date of Thesis Submission	Degree Awarded
1	Priyanka Chauhan	Dec 2007	SRF/ CSIR	13th May 2008	July 2013	March 2015

Professor Prahlad C. Ghosh

S.No.	Name of Scholar	Date of Qualifying JRF	Whether JRF/ SRF	Date of Registration	Date of Thesis Submission	Degree Awarded
1	Manender Pachauri	15th May 2008	SRF / UGC	20th February 2009	19th February 2014	March 2015

Professor Suman Kundu

S.No.	Name of Scholar	Date of Qualifying JRF	Whether JRF/SRF	Date of Registration	Date of Thesis Submission	Degree Awarded
1	Sheetal Uppal	Dec 2007	SRF / CSIR	Nov 6, 2008	Feb 4, 2014	March 2015
2	Manish Shandilya	Dec 2007	SRF / UGC	Feb 20, 2009	May 19, 2014	March 2015

Professor Alo Nag

S.No.	Name of Scholar	Date of Qualifying JRF	Whether JRF/ SRF	Date of Registration	Date of Thesis Submission	Degree Awarded
1.	Vaibhav Chand	25-10-2007	CSIR	Feb 20, 2009	August 19, 2014	May 2015
2.	Rince John	23-05-2008	DBT	Feb 20, 2009	August 16, 2014	May 2015

3.20 Research Scholars receiving fellowships (newly enrolled + existing ones)

Total = 24

Professor Anil K. Tyagi

JRF (2) – Shubhita Mathur, Swati Singh
SRF (1) –Ritika Kar
Project fellows (1) - AkshayRohilla,
Any other – None

Professor Vijay K. Chaudhary

JRF – None
SRF (2) – Kapil Mathur, Vaishali Verma
Project fellows- None
Any other - None

Professor Prahlad C. Ghosh

JRF (1) – Swati Singh
SRF (6) - Pooja Tiwari, Deepa Jha, Vandana, Vinoth Rajendran, Mohsin Raza, Shivani Sharma

Professor Debi P. Sarkar

JRF- None
SRF (1) - Sunandini Chandra
Project fellows (1)- Deepa Singh
Any other – none

Professor Suman Kundu

JRF (1)–Gaurav Kumar (CSIR)
SRF (3)–Richa Arya, Sanjay Kumar Dey, Pushpanjali Dasauni
Project fellows (1) –Asim Khan
Any other – none

Professor Alo Nag

JRF (3) – Pradeep Singh Cheema, Yama Atri, Simran Kaur
SRF – None
Project fellows -none
Any other - none

Dr. Amita Gupta

JRF - None
SRF – None
Project fellows (1) – Nidhi Gupta
Any other - none

IQAC Report - Details
Part B, Criterion IV
Department of Biochemistry
July 2014 – June 2015

4.1 Details of infrastructure facilities – Class rooms and Laboratories

Number of class rooms: Two class rooms are available for M.Sc., M. Phil. and Ph.D. teaching – One in the old Bachhawat Block and One in the new Biotech Centre.

Number of laboratories: Two laboratories are available for M.Sc. students – one for finaly year students and another for first year students. Each of the 7 faculties in the department supervises one laboratory each for Ph.D research work. CIF laboratories are available for common equipments. Besides, some specialized laboratories are available for facilities such astissue culture, animal cell culture, radio-isotope facility, photographic dark, monoclonal antibody preparation, dedicated room for equipments requiring constant and low humidity, washing and autoclaving, bioinformatics sub-centre, DNA sequencing, etc. The department also has separate animal house and P3 facility for animal work.

Number of Seminar Halls: One seminar hall is available for conducting seminars

4.1 Details of infrastructure facilities – Equipments -

RECORD OF EQUIPMENT PURCHASED IN THE DEPARTMENT OF BIOCHEMISTRY DURING LAST YEAR (2014 TO 2015) (Less than 1 Lakh)

S.No.	Name of Equipment	Equipment Cost	Date of Purchase	Funding Agency
1.	Electrophoresis	Rs.14,149	08.01.2015	Deptt. Grant
2.	Bacteriological incubator	Rs.26,325	18.07.2014	-do-
3.	Paper shredder	Rs.4,850	20.03.2015	UGC Infrastructure grant
4.	UPS 625 VA	Rs.2,300	16.07.2014	-do-
	Total	Rs.47,624		

RECORD OF EQUIPMENT PURCHASED IN THE DEPARTMENT OF BIOCHEMISTRY DURING LAST YEAR (2014 TO 2015) (More than ` 1Lakh)

S.No.	Name of Equipment	Equipment Cost	Date of Purchase	Funding Agency
1.	Microplate washer	Rs.12,49,948 (EURO 16,273)	28.04.2015	DBT Chikungunya (Prof. V.K. Chaudhary)
2.	Chemiluminescence & Gel imagine system	Rs.10,81,224 (US$ 16,700)	27.03.2015	DBT – DNA Project (Prof. V.K. Chaudhary)

4.6 Amount spent on Maintenance

LIST OF AMC DETAILS ALL FACULTIES & DEPARTMENT GRANT

Name of the Equipment	1st Year (2009-10)	2nd Year (2010-11)	3rd Year (2011-12)	4th Year 2012-13)	5th Year (2013-14)	Total
DEPARTMENT (AMC)						
100 KVA & 125 Servo Voltage Stabilizer	27,200	27,200	27,200	27,200	27,200	136000
UV-Vis Spectrophotometer		11,236	11,030	11,236		33502
Automatic fire Alarm Systems	7,500	7,500	9,000	9,720	9,720	43440
RC 5C Plus	49,635	24,818	49,635	24,818		148906
UPS 10KVA		10,679	10,679	10,679		32037
Water Purifier System	3900	4050	3150	1450		12550
Ultra Centrifuge L-90K	33090	33090		39316		105496
Liquid Scintillation Beta 2900 TR Counter	27,191	29,362	32,298	50562		139413
Multimedia Projector Model CPX-4011	9,927	11030	8988	12360		42305
225 KVA DG Set	43,000	44,000	58924	56682		202606
Water Purification System		35296		92,428		127724
UV-Vis Spectrophotometer & Fluorescence Spectrophotometer				83,146		83146
Inverted Phase Contrast Fluorescence Microscope with Digital Camara				27,000		27000
Gel Documentation System				12,000		12000
Uniline on line 10KVA UPS			14,900	14,900		29800
R.O. Systems		5,325	6,000	2,000	2,500	15825
PCR System				1,56,619		156619
Waters HPLC System					28,090	28090
Panasonic System				7,282		7282
04 Nos. RAC 1.5 Ton Air Conditioner	15,988	40,677	6,969	20,232	51,537	135403
02 Nos. Pentium PC	4,412	8,824	8,000	28,100	28,100	77436
						1596580
PROF. ANIL K. TYAGI LAB (AMC)						
1.5 Ton & 2.0 Ton Air conditioner	7026	11,744	3,699	4,991	21,953	49413
03 Nos. Computers,		8,824	9,550	9,550	9,550	37474

printers, UPS & Scanner						
ELEX-10 Water Purification System				22,060	16,101	38161
NBS Shaker Model No. 4330	11,030				16,181	27211
R.O. Plan 100 LPH	11,030	11,030	13,236	18,989	18,989	73274
UPS 2KVA & 3KVA	9,375	3,971				13346
250KVA DG Set		51,841		54,965	57,590	164396
Inhalation Exposure System			60,607	61,738		122408
AKT Purifier			3,25,713	331796		657509
Flow Cytometer			1,10,300	1,12,360		222660
30KVA UPS		48,120	47,461	45,061	45,061	185703
High Pressure Horizontal Rectangular sliding door Sterilizer					76,405	76405
04 Nos. Deep Freezer			36,399	37,078	49,438	122915
IVC Ventilator maximum (cagin systems)		88,240	98,877	1,08,989	1,17,978	414084
Fax Machine Panasonic	2,758	2,758	2,500	2,500		10516
02 Nos. UPS 1.5 KVA	3,971					3971
Computer Printer	5,570	5,570	24,850	12,425	21,850	70265
BSL3 Facility at animal house	27,46,374	20,00,000	20,77,550	21,81,428	11,00,000	10105352
15KVA UPS System					39,428	39428
						12434491
PROF. V.K. CHAUDHARY LAB (AMC)						
Elix-10 System	22,060					22060
Nat Steel high Pressure Horizontal Cylindrical Sterilizer		16,854	16,545	13,236	14,607	61242
RC 5C+ & Evolution RC					54,776	54776
Vesi Cooler	3,200					3200
BOHN Make Refrigeration Split Unit (For 2 unit)	45,863	50,449	51,391	54,042	59,551	261296
Synthesizer DNA/RNA Model 394	44,043					44043
Panasonic KTS (KXES824)		7,147	7,147	7,282	7,282	28858
R.O. Water Purification Plant (250 Litre per hours)			16,545	18,539	20,393	55477
Xerox Printer			24,266	24,719		48985

UPS 10KVA				63,266	58,579	121845
UPS 15KVA					78,856	78856
DNA Sequencer Model ABI 3730XL and 3130XL					6,34,834	634834
AKTA Explorer (2 Nos) and BIA Core 3900	447761	701244	1197407	1055089	495376	3896877
Air Conditioners					1,69,048	169048
						5481397
PROF. P.C. GHOSH LAB (AMC)						
02 Nos. Computer		4,412	9,500	19,000		32912
04 Nos. Air Conditioners		8,871	8499	8,335	15,220	40925
Kent Grand Plus Mineral R.O. System					2,000	2000
						75837
PROF. D.P. SARKAR LAB (AMC)						
ELIX-10 Water Purification System		22,060				22060
						22060
DR. SUMAN KUNDU LAB (AMC)						
02 Nos. Air conditioners	3,286	6,140	9,016	8,923		27365
Spectrometer		44,120	35,296	43,708	44,944	168068
10 KVA UPS		14,600	12,500		14,950	42050
						237483
DR. ALO NAG LAB (AMC)						
Air conditioners			3,070	3,070	3,024	9164
						9164
DR. SUNEEL KATERIYA LAB (AMC)						
Total AMC all Lab & Departmental						**19857012**