NIPER Ph.D Admission 2010

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Important Dates for Admission

NIPER Ph.D Admission 2010

Date of commencement of online registration	29th April 2010
Last date for registration online	13th May 2010
Last date for receipt of completed and signed print out of Registration slip	21st May 2010
Probable date for receiving admit card by email	31st May 2010
Online written test (10:00 am. to 12.00 noon)	13th June 2010
Declaration of written test result (Website-www.niper.gov.in)	16th June, 2010
Interview	5th July 2010
Declaration of list of selected candidates	6th July 2010
Admission of the selected candidates	6th July 2010
Admission of the wait listed candidates	7th July 2010
Orientation and commencement of semester	2nd August 2010

1. *Candidates should carefully read and understand the contents of information brochure before applying for admission.*
2. *The information brochure is subject to alteration(s) and modification(s) without notice.*
3. *This information brochure is for information only and does not constitute a legal document.*
4. *Candidates must present themselves in person for interview on scheduled date and time.*
5. *Admission fee in full must be deposited on the day of admission by the selected candidates.*

The Institute

The National Institute of Pharmaceutical Education and Research (NIPER) has been created as a centre of excellence for higher education, research and development in pharmaceutical sciences and is the first Institute of its kind in the country. The Institute has been declared as an Institute of National Importance by the Government of India through an Act of Parliament. The Institute is a member of the Association of Indian Univesities.

The Institute admits students for the M.S. (Pharm.), M.Pharm., M.Tech. (Pharm.), M.B.A. (Pharm.) and Ph.D. programmes in its various disciplines of pharmaceutical sciences and management every year.

Location

The Institute is situated at Sahibzada Ajit Singh Nagar (S.A.S. Nagar/Mohali) adjoining Chandigarh, the city beautiful, having about two lacs of population. The Institute campus is well connected to New Delhi through rail (Chandigarh railway station is 14 km from the campus), bus (Chandigarh Inter State Bus Terminal is 12 km from the campus) and air (Chandigarh airport is 15 km from the campus).

Campus

Students live in pleasant surroundings of an intellectually stimulating campus, use the most modern equipment, laboratories and library, and go through the specialised courses designed to achieve the goals which country may set for itself in the pharmaceutical sciences and management.

The Institute provides residential facilities to all the students and the teaching staff. The campus area extends to 130 acres with interesting topographical features. The layout of the campus in general is appealing. The trees on the roads are those which have medicinal values. The medicinal plants garden on 25 acres of land has been set up which partly serves as a referral garden for medicinal plants of the region.

1. ACADEMIC PROGRAMMES AND ELIGIBILITY CRITERIA

1.1 Availability of Disciplines for July 2010 academic session

1.1.1 Discipline of Chemical Sciences

Department	Eligibility for Application
Medicinal Chemistry	M.S.(Pharm.)(Medicinal Chemistry/Natural Products); M.Pharm. Pharmaceutical Chemistry); M.Tech. (Pharm.) (Bulk Drugs); M.Sc. (Organic Chemistry)
Natural Products	M.S.(Pharm.) (Natural Products/Medicinal Chemistry/Traditional Medicines); M.Pharm. (Pharmaceutical Chemistry/Pharmacognosy); M.Tech.(Pharm.) (Bulk Drugs); M.Sc. (Organic Chemistry)
Pharmacoinformatics	M.S.(Pharm.) (Pharmacoinformatics/Medicinal Chemistry/Natural Products}; M.Tech. (Pharm.) (Bulk Drugs); M.Sc./ M.Tech. (Bioinformatics); M.Sc. (Organic/Physical/Pharmaceutical Chemistry/Biochemistry/Biophysics/ Biotechnology/ Microbiology)

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1.1.2 Discipline of Biological Sciences

Department	Eligibility for Application
Pharmacology & Toxicology	M.S.(Pharm.) [Pharmacology & Toxicology/ Biotechnology/Regulatory Toxicology]; M.Pharm. (Pharmacology); M.Sc. (Pharmacology/Toxicology/ Zoology/Biochemistry/Medical Biotechnology/ Microbiology); M.D.(Pharmacology); M.V.Sc. (Pharmacology/Pathology/Biotechnology)
Biotechnology	M.S.(Pharm.) or M.Pharm. or M.Tech. (Pharm.) in (Medicinal Chemistry/ Natural Products/Pharmacology & Toxicology/Formulation/Biotechnology/ Pharmaceutics/Pharmacoinformatics); M.E. or M.Tech. (Biotechnology/ Life Sciences/Computational Sciences); M.Sc. in Biological Sciences (Biotechnology/Biochemistry/Botany/Zoology/Physiology/Life Sciences); M.Sc. in Chemistry (Organic)/Pharmaceutical Chemistry/Computational Sciences; M.V.Sc.; MCA
Pharmaceutical Technology (Biotechnology)	M.S.(Pharm.); M.Pharm.; M.Sc. (Life Sciences); M.Tech. (Pharm.) Biotechnology

1.1.3 Discipline of Pharmaceutical Sciences

Department	Eligibility for Application
Pharmaceutical Analysis	M.S.(Pharm.) Pharmaceutical Analysis; M.Pharm. (Pharmaceutical Analysis) M.Sc.(Organic/Analytical Chemistry)
Pharmaceutics	M.S.(Pharm.) (Pharmaceutics/Biotechnology/Pharmacology); M.Pharm. (Pharmaceutics/Formulations); M.Tech. (Biomedical Engineering/Biotechnology/ Chemical Engineering)

1.2 The seats available in various departments/ disciplines, include Institute funded and Government sponsored fellowships and will be disclosed in the NIPER website www.niper.gov.in at the time of declaration of result of written examination i.e. on 16th June 2010.

1.3 In addition to the above mentioned seats, limited number of seats are available in the Department of Medicinal Chemistry, Natural Products, Pharmacology and Toxicology, Biotechnology, Pharmacoinformatics and Pharmaceutical Technology (Biotechnology) for candidates having fellowships from CSIR/UGC/ICMR/ DBT etc. Candidates who have appeared for NET-JRF Examination of the CSIR/ UGC/ ICMR/ DBT etc. in the above disciplines but are yet to get the result are also eligible to apply. However such candidates will be required to produce the proof of having qualified the NET-JRF examination at the time of interview.

1.4 Seats are available for Self-Financing Foreign Nationals and Foreign Nationals under various scholarship schemes of the Ministry of Human Resource Development/Ministry of External Affairs, Government of India. These seats shall be over and above the available seats mentioned above. Such candidate have to arrange for the clearance from the Ministry of External Affairs, Govt. of India, before they can admitted, if selected.

1.5 5% of seats in all programmes are available for candidates sponsored by Public/Private undertakings, Government Departments, Research and Development organizations, over and above the available seats.

1.6 Candidate should have passed the qualifying degree with a minimum of 60% marks in aggregate or CGPA of 6.75 on a 10 point scale wherever grades are awarded or equivalent as determined by Board of Studies and Research of NIPER (Percentage of marks or CGPA so calculated will be based on the norms fixed by the concerned university / Institution or aggregate marks or CGPA scored by the candidate for all years of the qualifying degree, in case University /Institution has not prescribed any norm for calculating such percentage or CGPA). Passing of GPAT/GATE/ NET is an essential qualification except for the following categories of candidates.

1.6.1 Candidates holding M.D; M.V.Sc.

1.6.2 Foreign nationals.

1.6.3 Sponsored candidate from Public/Private Sector Undertakings, Govt.Departments and Research and Development Organizations.

2. PROVISIONAL APPLICATION

Candidates appearing for final qualifying examinations may also apply but they must produce final result and mark sheet of qualifying degree on the day of Interview failing which their candidature will be summarily rejected. No plea/request shall be entertained.

3. RELAXATION

3.1 Relaxation in CGPA to 6.25 on a 10-point scale or in marks to 55% or equivalent in the eligibility criteria is allowed to SC and ST candidates.

3.2 Physically handicapped (PH) candidates are permitted relaxation in eligibility requirement of CGPA to 5.75 on a 10-point scale or to 50% marks or equivalent. No other relaxation beyond this limit will be allowed even if they belong to SC/ST category.

3.3 Scheduled Caste and Scheduled Tribe candidates should furnish a caste certificate signed by Tehsildar/ District Magistrate.

3.4 Physically handicapped candidates should furnish a medical certificate indicating a minimum of 40% of physical defect or deformity duly signed by a Medical Board and countersigned by Principal Medical Officer of a Government Hospital.

4. CANDIDATES SPONSORED BY PUBLIC/ PRIVATE SECTOR UNDERTAKINGS, GOVERNMENT DEPARTMENTS, RESEARCH AND DEVELOPMENT ORGANIZATIONS

4.1 The sponsoring private sector undertakings will be accredited by the committee constituted for the purpose. Qualifying criteria shall be as per "Academic Programmes and Eligibility criteria". A candidate should have relevant working experience of not less than two years and he/she will be required to pay as Industry/Government sponsored candidate for which a separate fee structure is given at para 11 "Fees and Payments".

4.2 Candidates must submit a "Sponsorship Certificate" on a proper letter-head (as per format given at Annexure-2) stating that for the period of his/her studies/research in the Institute the candidate would be treated on duty with usual salary and allowances and that he/she will be relieved for the period for pursuing his/her studies and that the fees of the candidate will be paid by the sponsoring organisation. Candidates seeking admission on the basis of study leave must show proof to the effect that he/she will be/has been granted leave for the period of study in the Institute.

4.3 Candidate is required to submit experience certificate of 2 years duration from his/her employer.Candidate should have completed duration period as on 5th July 2010.

4.4 In case employer of the candidate withdraws sponsorship at any stage during the duration of the programme, such sponsored candidate shall cease to be a student of the Institute from the date of withdrawal of sponsorship.

4.5 No placement assistance is provided to the candidates admitted under this para.

5. ADMISSION OF FOREIGN NATIONALS

5.1 Foreign nationals under various scholarship schemes of the Ministry of Human Resource Development/Ministry of External Affairs, Government of India may be considered for admission on the recommendation/ sponsorship of the respective Ministry subject to eligibility criteria.

5.2 Applications from self financing foreign candidates may be entertained directly by the Institute provided the requirements for eligibility under the respective programme are fulfilled and their applications are cleared by Ministry of External Affairs, Government of India.The brochure can be had from the Institute on payment of US $ 100.

5.3 Such candidates have to arrange for the clearance from the Ministry of External Affairs, Government of India before they can be admitted, if selected.

6. HOW TO APPLY

6.1 The Doctoral research programme of the Institute is classified into the following three disciplines. A candidate can apply for any one of the following disciplines:

6.1.1 Chemical Sciences: Includes departments of (i) Medicinal Chemistry, (ii) Natural Products (iii) Pharmacoinformatics

6.1.2 Biological Sciences: Includes departments of (i) Pharmacology & Toxicology (ii) Biotechnology (iii) Pharmaceutical Technology (Biotechnology)

6.1.3 Pharmaceutical Sciences: Includes departments of (i) Pharmaceutical Analysis (ii) Pharmaceutics.

6.2 Candidate shall register online on www.niper.gov.in as per "steps for online registration" given in the notification and on the website. The process of online registration shall commence on 29th April 2010 and will continue till 13th May 2010. Candidate shall take printout of the Registration slip, paste a coloured passport size photograph at the space provided for the purpose, put signatures at the space meant for the purpose and attach the following: i) a non refundable Bank Draft of Rs. 1000/-(Rs.500/-

for SC/ST) payable at S.A.S. Nagar (Mohali)/ Chandigarh in favour of "Director, NIPER", ii) copy of the award letter (if any) pertaining to NET-JRF of CSIR/ DBT/UGC/ICMR etc. iii) Sponsorship certificate for Industry/Government sponsored candidates (as per format given at Annexure-2). Indian nationals residing abroad and foreign nationals have to remit US$100 by Bank Draft payable to "Director, NIPER". Payment by Cheque/Postal Order will not be accepted.

6.3. Printout of the Registration slip alongwith attachments should be sent to **Registrar, National Institute of Pharmaceutical Education and Research, (NIPER), Sector 67, S.A.S.Nagar (Mohali), Punjab, 160062, (through speed post/ registered post) so as to reach him on or before 21 May 2010.** The Institute will not be responsible for any loss or postal delay. Registration slips received after the due date will not be considered. No correspondence/ inquiry in this regard will be entertained. The Institute shall not be held responsible for misplacement of any loose sheet. Therefore, all the documents are required to be submitted properly tied together.

6.4 Candidates appearing for final qualifying examinations (including NET-JRF) can also apply but they must produce final result on the day of Interview failing which their candidature shall be rejected.

7. ENTRANCE TEST

7.1 Online written test for all disciplines will be held on Sunday, the 13 June, 2010 at Bangalore, Chandigarh, Chennai, Delhi, Hyderabad, Kolkata and Mumbai. Based on the performance in the written test, list of candidates to be called for interview will be displayed on the institute website www.niper.gov.in on 16 June 2010. Interview will be held on Monday, the 5 July, 2010 at NIPER, S.A.S. Nagar. No TA/DA will be paid for attending written test and interview. Candidates have to make their own arrangement for stay during written test and interview.

7.2 The permission granted to the candidates to appear in written test and interview is merely provisional. Final consideration of the candidature is subject to fulfillment of the eligibility criteria to be verified at the time of Interview.

7.3 There will be one objective type question paper containing 170 questions of 85 marks, for each of the following areas i.e. Chemical Sciences; Biological Sciences and; Pharmaceutical Sciences. Answers must be marked as per instructions given in the examination hall just before start of examination. Duration of the examination will be 2 hours. The question paper will be of M.S. (Pharm.); M.Pharm.; M.Tech. (Pharm.) and M.Sc. (in relevant discipline) level.

7.4 The qualified candidates in each discipline shall have to appear for interview which will carry 15 marks.

7.5 There will be negative marking in the written test. 25% marks will be deducted for each wrong answer.

8. ADMISSION PROCEDURE

Admission to the Ph.D. Programme will be based on the combined merit obtained by a candidate in the written test and interview. Interview of the eligible candidates for the Ph.D. Programme will be conducted based on the merit in the written test.

The candidates have to report to the institute for Interview on scheduled date and time. Candidates will be allowed to participate in Interview, only if they are carrying requisite documents as mentioned in para 9 "Documents to be submitted" of this brochure and have to show proof of having passed the qualifying degree examination.

9. DOCUMENTS TO BE SUBMITTED

The candidates will be required to submit the following documents in original and a set of photocopies of these certificates at the time of interview, failing which, the candidature shall be summarily rejected:

9.1 Matriculation Certificate as a proof of age and

correct name.

9.2 Marksheets of all the semesters of qualifying degree.

9.3 Admit Card of NIPER written test.

9.4 GPAT/GATE/NET Card wherever applicable.

9.5 Award letter (if any) of NET-JRF of CSIR/UGC/DBT/ICMR etc.

9.6 Caste certificate, if applicable.

9.7 Certificate of disability, if applicable.

9.8 Medical Certificate to be provided in the form given at Annexesure-1.

9.9 Sponsorship certificate from the employer in case of Government/Industry sponsored candidates as per form attached at Annexure-2.

9.10 Undertaking to be provided by the candidate as per the form regarding ragging given at Annexure-3.

9.11 Undertaking to be given by the parents of the candidate regarding ragging, students to abide by rules of the Institute to be given in the form given at Annexure-4

10. MEDICAL EXAMINATION

Candidates should come to attend interview along with a medical certificate from a Registered Medical Practitioner of a Government Hospital in the format provided at Annexure-1.

11. FEES AND PAYMENTS

11.1 Ph.D Hosteller

One time payment of charges	General (Rs.)	SC/ST (Rs.)	Govt. Spon./Indus. Spon. (Rs.)
Admission fee	1,500	1,500	1,500
Identity Card	150	150	150
Courses of Study	300	300	300
Alumni Fund	1,500	1,500	1,500
Hostel admission	750	750	750
Benevolent Fund	600	600	600
Group Insurance	750	750	750
Institute Security (Refundable)	4,125	4,125	4,125
Total (A)	**9,675**	**9,675**	**9,675**
Charges payable for each semester			
Tuition Fee	11,250	—	20,250
Examination/Evaluation Fee	563	563	563
Registration Fee	563	563	563
Sports	187	187	187
Computer Charges	750	750	750
Grade Card	75	75	75
Medical Fees/Fund	187	187	187
Hostel Seat Rent	937	937	937
Water & Electricity Charges	563	563	563
Total (B)	**15,075**	**3,825**	**24,075**
Payable for Semester-1 (A+B)	**24,750**	**13,500**	**33,750**
Payable for Semester-2 & onwards (B)	**15,075**	**3,825**	**24,075**

11.2. Ph.D. (Non hostellers)

Non hostellers will not be required to pay hostel seat rent (Rs. 937) and water and electricity charges (Rs. 563) in each semester. In addition, non hostellers will not be required to pay hostel admission charges (Rs. 750) at the time of admission.

11.3 Sponsored candidate from Public/Private Sector Undertakings, Govt.Departments and Research and Development Organizations and Self Financed candidates, shall be required to pay an additional Rs.70,000 p.a (non-refundable) towards Project cost alongwith admission/semester fees.

11.4 In addition to the above scholars will be required to pay thesis evaluation charges of Rs. 7,500, placement charges of Rs.1,500, except for sponsored candidates and Rs. 750 towards convocation fee at the time of submitting their thesis.

11.5 Self Financing Foreign National Students

At the time of Admission:

US$ 6000 + Rs. 10,200

At every subsequent semester

US$ 6000 + Rs. 3,900

Besides above, the candidates will be required to deposit US$ 2000 p.a. (non-refundable) towards project expenditure along with admission/ semester fees. Any other fees, charges or dues at the same rate as payable by the Indian students of the same academic category and level payable in US $.

12. REFUND OF SECURITY

If the student does not join the programme after paying the dues and leaves the Institute, only security deposit as applicable shall be refunded, provided a written application is made by the student to the Director. No other amount shall be refunded.

13. FINANCIAL ASSISTANCE

13.1 Funded category: Available disciplines displayed in para 1 "Academic Programme and Eligibility Criteria" have all funded seats and includes seats sponsored by the Institute, as well as seats with fellowships under government funding agencies such as DST, DBT etc.Financial assistance provided by the Institute shall be Rs. 12,000 p.m. to M.Sc.holders and Rs. 14,000 to M.S.(Pharm.); M.Pharm.; M.Tech.(Pharm.) degree holders for first 2 years and Rs.14,000 p.m. and Rs. 15,000 p.m. respectively for the 3rd and 4th year.

13.2 The fellowship will be awarded subject to obtaining of minimum CGPA of 6.50 in each semester. In case the CGPA is less than 6.50 but more than 6.00 the stipend of the student shall be withheld till he/she obtains the minimum CGPA of 6.50 as per the terms and conditions of the Institute. The tenure of the fellowship will be three years with possible extension upto a maximum tenure of five years.The fellowships are renewable every year as per Institute rules subject to satisfactory progress and good conduct. The student has to provide assistance of 8 hours per week to the Institute.

14. REGISTRATION/ORIENTATION

14.1 Every student has to register himself/herself before the commencement of each semester according to the schedule and procedure laid down by the Institute. The date, time and venue will be announced in advance. The courses offered by the departments will be made known to the students at the time of orientation.

14.2 The student has to register in person. A student, who fails to get himself/herself registered, will no longer be considered as a student of the Institute. If a student is unable to appear for registration personally on account of illness or similar circumstances which are beyond his/her control he/she may appear for late registration. In genuine cases, the Dean may approve late registration on payment of late fee. Registration in absentia may be allowed only in exceptional circumstances at the discretion of the Dean.

15. CREDIT SYSTEM

15.1 Education in the Institute will be organised around the credit system.

15.2 Each course will have a certain number of credits which will describe its weightage. The performance/ progress of the student will be measured by the number of credits that he/she has completed satisfactorily. A minimum grade point average will be required to qualify for the degree.

15.3 Every course will be co-ordinated by a faculty member of the department offering the course in a given semester. This faculty member will be called the course co-ordinator. The co-ordinator will have the full responsibility to conduct the course, co-ordinating the work of the other members of the faculty involved in that course, holding tests and assignments and awarding the grades. In case of any difficulty the student is expected to approach the course

co-ordinator for advice and clarification. However, the overall academic activities of a department will be supervised by the Head/Incharge of the respective department.

16. QUALIFYING CRITERIA FOR AWARD OF DEGREE

16.1 Students are required to attend every lecture and practical class during the semester: provided that in the case of late registration, sickness and other contingencies the attendance required will be a minimum of 75% of mandatory attendance in a course. Failing this, he/she will not be permitted to appear in the end-semester examination of that course in that semester and the student will have to complete all requirements of that course in the subsequent year when the course is held again.

16.2 M. S. (Pharm.); M.Tech. (Pharm.); M.Pharm. degree holders of NIPER getting into the Ph. D. programme will have to complete doctoral courses of minimum 12 credits and all other students will have to complete minimum of 28 credits of which atleast 16 credits should be from the specialisation.

16.3 The minimum CGPA requirement will be 6.50. If the CGPA is within 6.00 to 6.50, he/she will be asked to take more courses in order to make up the required CGPA. If CGPA is below 6.00 at the end of any semester, he/she will have to discontinue the Ph. D. programme.

16.4 A student will be formally registered/ admitted to the candidacy of Ph. D. degree only after clearing the comprehensive examination which he/she will be permitted to take only after the submission of a research plan and completion of the course work. A maximum of two attempts (not in the same semester) will be allowed to any student to clear the comprehensive examination. A student must formally register for Ph. D. after completing the comprehensive examination.

16.5 The student will be required to be registered for a period of not less than three years but in exceptional cases the minimum registration period may be reduced to two years with the approval of the Senate.

17. CAMPUS PLACEMENTS

The Institute has a dedicated Placement cell which maintains excellent contacts with the Pharmaceutical Industry/Corporate Sector and assists in placement of students (except for students from Public/Private Sector Undertakings, Govt. Departments and Research and Development Organizations and NRI and their wards) in various organizations having National and International operations. The cell co-ordinates the placement activities to match the needs of the industry as well as the aspirations of the students, by arranging pre-placement talks and conducting campus interviews. The companies that conducted campus interviews in 2009-10 are Johnson & Johnson, Astra Zeneca, Procter & Gamble, Syngene International, Torrent, Zydus, GSK, Unilever, Cognizent, Pharm Arc Solutions, Ranbaxy, Sun Pharmaceutical, Promed , Smart Analysis, Kinapse, Zydus, Vivo, Indegene, Saurav Chemicals, Astra Zeneca, Nicholas Piramal, Bayer Healthcare, Integral Bioscience Pvt. Ltd., Quantum Solutions and many more.

18. MEASURES AGAINST THE MENACE OF RAGGING

Ragging in educational institutions is banned by Hon'ble Supreme Court of India. Court has issued mandatory orders to curb the menace of ragging (Annexure-5). If a student is found to have indulged in ragging, he/she shall be awarded severe punishment, like expulsion from hostel or mess. In serious cases, the student can be expelled from the Institute or FIR can be lodged against him/her with the nearest police station. The punishment shall also be in the form of fine, public apology or withholding of result. Students who join the institute are required to submit an undertaking in this regard in the format provided at Annexure-3. They shall also submit an undertaking from their parents in the form provided at Annexure-4 at the time

of interview/Admission.

19. INFRASTRUCTURE

The academic campus includes various teaching and research blocks, a computer centre, a library, a bioavailability centre, an impurity profiling and stability testing laboratory and central instrumentation laboratory, an animal house and a pilot plant. Though each department is a separate entity, all the Departments/Centres together constitute an integrated complex. Lecture theatres with modern amenities and equipment for projection have been located adjacent to the teaching and research blocks. An Auditorium with a seating capacity of four hundred and a convention centre with a number of conference rooms and seminar halls are also available.

19.1 Central Instrumentation Laboratories

The central instrumentation laboratories are equipped with major instruments like 400 and 300 MHz FT-NMR (Bruker), 60 MHz FT-NMR (Jeol), GC-MS and GC with Head Space (Shimadzu), MS/TOF (Maxis, Bruker), LC-MS/MS (Thermo), MALDI – TOF-TOF Mass spectrometer (Bruker), FT-IR with ATR (Nicolet), FT-IR with microscope (Perkin Elmer), UV-VIS Spectrophotometer (Beckman), Elemental analyzer (Elementar), DSC (Mettler), TGA (Mettler), Micro DSC (Perkin Elmer), Powder XRD (Bruker), Polarimeter (Rudolph), Capillary Electrophoresis (Beckman), Atomic Absorption Spectrophotometer (Analytic Jena), Ultra Centrifuge (Beckman), Titration (Metrohm), Luminescence Spectrometer (Perkin Elmer), Analytical HPLC with PDA &UV detectors (Shimadzu), Lyophilizer (Heto), UPLC etc.

19.2 Computer Centre

The centrally airconditioned Computer Centre operates sixteen hours a day and caters to the needs of faculty and students for their research and teaching. Computer Centre manages and administers high computing and other services such as DTP. Computer Centre helps the institute community by managing computing resources which are available centrally or in various departments.

All the servers, computers and printers in the Centre are connected through a 10/100 Mbps network. Campus Wide Networking is available.

Internet and email services are provided to all users through a dedicated 128 Kbps Internet link.

Users can use the computing resources of the institute from their residences by dialing through a modem.

The Centre supports database packages, Compilers (C, C++, FORTRAN etc.), PC Nonlin, Scientist, ChemOffice, Pallas, Sigmastat, Sigmaplot, VC++, Visual Basic, Visual Java, Endnote, Acrobat Suit, Linux operating system, Windows NT environment and most of the popular Microsoft products like Office 97/2000/ XP, Back Office etc.

The computer centre personnel are qualified to develop customized software for various end applications. NIPER has also subscribed to the Scientific and Technical Information Network (STN), a scientific online service information provides access to more than 200 scientific and technical databases on chemistry, pharmaceutical sciences and biotechnology. Besides, this Computer Centre provides online access to the “Sciencedirect” and the “BioMedNet Review from Elsevier Science.

19.3 Library and Information Centre

The library is being developed in a manner that it can eventually gain the status of National Library and Information Centre on Pharmaceutical Sciences. A beginning has been made with the subscription of 62 international and 59 national journals. The library has Chemical Abstracts from 1907 till date and cumulative indices up to 13th edition. A number of CD-ROM databases such as International Pharmaceutical Abstracts and Drug Information Full Text (1977-1997), Ekaswa, Syntheline, MFline and DRUGDEX are also available. The library is accessible to all the pharmacy professionals from the country and abroad, and

provides information to the academia, researchers and the industry personnel.

The library has obtained institutional membership of DELNET, Chandigarh Libraries Consortium, British Library (Chandigarh), Current Science Association (Bangalore), and Association of Indian Universities (Delhi) etc. It has more than 6223 books, 17268 bound volumes of journals, theses, Pharma Market reports and about 203 CD-ROMs.

19.4 Central Animal Facility

The Central Animal Facility is built with state-of-art technology where different species of small laboratory animals such as Mice, Rat, Mastomys, Gerbils, Hamster, Guinea Pig, and Rabbits are bred and maintained. The building is designed as 'Two Way Corridor System' to minimize the cross-contamination. The whole facility is centrally air conditioned with 100% fresh air exchange in animal rooms and uninterrupted power supply. The macro- and micro-environment around the animals is maintained as per CPCSEA guidelines. Separate building for holding of infective and non-infective experimental animals is available. Independent horizontal steam sterilizers are provided for sterilization of all material entering the animal rooms and disinfection of waste from infective animal experimentation unit. All biohazardous waste are disposed off through an environment friendly incinerator.

19.5 National Bioavailability Centre

The National Bioavailability Centre of the Institute is capable of conducting bioequivalence studies in healthy volunteers. Already a few industrial projects have been completed and many more are planned. The centre has been accredited by WHO and is one of the two centres in the world for conducting bioequivalence studies of the fixed dose combinations of antitubercular drugs. The centre in close collaboration with hospitals around Chandigarh is also involved in conducting pharmacokinetic studies in patient population.

The centre has a 24-bedded air conditioned volunteer room, a doctor's room, two sample collection rooms, a sample processing room and an analytical lab fully equipped to carry out the *in vitro* evaluation of different formulations and quantitative estimation of drugs in *in vivo* samples. The analytical lab is equipped with modern models of different equipments to name a few Water Alliance HPLC system with Photodiode Array, UV/vis and fluorescence detectors, Shimadzu GC-MS QP2010, Perkin Elmer' Spectrophotometer Lambda 35 and Spectrofluorimeter LS 55, Refrigerated centrifuge 6K 15 from Sigma, Vacuum concentrator (Maxi dry plus) from Heto, Nitrogen purger from Zymark (Turbovap LV) in addition to Haematology Analyzer (Sysmex from Transasia) and other routine equipments.

19.6 Impurity Profiling and Stability Testing Laboratory

NIPER is the first institute in the country to initiate impurity profiling studies that are required as per the latest international regulatory requirements. Already, several industrial projects have been handled involving method development for separation, synthesis and isolation of impurities and their characterization. For this purpose, the laboratory is equipped with multiple HPLCs, LC-MS-TOF, LC-MS and LC-NMR. Also, the laboratory is equipped with thermostatically controlled humidity chambers with computerised data recording facilities for carrying out stability tests as per ICH/US FDA/WHO guidelines.

Specialized services are offered with respect to the following: Stress test studies and establishment of stability-indicating assays; stability storage and testing services, establishment of analytical methods for impurity profiling studies, determination of the levels of individual and total impurities, and isolation of impurities and their characterization.

19.7 Technology Development Centre

The Institute undertakes economically viable

sponsored projects for development & scale up of projects in the field of Active Pharmaceutical Ingredients, Herbals & Dosage Forms.

19.8 Pharmacological and Toxicological Screening Facilities

The Institute can carry out:

- Pharmacological screening of NCE's
- Safety pharmacology
- *in vivo* Mutagenicity
- *in vitro* Cell proliferation and cytotoxicity
- Radio-receptor binding assays and
- Regulatory toxicological testing viz, acute and subchronic toxicity testing.

19.9 Computer Aided Drug Design Laboratory

The Computer Aided Drug Design Laboratory of the Institute has Silicone Graphics Octane and Silicone Graphics Fuel main frame computers with various molecular modeling packages such as SYBYL, PC SPARTAN PRO, CHEM-X, AMBER, Gaussain 98, Protein Data Bank, and Alchemy etc. The objetive of this laboratory is to rationally design new chemical entities for various therapeutic areas. The laboratory also imparts training in molecular modeling to scientist, research students from other universities/ Institutes.

19.10 Combichem Research Laboratory

The Institute has created a Combichem Research Laboratory. The fully automated Multiple Organic Synthesiser with on-line analytical facility is enabling high speed solution and solid phase synthesis of libraries of molecules. The multiple vessel reaction platforms make the synthesis feasible under various conditions such as low temperature (up to -80 degree C), high temperature (upto 200 degrees C) and high pressure. Apart from its own research needs, the Institute makes this facility open for custom synthesis of small molecules libraries and training researchers from pharmaceutical companies and other institutions/ organisation.

19.11 Peptide Synthesis and Research Laboratory

The Instiute has also created state-of-the-art solid phase peptide synthesis facility. The peptide synthesis is carried out on a fully automated CSBIO-136 peptide synthesizer by a team consisting of expert peptide chemists. The facility is capable of synthesizing up to 12 amino acids containing peptide in 24 hours by using both t-Boc and Fmoc peptide synthesis protocols. The institute is open to inquiries related to custom peptide synthesis from various pharmaceutical companies, research institutes and agencies interested in peptides for research.

19.12 Hostels

NIPER offers on campus hostel facility to all the students. Residential accommodation on single/ double occupancy basis is available for both boys and girls. The girls hostel is independent facility within the campus. In addition to basic furniture in the rooms, the hostels are also equipped with entertainment facilities, like colour T.V. with dish connection, Table-Tennis, Carrom Board, News Papers, etc. The food for the hostellers is managed on the basis of a cooperative mess run by a committee of students on rotation basis. Limited hostel accommodation for married students is also available.

20. RESEARCH PROGRAMMES

20.1 Medicinal Chemistry

- Identification and validation of novel target sites for various therapeutic areas: Design and synthesis of anticancer, antiprotozoal, antihypertensive, antibacterial, antidiabetic compounds and multi-drug resistance reversal agents.
- Asymmetric synthesis: Development of methodologies for catalytic asymmetric synthesis-dynamic kinetic resolution, asymmetric protonation/

deprotonation, asymmetric epoxidation, asymmetric aziridation and asymmetric alkylation. Synthesis of chiral drugs.

- Combinatorial Chemistry: Development of novel linkers and analytical protocols; generation of molecular libraries; synthesis of unnatural amino acids and their incorporation in the peptides of biological importance by using solution- and solid- phase synthesis protocols.

- Eco-friendly Processes: Development of new methodologies under solvent free condition, surface mediated reactions, microwave/ ultrasound assisted enhancement of reaction rates.

- Carbohydrate Chemistry: Oligasaccharide synthesis using appropriately protected monosaccharide building blocks, synthesis of carbohydrate-based tetroxane antimalarials.

- Computer Aided Drug Design: Molecular modeling methods based on molecular mechanics, Quantum mechanics. Analog based design of á or ^ Kinase, Phosphatase, Protease, HMG-CoA reductase, selective COX-2, and selective PDE4 inhibitors. PPAR- ??(^) and Angiotensin receptor antagonist, Alzeimer dementia by 3D-QSAR, CoMFA, and docking methods.

Heterocyclic chemistry: Development of novel multicomponent reactions, rational design and synthesis of heterocyclic compounds, especially purine and indole class of natural and unnatural products specific to biological target. Synthesis of 5 and 6 membered nitrogen and sulfur containing heterocycles from thiosemicarbazide derivatives and evaluating their biological importance.

Organometallic chemistry: Development of transition metal catalysts and reagents, their characterization and utilization in various synthetic transformation and functionalizations leading to the preparation of different biologically active compounds.

Peptide Chemistry: Design of peptides, peptidomimetics and proteomimics; combinatorial peptide library synthesis.

20.2 Natural Products

Drug discovery:

- Discovery of new chemical entities (NCEs) from natural products of terrestrial, microbial and marine origin in the following therapeutic areas:

- Anti-diabetics, Antioxidants and immunomodulation, Adaptogens, Anti-inflammatory agents, Gynaecology and endocrine dysfunction, Anticancer agents with apoptotic molecular basis, Antiprotozoal and antiinfective agents.

- Development of *in vitro* testing models for screening of natural products, in the above mentioned therapeutic areas.

- Semisynthesis and synthesis of biologically active compounds alongwith generation of pseudonatural products.

Traditional Medicine:

- To lay down standards and effective quality controls on the Herbal Medicinal Products

- To create databases for identification and authentication of materials with well defined botanical and phytochemical characteristics.

- To create libraries of marker/characterizing constituents for positive chemical identification of materials through chemo-profiling

- To create quantitative standards for extracts and their formulations through chemo- and bio-profilings.

- To create standard protocols for establishing purity of materials, identification of adulterants, substitutes, pathogenic bacteria and fungi, heavy metals and pesticide residues.

- To develop dosage forms of the herbal products and their stability studies.

- To develop bioavailability protocols for herbal medicinal products with the help of biomarkers.
- To conduct clinical trials of the scientifically developed formulation and validate the traditional claims.
- To understand synergy between components of a medicinal plant, that have been described at a molecular level giving credence to the biomarker concepts apart from well understood chemical marker concepts.

Process technology:

- To develop Agrotechniques of commercially important medicinal plants with high active component.
- Development of tissue/cell suspension cultures for production of secondary metabolites
- Development of analytical methods for phytochemicals.
- Development of nutraceuticals with the clear cut structure-function relationships for quality dietary supplements

20.3 Pharmaceutical Analysis

- Physico-chemical characterization of new chemical entities.
- Forced degradation (stress testing) and stability kinetics studies.
- Preformualtion studies
- Validated analytical method development including stability-indicating assays
- Accelerated stability testing
- Impurity profiling of drug substances
- Preparation of degradation product standards

20.4 Pharmacology and Toxicology

- Opioid tolerance, supersensitivity and dependence mechanisms
- Role of different subtypes of angiotensin receptors in hypertension and diabetic vascular complications
- Understanding the mechanisms of diabetic complication neuropathy and vascular development of NIDDM and insulin resistance models in rodents; screening of synthetic and natural products for their antidiabetic activity
- Role of alpha adrenoceptors in benign prostatic hyperplasia
- Development of novel therapeutic strategies for the treatment of acute cerebral ischaemia (stroke)
- Development of rat model for Alzheimer's disease and screening of NCEs on learning and memory in rats
- Production of monoclonal antibodies against *Plasmodium* yoelii *nigeriensis* antigens with the objective of characterization of protective antigens
- Molecular mechanisms of protection, cytoadherence, immune evasion and red cell invasion in malaria
- Biotherapeutics and chemotherapeutics evaluation of potential antimalarial, antitubercular, antileishmanial and antiamoebic agents *in vitro* and *in vivo*
- Study of the opioids-induced bidirectional molecular signaling within the neuroimmune network with a view to develop new immunomodulators

20.5 Pharmaceutics

- Development and evaluation of peroral controlled release systems.
- Development and evaluation of buccal and transdermal drug delivery systems.
- Biopharmaceutic and pharmacokinetic studies including bioavailability and bioequivalence studies.

- *In vitro* and *in vivo* evaluation of conventional and new drug delivery systems.

* Surface modification for improved biocompatibility of medical devices.

* Synthesis and characterization of new biodegradable polymers for NDDS.

* Nano/micro particulate formulation for the drugs difficult to deliver and targeted drug delivery.

20.6 Biotechnology

- Targeting signal transduction involved in microbial drug resistance.

- Identification of new target protein(s) in insulin mediated signal transduction and in insulin resistance.

- Enzyme drug interaction of medically important enzymes (Xanthine oxidase, HMG-CoA reductase etc.)

- Membrane drug interaction for better understanding of tissue specific drug targeting

- Proteomic analysis of yeast and mammalian cell to identify genes that regulate aging and knowledge based pathway building using informatics to understand set of circuits involved human longevity

20.7 Pharmaceutical Technology

Bulk Drug:

- Chemo-enzymatic routes for bulk drug substances.

- Process development for enantiomerically pure drugs.

- Fermentation technology

- Chemical processing technology for natural products.

Formulations:

- Preformulation studies of new molecular entities.

- Prototype formulation development and product/ process challenge studies on solid and liquid dosage forms.

- Solid state characterization of pharmaceuticals.

- Generation and characterization of polymorphs, pseudo-polymorphs and amorphous form; their effect on product performance.

- Identification of solid state characteristics of the API in solid dosage forms.

- Improved powder properties using particle engineering and co-processing of pharmaceuticals.

- Improvements of aqueous solubility using high energy amorphous form and lipidic systems.

- Intestinal permeability studies and permeation enhancement of drugs.

- Stabilization of protein drugs during pharmaceutical unit operations processes.

Biotechnology:

- Lipase catalysed reactions for the synthesis of enantiomerically pure isomer from the racemic mixture of drugs.

- Use of nitrilase, a biocatalyst, for the enzymatic kinetic resolution of racemic mixture of pharmaceutically active compounds to enantiomerically pure isomer.

- Applied recombinant DNA technology for production of commercially important biochemicals

20.8 Pharmacy Practice

The Department of Pharmacy Practice has been established in 2002 in collaboration with the School of Pharmacy, University of London, UK to impart education in the acquisition, integration and application of new pharmacotherapeutic knowledge to the care of patients. The development of skills emphasizing professionalism and personnel responsibility, life-long learning, communication,

critical thinking and decision making are the primary focus of the educational program of the department. The main objectives are:

- Development of interdisciplinary research programs.
- Leadership in national, state and local professional associations and a strong role in developing future practice standards and models.

The department has an interface with the major hospitals in the region e.g. Fortis Heart Institute and Multispeciality Hospital (Mohali) and Post Graduate Institute of Medical Education and Research (Chandigarh) and has "Higher Education Link" program.

- Development of long-term functional practice skills.
- Development and practice of systematic approach for identification and finding solutions of drug-related problems.
- Implementation of Good Pharmacy Practice Points for clinical pharmacists and for clinical pharmacy educators.
- Research leadership in desired areas of excellence and developing areas especially pertaining to the rural health.

The department collaborates with external agencies like the World Health Organization (WHO), Delhi Society for Promotion of Rational Use of Drugs (DSPRUD), pharmaceutical forums, hospitals and community pharmacists. The current research activities are in progress in the following areas viz. Pharmacoeconomics & Qol assessments, Medication, Errors, Drug Interactions, Prescribing patterns/preferences of physicians and the impact of patient education in various disease states.

Pharmacoinformatics

Drug discovery research has become much more complex science requiring a multidisciplinary approach. Converging concepts of several disciplines such as molecular biology, chemistry, toxicology, pharmaceutical sciences and computational technology has become more than a trend in education. Keeping this in view this new discipline was introduced in the academic programme of the Institute in 2002.

The objectives are:

- To teach the science and art of "New Millennium Drug Discovery"
- To teach the information management and integration technique in the field of Biology and Pharmacy Practice
- To integrate diverse information into discovery knowledge by exploiting the advantage of emerging fields like bio-informatics, chemo-informatics, toxico-informatics, pharmacy-informatics etc.

Annexure-1

MEDICAL CERTIFICATE

(To be submitted at the time of admission)

1. Name: _____

2. Father's Name: _____

3. Date of Birth: _____

4. Identification Marks: _____

a) Height _____ b) Weight _____ c) Vision

i) Night Blindness _____ ii) Colour Blindness _____

d) Report on any Physical Deformity_____

LABORATORY EXAMINATION

(i) Routine Urine Test _____

(ii) Report on Hb,TC,DC,ESR of blood and blood group _____

(iii) Routine Stool Test _____

(iv) Report on latest PA view X-ray of chest_____

(v) Report on blood pressure _____

(vi) Report on ECG _____

I certify that: -

(i) I have carefully examined Mr./Ms. _____in my presence.

(ii) He is not suffering from any mental or bodily disease / infirmity making him unfit for/ likely to make him unfit for higher studies.

Signature of Medical Officer

Full Name _____

Registration No. _____

Designation _____

Dated _____ Name of Hospital _____

Report should be signed by a Registered Medical Practitioner of a Govt. hospital, not below the rank of Asstt. Civil Surgeon/Physician

Annexure-2

(To be submitted on letter head of the Sponsoring Organization alongwith the print out of online Registration slip)

SPONSORSHIP CERTIFICATE

It is to certify that Mr./Ms. _____ is a bonafide employee of our Organization and has been working here as _____ *(designation)* since _____ *date*. As per records available with our Organization Mr./Ms. has a total experience of 2 years/more than 2 years in our Organization and other Organizations, he/she has worked earlier. In the event of admission of Mr./Ms. _____ in NIPER, he/she would be treated on duty with usual salary and allowances. He/she will be relieved for the period for pursuing his/her studies and that the fee of the candidate including project cost will be paid by us.

I understand that in the event of our withdrawl of sponsorship to the student at any stage during the duration of the programme, Mr./Ms. _____ shall cease to be a student of the Institute from the date of withdrawal of sponsorship.

(Authorized Signatory)

Annexure-3

UNDERTAKING FROM THE STUDENTS AS PER THE PROVISIONS OF ANTI-RAGGING VERDICT BY HON'BLE SUPREME COURT

(Details given at section 18)

I, Mr./Ms. ....., Registration No.....,Program/Discipline:..... Dept....., student of National Institute of Pharmaceutical Education and Research, S.A.S. Nagar do hereby undertake on this day……month……..…year ……, the following with respect to above subject.

1) That I have read and understood the directives of the Hon'ble Supreme Court of India on anti-ragging and the measures proposed to be taken in the above references.

2) That I understand the meaning of Ragging and know that the ragging in any form is a punishable offence and the same is banned by the Court of Law.

3) That I have not been found or charged for my involvement in any kind of ragging in the past. However, I undertake to face disciplinary action/legal proceedings including expulsion from the Institute if the above statement is found to be untrue or the facts are concealed, at any stage in future.

4) That I shall not resort to ragging in any form at any place and shall abide by the rules/laws prescribed by the Courts, Government of India and the Institute authorities for the purpose from time to time.

Date: _____ Signature of Student

Place: _____

Annexure-4

UNDERTAKING FROM THE PARENTS AGAINST RAGGING

(Details given at section 18)

I, …… am the father/mother of ……..... ....., Registration No....., Program/Discipline:.....Dept....., National Institute of Pharmaceutical Education and Research, S.A.S. Nagar do hereby fully endorse the undertaking made by my son/daughter/ward and also endorse the following:-

1) That I will be responsible for the conduct of my ward during his / her study in the Institute. That I shall visit the Institute at regular intervals to enquire about my ward's progress and conduct.

2) That I know that the ragging in any form is a punishable offence and the same is banned by the Court of Law.

3) That my son/daughter/ward has not been found or charged for my involvement in any kind of ragging in the past. However, my son/daughter/ward shall face disciplinary action/legal proceedings including expulsion from the Institute if the above statement is found to be untrue or the facts are concealed, at any stage in future.

4) That my son/daughter shall abide by the rules/laws prescribed by the Courts, Govternment of India and the Institute authorities for the purpose from time to time.

Date: Signature of Mother/Father and or Guardian

Annexure-5

MENACE OF RAGGING AND MEASURES TO CURB IT

"Ragging" means causing, inducing, compelling or forcing a student, whether by way of a practical joke or other wise, to do any act which detracts from human dignity or violates his/her person or exposes him/her to ridicule, or compels him/her to forbear from doing any lawful act, by intimidating, wrongfully restraining, wrongfully confining or injuring him/her by using criminal force to him/her, or by holding out to him/her any threat of such intimidation, wrongful restraint, wrongful confinement, injury or the use of criminal force. Ragging being an evil practice, is inhuman, illegal and punishable. It violates the discipline of an educational institution and adversely affects the standards of higher education. Ragging in any educational institute is banned by the Hon'ble Supreme Court of India. The court has issued mandatory orders to curb the menace of ragging in educational institutions. If an applicant for admission is found to have indulged in ragging in the past or it is noticed later that he/she has indulged in ragging, his/her admission may be refused or he/she shall be expelled from the educational institution. The punishment may also be in other forms, such as suspension from the classes for a limited period, or fine with a public apology, debarring from representation in events, withholding results, suspension or expulsion from hostel or mess, and the like. If the Head of the Institution is not satisfied with these arrangements for action, a First Information Report (FIR) can be filed without exception by institutional authorities with the local police. The discretionary power vests solely with the Institute Authorities.

Acts Amounting to Ragging could be:

- Teasing, Embarrassing and Humiliating;
- Assaulting or Using Criminal Force or Criminal Intimidation;
- Wrongfully Restraining or Confining or causing Hurt ;
- Causing Grievous Hurt, Kidnapping or Rape or committing Unnatural Offence.;
- Causing Death or Abetting Suicide.

Supreme Court of India has made the following recommendation for immediate implementation:

- The punishment to be meted out has to be exemplary and justifiably harsh to act as a deterrent against recurrence of such incidents;

- Courts should make an effort to ensure that cases involving ragging are taken up on priority basis to send the correct message that the ragging is not only to be discouraged but also to be dealt with sternness;

- In the prospectus to be issued for admission by educational institution, it shall be clearly stipulated that in case the applicant for admission is found to have indulged in ragging in the past or if it is noticed later that he has indulged in ragging, admission may be refused or he shall be expelled from the educational institution;

- Role of the concerned institution shall also be open to scrutiny for the purpose of finding out whether they have taken effective steps for preventing ragging and in case of their failure, action can be taken against them too;

NIPER, S.A.S. Nagar is committed at removing ragging in all forms. In compliance to the guidelines laid down by the Hon'ble Apex Court of the country.