



## New Face



### Prof. Vimalkumar Singhai

Prof. (Dr.) Vimal Kumar, M. Pharm, Ph. D. has recently joined Institute of Pharmacy as a Professor & Head, Pharmacognosy. Dr. Kumar is having more than 14 years of teaching and research experience. He has been nominated as a member of editorial board of eight National and International Journals & Text Editor of "Pharmacognosy Review", Associate Editor of Journal "The Pharmacist" & Executive Editor of Journal "International Journal of Pharmaceutical Sciences & Research". He is nominated as a Joint Secretary of Indian Society of Pharmacognosy.

## Faculty Achievements

- Prof. Manjunath D. Ghate visited Plovdiv University, Plovdiv, Bulgaria in connection with DST sponsored Indo-Bulgarian collaborative project during 15<sup>th</sup> to 31<sup>st</sup> May 2010. During his visit he has delivered a talk on Synthesis and Biological activity of Heterocycles and it was attended by postgraduate and faculty members of Plovdiv University, Bulgaria. He also visited University of Sofia, Sofia, Bulgaria.
- Second edition of the book "Practical manual of Pharmaceutical Engineering" by Prof. Tejal Mehta, IP-NU, is published in December 2009.

## Research Grants

- Mr. Kuntal Manna received grant of ₹1,50,000 from Gujarat Council on Science and Technology, Department of Science and Technology, Government of Gujarat for the promotion of Pharmaceutical Research, entitled 'Calixarene Analogs and their Pharmaceutical Applications'.
- Mr. Nrupesh Patel and Mr. Vivek Vyas received grants of ₹1 Lac, Ms. Nagja Tripathi received grants of ₹80,000 and Mr. Jigar Shah and Ms. Shraddha Bhadada received grants of ₹50,000 for minor research project from NERF.
- Mr. Vivek Vyas received first prize for paper entitled "Need for Reforms in Evaluation System in Higher Education" presented in two days NAAC sponsored National Seminar on "Present scenario of Quality Assurance in Higher Education" held on 26<sup>th</sup>-27<sup>th</sup> March, 2010 at B.R. Nahata College of Pharmacy, Mandsaur, MP.

## Forthcoming Events

- NIRMAQUEST – A state level competition is going to be organized in the month of December 2010.
- A National Seminar Entitled: "Natural Products: Scope and Status by 2020" is going to be held on 18<sup>th</sup>-19<sup>th</sup> February 2011.

## New Programmes Introduced

- Two new programmes were introduced from 2010-2011. They are
- M. Pharm in Drug discovery (intake 5 students) – 4 semester
  - Post B. Pharm certificate programme in clinical pharmacy (intake 120 students) – 2 semester

## Ph.D. Awarded

- Mrs. Niyati S. Acharya. Assistant Professor, Department of Pharmacognosy, Institute of Pharmacy, has been awarded Doctor of Philosophy (Ph.D) in Pharmacy by Gujarat University for her thesis entitled "Gmelina arborea Roxb. : Isolation and characterization of bioactive principles under the guidance of Prof. D. D. Santani." 
- Ms. Bhoomika R. Goyal has been awarded degree of Doctor of Philosophy in Pharmacy for her thesis entitled "Effect of spironolactone and telmisartan on cardiovascular complications" from Gujarat University under the guidance of Prof. Anita A. Mehta. 
- Mr. Mayur M. Patel, has been awarded degree of Doctor of Philosophy in Pharmacy for his thesis entitled "Design, Development and Optimization of Colon Targeted Drug Delivery Systems" from Nirma University under the guidance of Prof. Avani F. Amin. 

## Answers to the Pharmacrossword

- |                       |                     |
|-----------------------|---------------------|
| <b>Across Answers</b> | 15. Codecart        |
| 1. Across Answers     | <b>Down Answers</b> |
| 2. Vaccines           | 1. Resistance       |
| 4. Heparin            | 3. Tpn              |
| 6. Reconciliation     | 4. Highalert        |
| 9. Coumadin           | 5. Vancomycin       |
| 10. Pyxis             | 7. Aminoglycoside   |
| 11. Allergy           | 8. Interact         |
| 13. Chemotherapy      | 12. Levaquin        |
| 14. Cultures          |                     |

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## From the Director's Desk...

Radiance, the Newsletter of the Institute of Pharmacy, Nirma University endeavors to showcase the academic and scholarly achievements. It aims at encouraging our faculty, talented students, budding researchers and pharmacists, all of whom constitute a precious part of our organization.



Our Institute aims at nurturing our students and faculty by organizing various seminars, workshops and symposiums. Veterans in the profession are frequently invited for delivering professional talks which are enlightening to the students and faculty. The outstanding results of the students at the GPAT Examination are a consequence of the joint effort of the students and faculty. This has led them to find a place in NIPER and leading universities of the USA /UK. The postgraduates are serving at various Universities and Pharmaceutical Industries and abroad.

Separate infrastructure is available for undergraduate and post graduate courses at the Institute of Pharmacy. The Institute runs full fledged 17 UG and 7 PG Laboratories to carry out research projects and consultancy work. The Institute provides Computer centre, Class Room, Reading room, Medicinal Plant Garden, Machine Room etc. to students for their study / research purpose. The Institute also provides rigorous training to the UG and PG students and continually apprises them of new developments in science and technology.

I am thankful to our dynamic management for their unflinching support. Our President Dr. Karshanbhai K. Patel, Vice President Shri Ambubhai M Patel and Director General Dr. N. V. Vasani have consistently supported us in all our endeavors.

I congratulate the faculty and students of the Editorial Board of RADIANCE, who have strived hard to bring forth the fourth Newsletter of the Institute which reflects their continuing effort and contribution.

**Prof. Manjunath Ghate**

“A drop of ink makes thousands think. If you've learned to read, you can learn to succeed”





It's my privilege to edit the first issue of fourth volume of "Radiance" – The news letter of Institute of pharmacy, Nirma University as an editor.

"Education's purpose is to replace an empty mind with an open one."

Institute of Pharmacy had taken steps in direction to explore out the creativity of students and radiance is one of the platforms for the same. The events and expert lectures give idea about the activities organized at the institute while latest affairs in pharma field and newer developments in drug are included to quench the thirst of knowledge of readers. The successful release of radiance is ascribed to contribution by editorial board, the faculty, and all students who audaciously worked with me for compiling the issue. We earnestly hope that you will surly enjoy the reading of this issue.

Feedbacks from the readers are highly valuable for us and welcomed at radiance.ip@nirmauni.ac.in

With best regards,

Dr. Shital Bariya

## Editorial Board

### EDITORS



Dr. Shital Bariya



Ms. Shraddha Bhadada



Mr. Kuntal Manna

### STUDENT MEMBERS :

Mr. Harsh Shah	Mr. Daxesh Patel
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Ms. Suchi Raghunathan	Ms. Heta Desai
Mr. Ravi Ukawala	Mr. Anand Odedra
Mr. Devang Patel	Mr. Kunal Assar



## Pharmacy Profession: Today and Tomorrow

Mr. Rishikesh Raval, Vice-President, HR & CC Cadilla Healthcare Ltd.

"There is a need for enhanced collaboration among industry, academic institutions, medical fraternity and government, for India to be one of the leading countries in Pharmaceutical manufacturing and research"

In the past decade, Indian Pharmaceutical Industry has witnessed significant changes with newer drugs hitting the market covering a greater variety of disease conditions than ever. To accelerate these advances of drug development and new products into this decade, pharma industry requires fresh talent from pharmacy institutes to step in and start contributing to these advancements. This industry expectation poses a greater challenge for pharmacy institutes. Any delay on part of pharmacy institutes to meet this industry demand, will be acutely felt by the coming generations of our students. The institutes need to prepare the students to meet challenges and professional requirements in Post-GATT era.

### Pharmaceutical Industry in India: The Past

- Regulatory requirements, compliance and quality were TABOO.
- Manufacturing cost was fraction of sales hence very little significance of manufacturing efficiency.
- Operational improvements were considered as compromise with quality.
- Dosage forms were simple.
- Exposure to regulated markets was negligible.

### Pharmaceutical Industry in India: Changed Scenario

#### Opportunity:

Indian pharma is now a \$20 Billion industry, growing at a steady state of ~ 10-12 % & expected to grow at 14-16 %, against the average global pharma growth of 5-6 %. By 2015, Indian pharmaceutical market is expected to touch \$40 billion. India is has highest number of USFDA approved plants outside US. Contract Manufacturing and Research is also a big opportunity and offering in this decade.

#### Complexity:

- Shift from immediate release products to delayed release & extended release/sustained release, multilayer fixed dose combinations, wurster coated (pellet), potent drug products.
- Big opportunity to develop Novel drug delivery

system like transdermal patches, metered dose inhalers, liposomes, microneedles, nanoparticles etc...

- Compliance to different regulatory Guidelines
- Demand Variations.
- Cost efficiency

### Necessity To Revamp Pharmacy Education:

To meet the above mentioned challenges there is a necessity to realign and add more value to the existing curriculum prescribed at pharmacy institutes. Academic institutions will have to prescribe the following subjects or topics in their curriculum more effective and specific to industry requirements. To make the academic curriculum more specific to industry requirements, the institutions should include following subjects / topics:

- Cellular / molecular biology and biotechnology
- Pharmacoepidemiology and advanced biostatistics
- To support novel delivery systems and devise, subjects providing advanced knowledge of Engineering, Science, Polymers and sophisticated instruments
- Operational excellence - Lean manufacturing , 6 sigma & KAIZEN
- Non credit courses / trainings on soft skill aspects like presentation skills, time management, team building, networking and interpersonal skills.

*Life is a big canvas, and you should throw all the paint you can on it.*





### CPCSEA Regional Workshop – Role of CPCSEA in Education and Research – 15<sup>th</sup> March 2010.

CPCSEA organized a workshop enlightening the role of CPCSEA in Education and research at Nirma University campus on 15<sup>th</sup> March 2010. The workshop was inaugurated by the esteemed chief guest Prof. R. K. Goyal, Vice-Chancellor, M.S. University of Baroda. Shri D. P. Chhaya, Executive Registrar, Nirma University was the guest of honour. The faculty at the Institute, Dr. Sanjeev Acharya and Dr. Shital Panchal contributed their mite as the organising committee members. Around 200 delegates attended the workshop.



Various esteemed speakers delivered their talk during the technical sessions. The renowned speakers were Shri Anjani Kumar, Member Secretary, CPCSEA, Dr. Mukul Jain and Dr. P.Y. Guru, Zydus Research Centre, Dr. Abhay Deshpande, Director, Jai Research Foundation, Dr. Tejal Gandhi, Anand Pharmacy college, Dr. H. N. Kher, Sardar Krushinagar Agricultural University, Dantiwada, Dr. S.K. Bhavsar, Anand Veterinary College, Ms. Snehal Bhavsar, SPCA, Baroda, Shri O.P. Joshi, Under Secretary, CPCSEA, Dr. Girish Joshi, Torrent Research Centre, Dr. Satish Bhande, Pranav Agro Industries Ltd, Pune.

Moreover, the manual of the Standard Operating procedures for Institutional Animal Ethics Committee was released during the workshop.

### Open House Career Guidance Seminar – 5<sup>th</sup> June 2010

Institute of Pharmacy, Nirma University (IP-NU) is organizing an open house career guidance seminar every year for the 12<sup>th</sup> pass students to guide them through the profession of Pharmacy. This seminar is a guide path for the students which give them complete information to develop their future in pharmacy profession. The students as well as parents are invited all over the state to participate in the programme. Approximately 50 participants have attended the seminar. Parents and students asked various questions regarding pharmacy and other issues related to it. The experts from IP-NU addressed all the questions very well and solved their ambiguities. The seminar was a success in catering the needs of the students as well as their parents regarding the scope of the pharmacy profession.

### Faculty Development Programme (FDP) – 15<sup>th</sup> to 17<sup>th</sup> June, 2010

Faculty Development is a critical aspect of the Institute's multifarious activities. There is a robust association between the continuing development of the institute's faculty and the development of the institution. Several initiatives were taken to mould the faculty to better equip them academically and improve their research orientation. A unique Faculty Development Programme, ably coordinated by Prof. Anuradha K. Gajjar, Academic Coordinator, IP-NU was conducted for the first time during the seven years of standing of the institute.



At the very outset, Dr. H.V. Trivedi, Director, Academic and Research Development Cell, NU discussed the "Evolving Culture of Continuous Quality". In-house senior faculty members Prof. Manjunath D. Ghate, Prof. Anuradha Gajjar, Prof. Tejal Mehta, Prof. Vimalkumar, and Dr. Sanjeev Acharya guided the other faculty members on various aspects to develop them academically. Besides, in-house faculty members, guest speakers were also invited Prof. P. N. Tekwani and Prof. Dhaval Pujara, Institute of Technology, and Mr. Vincent Vaz, Nirma University to speak on various topics such as learner centric teaching, academic counseling, and personal counseling respectively.

Shri Ambubhai M. Patel, Vice-president, Nirma University in his valedictory address as Chief Guest highlighted the need & importance of quality education among the students He also appreciated the efforts made by the Institute to cater the needs of the teachers and requested faculty members to take full advantage and acquire learning of good practices from the interactions during the programme

This programme facilitated the faculty members to be more action oriented and focused. After the programme the participants were able to open up their minds & brought them closer to each other.

### Industrial exposure:

The faculty at Institute of Pharmacy always strive to prepare the students to meet the challenges in the area of pharmaceutical industries for they are trained not only at the Institute for the varied instruments and



techniques employed but also exposed to the industrial set up also by arranging various industrial visits regularly. Recently, the students visited Zydus Healthcare Limited on 28<sup>th</sup> July, 2009.

### Orientation programme:

Every year, we have a unique tradition of organising an orientation programme for newly admitted B. Pharm and M. Pharm students wherein eminent speakers from various fields enlighten the students not only about the profession of pharmacy but also guide them to build their career on a right path and in a proper way. The orientation programme was held from 12<sup>th</sup> August to 17<sup>th</sup> August 2010. Dr. Bhaswat S. Chakraborty, Senior Vice-President, Cadila Pharmaceuticals Ltd., Dholka graced the inaugural function as our chief guest whereas Shri D. P. Chhaya, Executive Registrar, NU presided over the function. Various renowned speakers like Mr. Ashwin V. Parikh, Managing Director, International Business Development, Swamiji from Akshaypatra Foundation, Gandhinagar, Dr. Sunita Goswami, Senior Faculty, Pharmacology Department, L.M. College of Pharmacy, Dr. Vikas Shirsath, Chief Scientific Officer, Oxygen Healthcare Research Pvt. Ltd. Ahmedabad shared their experiences with our students.

Besides the new entrants, we also have a tradition of organizing orientation programme for the existing students every year in the starting of their new semester. Various lectures were delivered during the programme which included soft skills, communication skills, learning skills, time management, ethics, preparing for interviews, confidence building etc. Moreover it recharges them for their next upcoming year. This year the orientation was held on 21<sup>st</sup> and 22<sup>nd</sup> June 2010 where Dr. H.V. Trivedi graced the inaugural function.

### Workshop on Modern Equipments for Formulation Development

19<sup>th</sup> – 20<sup>th</sup> August, 2010

A Two day Workshop on "Modern Equipments for Formulation Development" was organized on 19<sup>th</sup> -20<sup>th</sup> August 2010 at Institute of Pharmacy, Nirma University. The workshop was inaugurated by Prof. (Dr.) Mukesh C. Gohel, Principal, L. M. College of Pharmacy, Ahmedabad



who also delivered the Key Note Address "Key Points in the Optimization of Fluid Bed Processing". The Chairperson, Chief Coordinator & Coordinator of the workshop were Prof. Manjunath Ghate, I/c Director & Principal; Prof. Tejal A. Mehta, Head, Dept. of Pharmaceutics and Mr. Dhaivat Parikh, Asst Prof, Dept. of Pharmaceutics. Nearly 60 participants from academia as well as Pharma industry attended the workshop from Gujarat state. Plenary lectures were delivered by eminent academicians and scientists from Pharma industries like Mr. Sushrut Kulkarni, Vice President, Pharmaceutical Technology Centre, Cadila Healthcare Ltd., Changodar, Prof. (Dr.) Rajesh H. Parikh, Principal, Ramanbhai Patel College of Pharmacy, CHARUSAT, Changa, Mr. Prakash J. Shah, Executive Director, Troikaa Pharmaceuticals Ltd, Ahmedabad. The application of various modern equipments for formulation development like Spray Drier, Freeze Drier, Fluidized Bed Processor, Texture Analyzer, Brookfield Viscometer, Automated Dissolution Apparatus, Tensiometer, Pelletizer, etc. were demonstrated by faculty members. The objective of the workshop was dissemination of the fundamental principles & technical aspects as well as hands on training of these equipments to the young budding scientists. Overall it was an innovative way to gain useful insight in applications of modern equipments for formulation development to get maximum research output.

### Seminar on "Bioequivalence and Pharmacovigilance" - 14<sup>th</sup> August 2010

Drug information Association (DIA) is an international association which has started Young Professional Chapter (YPC) in Gujarat from this year. The association held a seminar on "Bioequivalence and Pharmacovigilance" on 14<sup>th</sup> August 2010 at the IP-NU. The event was inaugurated by Prof. Manjunath Ghate, I/c Director and Principal, IP-NU, Dr. Nirav Choksi, Chair, DIA YPC, Gujarat and Dr. Shrenik Shah, Vice-Chair, DIA YPC Gujarat. The eminent speakers for the seminar were Dr. Shailendra Goswami, Vice-president, Clinical Research, Cadila Pharmaceuticals Ltd. and Dr. Vikas Vaishnavi, AGM, Clinical Research, Cadila Pharmaceuticals Ltd., Ahmedabad. The seminar was successful in providing an insight into the world of Bioequivalence and Pharmacovigilance.





Guest lectures were organised for over all growth of students and to make them aware about current scenario in the pharmaceutical field as well as for the development of their soft skills.

<b>Mr. Rohit Patel</b>	Director, Symcom, Ahmedabad, A talk was delivered on “Emotional intelligence” on 13 <sup>th</sup> March, 2010
<b>Dr. Eric K Kupferberg</b>	Senior assistant dean, academic and faculty affairs, college of professional studies, Northeastern University, Lecture was delivered on “over view of regulatory affairs and its future prospects” on 22 <sup>nd</sup> March, 2010.
<b>Dr. Sainath Iyer</b>	Principal, ICRI, delivered a talk on “Career opportunities in clinical research and hospital management” on 21 <sup>st</sup> April, 2010.
<b>Mr. Karen Stanley</b>	Lecturer in Microbiology, Biomedical Research Centre, Sheffield Hallam University, Sheffield, UK, interacted with the faculty in 19 <sup>th</sup> May, 2010.
<b>Mr. Rishikesh Raval</b>	Head, Human Resource Management, Zydus Cadila Healthcare Ltd., Ahmedabad delivered a lecture entitled “Current Pharmaceutical Scenario and Challenges ahead” on 24 <sup>th</sup> July, 2010
<b>Mr. Ashwin V. Parikh</b>	Managing Director, International Business Development delivered a speech on “From Nowhere to Now-Here” on 12 <sup>th</sup> August, 2010.
<b>Prof. Nina Muncherjee</b>	Faculty, Institute of Management, delivered a talk on “team Building” on 12 <sup>th</sup> August, 2010.
<b>Dr. Bhaswat S. Chakraborty</b>	Senior Vice President, Cadila Pharmaceuticals Ltd., Dholka delivered an inaugural speech in Orientation program, on 12 <sup>th</sup> August, 2010.
<b>Prof. V. R. Iyer</b>	HOD, Mechanical Engineering, Institute of Technology delivered a talk on “SWOT Analysis” on 13 <sup>th</sup> August, 2010.
<b>Shri S. G. Das</b>	Akshaypatra Foundation, Gandhinagar delivered a speech entitled “Focus” on 13 <sup>th</sup> August, 2010
<b>Dr. H. V. Trivedi</b>	Director, Academic Development & Research Cell, delivered a talk on “Learning Effectively” on 13 <sup>th</sup> August, 2010.
<b>Dr. Sunita Goswami</b>	Senior Faculty, Pharmacology Department, L. M. College of Pharmacy delivered a talk entitled “Scope of Pharmacy - Future, Prospects” on 13 <sup>th</sup> August, 2010
<b>Mr. Sachin Sehgal</b>	III Cell, Placement Officer, delivered a talk on “Expectations of Industries From Fresher” on 13 <sup>th</sup> August, 2010.
<b>Prof. A. S. Ranade</b>	Head, Electrical Department, Institute of Technology, delivered a talk on “All-round Development” on 14 <sup>th</sup> August, 2010.
<b>Dr. Vikas Shirsath</b>	Chief Scientific Officer, Oxygen Healthcare Research Pvt. Ltd., Ahmedabad delivered a talk on “Pharma Industry: Expectations & The Road Ahead” on 14 <sup>th</sup> August, 2010.
<b>Mr. Vincent Vaz</b>	Counsellor, NU, delivered a talk on “Confidence Building” on 14 <sup>th</sup> August, 2010.
<b>Dr. Appaji Mandhare</b>	AGM, Department of Medicinal Chemistry, Torrent Research Centre, Ahmedabad, delivered a talk on Molecular modelling techniques in drug discovery on 21 <sup>st</sup> August, 2010.



Ashwin Parikh



Rishikesh Raval



Bhaswat S. Chakraborty



Sunita Goswami



S. G. Das

## SYNTHETIC CULTURE FOR hES AND IPS CELLS

Embryonic stem cells can be converted into any other type of cells in the body and thus have potential use in treatments where cells need to be replaced. But there is a big problem, it is difficult to culture & develop human embryonic stem cells (hES) without simultaneously contaminating them. Currently these cells are being cultured by using animal proteins and thus the fear of human rejection prevails. Alternatively, the stem cells can be cultured on other human cells known as “feeder cells” but these release thousands of uncontrollable proteins & thus lead to unreliable results.

A research team at Karolinska Institute cultured human embryonic stem cells (hES) & induced pluripotent stem cells (iPS) on a matrix of single human proteins “LAMININ - 511”, A component of natural hES cell niche. Laminin is a part of our connective tissue & acts in a body as a matrix to which cells can attach. Also this protein maintains stem cells as stem cells i.e. differentiation of ES to different types of tissues/cells requires other type on laminins.

In association with Harvard Stem Cell Institute they have paved a way to culture reprogrammed stem cells (which have been converted back from tissue cells to stem cells). This technique will produce large quantities of hES cells in a completely defined environment. This xeno-free and feeder-free system may be useful for development of cell lineages for therapeutic purposes.

Reference: Nature Biotechnology, www.sciencedaily.com  
Authors: Nishadh Patel, Harsh Shah, M. Pharm, Sem. – III.

## BLOOD PHARMING

Genetically engineered blood is created by taking cells from umbilical cords and using a machine to mimic the way the bone marrow works to produce huge quantities of usable blood units of red blood cells. “Darpa” program launched in 2008, by Pentagon’s research arm promises to provide endless stream of universally accepted O –ve blood, especially for soldiers, emergencies and accidents. The biotech company “Arteriochyte” hired by them, can turn an umbilical cord into 20units of blood in about three days. The blood is made using haematopoietic cells taken from umbilical cords. The blood calls produced are functionally indistinguishable from RBCs in healthy human condition.

Giving a tough competition to these U.S. researchers is a team led by Marc Turner, Edinburgh University, U.K. They are using stem cells to produce unlimited amount of synthetic human blood, paving the way for “infection-free emergency transfusions.” The British researchers are testing human embryos left over from IVF treatment (spare IVF embryos), to find those that are genetically programmed to develop into O –ve universal donor blood that can be transfused into anyone without fear of rejection. The ES are being stimulated to develop into mature, oxygen carrying RBCs for emergency transfusions. These developments would revolutionize the vital blood transfusion services and chuck out the need of fresh blood donors.

Reference: www.sciencedaily.com  
Author: Pankti Desai & Gargi Lakhwani, M.Pharm Semester -III

## New drug approvals

(Brand Name – Generic Name – Company Name – Country – Month and Year of approval - indication)

- Tekamlo Tablets -aliskiren and amlodipine - Novartis Pharmaceuticals Corporation, Switzerland-August 26, 2010-Hypertension.
- Ella -ulipristal acetate- HRA Pharma, France-August 13, 2010- Postcoital Contraception.
- Xeomin -incobotulinumtoxinA- Merz Pharmaceuticals, LLC, North Carolina, USA- July 30, 2010- Cervical Dystonia, Blepharospasm.
- Cuvposa Oral Solution –glycopyrrolate- Shionogi Pharma Inc., New Jersey - July 28, 2010- Chronic Drooling in Children.
- Lastacaft Ophthalmic Solution –alcaftadine- Vistakon Pharmaceuticals LLC, USA-July 28, 2010- Allergic Conjunctivitis.
- Tribenzor Tablets -amlodipine, hydrochlorothiazide and olmesartan- Daiichi Sankyo, Inc., Japan- July 23, 2010- Hypertension.
- Veltin Gel -clindamycin and tretinoin- Stiefel Laboratories, Inc., USA- July 16, 2010-Acne.
- Glassia -alpha1-proteinase inhibitor (human-Kamada Ltd., USA- July 1, 2010- Alpha-1 Proteinase Inhibitor Deficiency.
- Staxyn Orally Disintegrating Tablets – vardenafil- GlaxoSmithKline, UK and Merck & Co., Inc. USA- June 17, 2010- Erectile Dysfunction.
- Jevtana Injection –cabazitaxel- Sanofi-aventis, France- June 17, 2010- Prostate Cancer.
- Prolia Injection –denosumab- Amgen Inc., USA- June 1, 2010- Osteoporosis.
- Zymaxid Ophthalmic Solution –gatifloxacin- Allergan, Inc., USA- May 18, 2010- Bacterial Conjunctivitis.
- Sprix Nasal -ketorolac tromethamine- Roxro Pharma, Inc., California- May 14, 2010-Pain.
- Provenge Suspension for Intravenous Infusion - sipuleucel-T- Dendreon Corporation, USA- April 29, 2010- Prostate Cancer.
- Zortress Tablets (formerly Certican) - everolimus- Novartis Pharma AG, Switzerland- April 22, 2010- Organ Transplant - Rejection Prophylaxis.

## SMART CELLS: THE ANGEL FOR DIABETIC PATIENTS...

Normally, in our human body, beta cells of the pancreas release the hormone INSULIN into the bloodstream in response to high glucose levels. But in diseased condition like DIABETES, insulin production is impaired which leads to abnormal high level of body glucose. That results in blurred vision, changes in metabolism, and sudden weight loss. Now days, Diabetes patients have to take insulin by pen or traditional syringes, which deliver a single dose of the drug, or via insulin pumps, which provide continuous low doses throughout the day and may deliver insulin during periods "when it's not needed".

Smart Cells: They are the chemically modified insulin modules which release the active hormone only in the presence of a certain concentration of glucose. Below that level, insulin remains bound and insoluble until the next blood-sugar spike. A new drug that senses glucose levels and delivers insulin on demand via smart cells and it may reduce the number of daily injections for patients with diabetes.

Smart Insulin is modified insulin module which contains sticky sugary molecules that are bio-degradable polymers. That is the inactive form of insulin and specially designed in such a way that at high concentration of body sugar, sticky sugary molecules detaches itself from insulin module and gives out a free and active insulin molecule and another side at a low concentration it remains in bound form only. This way it works via competitive binding, as in displacing of insulin and releasing it into the bloodstream as needed.

The preclinical trials are done of the drug on hundreds of rodents and recently moved to studies in pigs. In that, the researchers injected the drug into diabetic animals and then inserted sugar for stimulation. In the evaluation parameter, they have tracked blood-sugar concentrations and also noted the amount of insulin released in response to increased glucose. At the end of the experiment it was observed that the drug is able to sense and adapt to fluctuating glucose levels and deliver insulin as needed. They have also noted that released insulin concentration is stable, and there is no overdose of the drug.

But as these experiments are done on animals only, the researchers will have to make sure that the drug is foolproof, that there aren't any molecular signals other than glucose that could unnecessarily release insulin into the bloodstream, before starting clinical trials.

Though the concept is exciting and well to be pursued, lots of challenges are awaiting for the answers along the way.

### Reference :

1. Technology Review, Smart Insulin: "An experimental drug for diabetes dispenses insulin in response to glucose levels." By Jennifer Chu, pg. 1-4.
2. SmartCells, Inc. and Juvenile Diabetes Research Foundation Announce Partnership and \$1 Million Funding to Advance Smart Insulin(TM) for Type 1 Diabetes (Novel Insulin Formulation Provides for Glucose-regulated Insulin Delivery), pg. 1-4.

Authors: Asif Huda, Snehal Kothari, B. Pharm. Sem.: V.

## REPORT ON AVANDIA – A BLOCK BUSTER FOR DIABETES

Avandia (Rosiglitazone maleate tablets-8mg), a GlaxoSmithKline's blockbuster diabetic drug is the steaming topic of discussion. A panel of 33 experts has been designated with the task of scrutinizing the drug safety profile. Avandia has been in controversy since its approval due to its cardiac side effects.

The drug has earned revenue of \$1.1 billion dollar last year. According to FDA, it's more difficult to yank an approved drug than to reject a drug for approval. Thus it is pressurizing the companies to work more on post market surveillance. The discussions are still going on. If Avandia stays in market then FDA will have to outline a protocol for keeping the controversial diabetes drug on the shelves. Also, GSK would have to make supplementary labels or organize programs to monitor the health of patients taking the medicine. According to the International Diabetes Federation, Diabetes' global health-care costs for 2010 are \$376 billion. If the drug is called off then GSK would not incur that much of loss because the patent expires next year and the drug contributes only 2% to its revenue; this could be a major blow to the pharmaceutical industry.

Reference: [http://money.cnn.com/2010/07/13/news/companies/avandia\\_fda\\_panel.fortune](http://money.cnn.com/2010/07/13/news/companies/avandia_fda_panel.fortune)  
 Author: Binal Patel, B. Pharm, Sem. – V



## Poem

I asked for trust, But God led to joust  
 So that I learn to overcome it!!

I asked for faith, But saw only wraith  
 So that I learn to look at it!!

I asked of understanding, But God gave me  
 misunderstanding  
 So that I learn to clear it!!

I asked for kindness, But God gave me bitterness  
 So that I learn to digest it!!

I asked of friendship, But God gave me hardship  
 So that I learn to get along with it!!

I asked for strength, But God gave me detriment  
 So that I learn to fight with it!!

Lastly, I asked for detachment, But God gave me  
 attachment  
 Since I had already learnt  
 The virtues of life!!!

**Dr. Bhoomika Patel**

Department of Pharmacology, Institute of Pharmacy

## Story

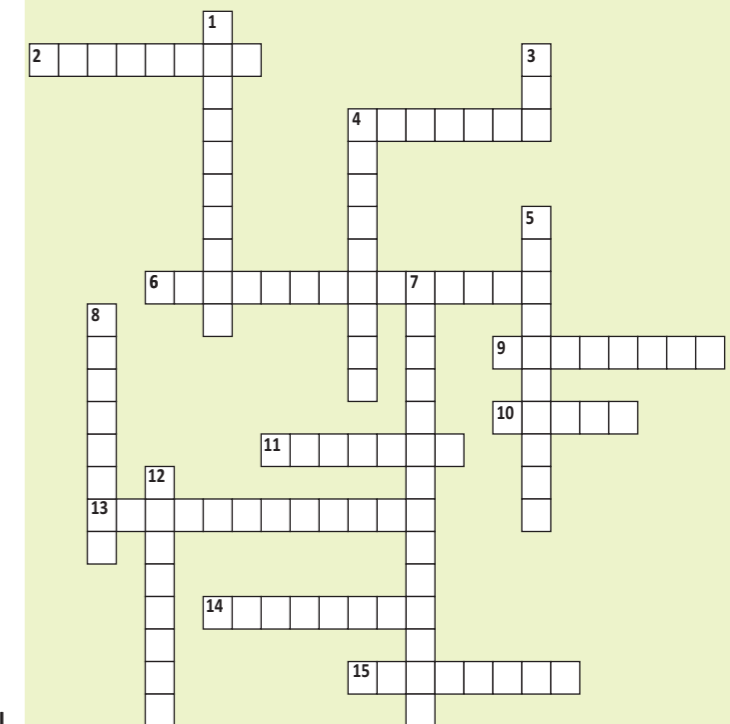
A woman came out of her house and saw three old men with long white beards sitting in her front yard. She did not recognize them and said I don't think I know you, but you must be hungry. Please come in and have something to eat. Is the man of the house home? They asked. No, he is out, she replied. Then we can't come in, they replied.

In the evening when her husband came home, she told him what had happened. Go tell them, I am home and invite them in. The woman went out and invited the men in. We do not go into a house together they replied.

Why is that? She asked. One of the old men explained his name is wealth and other two are success and love. Then he added, now go in and discuss with your family which one of us you want in your home.

She discuss with her family that we should invite success and her husband said we should invite wealth while her daughter suggested to invite love. Then they together agreed to invite love. She went out and invited love and she surprised to see that other two were following them. She asked I only invited love, why are you coming in? The old man replied if you had invited wealth or success, the only one would come but as you had invited love, wherever he goes we go with him. Wherever there is love, wealth and success will always come!!!!!!

## Pharma Cross Word



### Across Clues

2. Examples include pneumonia, influenza, and H1N1
4. Monitored with a PTTs
6. Comparing meds from home to inpatient to discharge
9. Monitored with PT/INR
10. Automated dispensing cabinet
11. May be mild (rash) or severe (anaphylaxis)
13. Given to treat various types of cancer
14. Draw these from blood, sputum, wound, urine, etc.
15. Restocked by pharmacy after a Code Blue

### Down Clues

1. Often results from inappropriate antibiotic usage
3. Nutrition given through an IV
4. Many of these medications require a double check
5. Monitored with trough levels
7. Examples include Gentamicin and Tobramycin
8. Two or more medications may do this
12. The fluoroquinolone on formulary



## Hard work in right direction makes success to follow you

**Parth More, Alumni –IP, 2010**

Department of Pharmaceutics, National institute of pharmaceutical education and research (NIPER), Mohali.  
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“In order to succeed, your desire for success should be greater than fear for the same” - by Bill Cosby.

I, Parth More, alumni of Institute of Pharmacy, Nirma University, would like to share some of my feelings with you. I got all India first rank in GPAT-2010 examination. Actually, it was a dream comes true. It was not my sole effort but it was the effort of group of people. First of all, I would like to thank GOD for choosing me to give such a respectable reward. I would like to thank my parents for continuously loving me and giving me support. Talking about my college, Institute of Pharmacy, Nirma University, has played a wonderful role in my success story. The curriculum, examination pattern, continuous efforts of the faculty, the pre-GPAT examination series, library resources, great involvement of our director as well as HODs are some of the factors that made me and my colleagues to score good in the GPAT and other competitive examinations. IP-NU not only encouraged me in scoring well in GPAT but also supported my all round development. I had done my schooling from Gujarati medium and when I came to the college, it was looking tough to survive in such culture. But now, I feel proud to say that I have done total 10 presentations (paper+ posters) out of which 2 were International levels, 5 national levels and 3 state levels. On this occasion, how can I forget the contribution of my dear seniors! It is my fortune that I got such helpful seniors. I would also like to thank my classmates for the wonderful span of 4 years together that we would be unable to forget for our lifetime. Now I am pursuing MS (Pharm.) in Department of Pharmaceutics in NIPER, Mohali (my Dream branch in my Dream College!) because of the efforts of above mentioned people. Finally I would like to give my best wishes to all my juniors and suggest them to do something extraordinary so that everyone will remember your name for lifetime. Work hard and success will be surely yours.

“Three sentences for getting success- Know more than others, work more than others and expect less than others” - by William Shakespeare

## Those who would like to pursue a career in Research

**Anant Shah, Alumni – IP, 2008**

Research Scholar, Institute of Cancer Research, University of London, UK

Hi Friends, I would like to throw some light on the current situation of a career in pharmaceutical research in the nation as well as abroad. One thing which I have seen from my own experience is that, these days it has become a necessity to do post graduation from a university that has got a national status, lest which country it is from. For the students who really want to do masters abroad, it is undubiously better to invest your parents money into quality education rather than just following the crowd and going to US enrolling up in a below average University where there is a very high probability that you may end up with no job at the completion of the post graduation. One should give priority to US only, if you get admission into good Universities.

Students can target good universities in U.K and Europe for further studies. Students of the Nirma Alumni would be completing their post graduation from Universities like the London School of Pharmacy, The Nottingham University from UK which has got tremendous status in UK itself and thus they would be undoubtedly having a high probability to do a Ph.D. from a world class University or getting a good job on the basis of their performance. I, myself have done a year research at the RWTH Aachen University in Germany and the quality of research done there is simply inexplicable. For India - The best and the worthiest option is going for IITs and NIPER in India. Use these world class Universities as a platform and try to gain maximum benefit, using their tags in your resume. You will definitely get admission in globally renowned university for pursuing Ph. D. abroad with good money as stipend.

Friends, just one simple advice for all of you- just follow your instinct and not the crowd. Aim for top class Universities for your post graduation having a national status or else in this tough competition, you will be lost in this huge pharma crowd. Try to keep as many options open for you and then take the best decision.



## Shining Stars at the Institute

GPAT Examination – A national level entrance test for admissions in M.Pharm programme Total 56 Students of IP-NU qualified in GPAT 2010. Mr. Parth More secured first rank at all India level.



NO.	NAME	GPAT ranking
1	More Parth Kishanlal	1
2	Bendale Dhaval Sharad	38
3	Patel Devang Vinodbhai	90
4	Gohil Brijrajsinh Balvirsinh	126
5	Patel Binitaben Vinubhai	148
6	Parikh Ankitkumar Yogeshbhai	262
7	Bahety Priti Baldeodas	290



સુઓપીટીમાં સમઘાવાનો પાર્થ બન્થો સોલ ઇન્ડિયા ટોપર, છવાયા નિરમાના સ્ટુડન્ટ ફાર્મસી ટેસ્ટમાં પણ અમે બેસ્ટ



## Poster Presentations

Dharika Patel and Moorti Khodakiya received first prize and Himani Khambhate received second prize for presenting posters in National conference on Potential of Nanotechnology in drug delivery at A.R College of Pharmacy, Vallabh Vidyanagar, 13<sup>th</sup> – 14<sup>th</sup> March, 2010.

## PhD. Awardees

Mr. Yogesh Biradar has been awarded degree of doctor of philosophy in Pharmacy for his thesis entitled “Evaluation of anti-malarial activity of selected plants of Indian system of medicine and study of the synergistic activity of the compounds present therein” from Nirma University under the guidance of Dr. M Ramani.

Ms. Kashmiri Gohil has been awarded degree of doctor of philosophy in Pharmacy for his thesis entitled “Pharmacological Investigation of Clinically Important and Potential Herbal Drug Interactions” from Nirma University under the guidance of Dr. Jagruti Patel (Guide) and Prof. Anuradha Gajjar (Co-Guide).

## Fellowships

Mr. Somsuvra B Ghatak, IP-NU received Rs. 6,64,800/- INSPIRE Fellowship (JRF-Professional) for 3 years from Department of Science and Technology, Govt. of India.



Mr. Prerak Patel, IP-NU received Rs. 6,64,800/- INSPIRE Fellowship (JRF-Professional) for 3 years from Department of Science and Technology, Govt. of India.



