

## Biotechnology and Pharmaceuticals mission: 07 to 11 September 2015

### About the mission

The mission was designed to develop a platform for partnerships and collaborative research in the field of Biotechnology and Pharmaceuticals with local Indian Higher Educational Institutions (HEIs) in Bangalore and Ahmedabad. Another key objective of the mission was to facilitate interaction between the academics and potential students interested in studying Biotechnology and Pharmaceutical related courses in the UK. This is the second time we have held a subject mission in Ahmedabad.

The five-day programme included visits to three local HEI's and corporates in Chennai and five local HEI's and Pharmaceutical companies in Ahmedabad.

### The Programme at each institution/corporate

The programme was structured to facilitate faculty discussions to identify areas of mutual interest within the scope of Biotechnology and Pharmaceuticals which could contribute towards developing a partnership or collaborative arrangement between the local and UK institution. Each of the delegates were given 10 minutes to present to the Indian institutions/companies.

Post the faculty discussions, guest lectures in the form of master classes were organised at each of these institutions and were delivered to the pre-final and final year Biotechnology and Pharmaceutical students. These lectures created awareness amongst students of post-graduate courses available in the UK .

### Below is the list of participating UK institutions:

1. Bradford University
2. Leeds Beckett University
3. The University of Nottingham
4. University of East London

Following the faculty discussion at each institution, there were student interactions; the delegation was split into three classrooms. Topics of student seminars were:

1. Antibiotics resistance
2. Wounds: Key complications and recent advancements in diagnostics and Pharmaceutical processes: Hot Melt extrusion and Injection Moulding
3. Functional genomics

### Synopsis of the institutional visits and faculty discussions:

The mission started with a pre-event briefing session at British Council Chennai on day one to provide market information and discuss travel and delivery logistics of the mission.

Day One: 07 September 2015 at **B S Abdur Rahman University, Chennai**

About the institution: BS Abdur Rahman University is a private university in the state of Tamil Nadu. The faculty discussion was attended by the Vice-Chancellor (VC), Registrar and heads of department from Biotechnology.

Some highlights from the faculty discussion are given below:

- BS Abdur Rahman University has 12 existing MoU's with various companies and universities within and outside India.
- Students from a Malaysian university visited BS Abdur Rahman University on an exchange programme.
- BS Abdur Rahman University offered the visiting delegation to teach the students for a month or more and the university is willing to bear the expenses of visiting delegate's accommodation, air-tickets and salary equivalent to Indian standards for the period of their stay. They suggested the best months for the UK delegates to visit for teaching purposes will be June-Nov or Feb to April. A reciprocal visit to the UK University for couple of weeks was suggested during the months of May-June.
- Discussion on joint-publication and joint-research was held.
- The VC suggested options for student mobility programmes and there were discussions on scholarships and funding for Indian students that can be worked out on mutual benefit.
- There was discussion regarding BBRC (Bioscience Biotechnology Research Communication) for funding in India and the UK, UKIERI funding between India and the UK and Newton Bhabha funding scheme for PhD students and faculties.

At the end of the discussion both parties mutually agreed to some common areas of interest for research areas in the field of Biotechnology. ~~was extremely encouraging~~ and keen to take positive steps to work out student and faculty mobility. ~~an Unive~~

A total of 150 students and 12 faculties met the delegation at B S Abdur Rahman University

Day One: 07 September 2015 at **Life Cell International Pvt. Ltd, Chennai**

The delegation met the Chief Scientific Officer(CSO) at Life Cell, Mr Kumar, who had over two decades of experience with stem cells, heads the R&D unit and is primarily responsible for driving the stem cell projects at LifeCell. He has also been instrumental in the establishment of the LifeCell Academy that is involved in imparting hands-on training in stem cells.

The Life Cell International Pvt Ltd was established in the year 2004 and has since increased their customer base from 50,000 to 150, 000. They offer training to students and professionals from the life science stream. The training is mostly practical based, hands on training where the students receive an experience of the latest stem cell technology.

The discussion at Life Cell focused on training students and the key highlights of the meeting included the following:

- A three week visit induction for UK students was proposed during the discussion
- Questions regarding funding to collaborate with the UK universities were raised by Life Cell. Delegates proposed that they will make a document with all financial requirements and share it with Life Cell to understand a mutual solution.
- Life Cell is open to taking students from the UK for an internship. Suitable months for the internship could be November, December, June, and July.

Post the discussion the delegates were taken around to see the facility where they were informed of the process of storing the stem cell. The delegates appreciated the facility.

2 key contacts were met at Life Cell.

Day Two: 08 September 2015 at **SRM University, Chennai**

Director Faculty of Engineering and Technology along with the heads of the department were available for faculty discussion.

Some highlights from the discussion are given below:

- Recognition of one year master's programme was discussed.

- The director spoke about their existing collaboration with the University of Warwick and the model of 3+1 study abroad model was discussed.
- SRM is interested in developing project research for 6 months to 1 year for their faculty members and is also interested in the staff exchange programmes. SRM University has an existing programme called faculty abroad programme which is funded by the SRM University.
- They suggested that it would be useful if UK Institutions can organise workshops for 2-3 days for students as an introductory lecture on studying Biotechnology and Pharmaceutical courses in the UK and suggested organising a workshop on teaching strategies for faculty members.
- SRM University is also interested in a joint-PhD supervision where one faculty from India and one faculty from the UK will supervise a piece of work and submit their papers jointly.

A total of 200 students and 10 faculties met the delegation at SRM University

After SRM University's visit the group travelled to Ahmedabad

#### Day three: 09 September 2015 at **Torrent Pharma, Ahmedabad**

Torrent was established in the 90's and their core strengths was in power, transfusion and pharmacy. They have a presence in 70 countries. They have a manufacturing unit in Germany and 4 units in India which are solely manufacturing units. They have 150 discovery researches and are 18 years old.

Some highlights from the discussion are given below:

Torrent has partnership with 3 companies for research and development activities and market oncology products. Their core research focusses on cardio vascular/ metabolic. Lipids are one of the areas of interest to them. They are interested in drug discovery.

Torrent is open for giving job placements to prospective students from the UK; however they mentioned that it may be difficult for them to offer any internship or a project to students from the UK.

There were several areas of mutual interest with the UK universities and there was keen interest in research exchange programmes.

One key contact was met at Torrent

#### Day three: 09 September 2015 at **St Xavier's College**

St Xavier's is an autonomous college affiliated to Gujarat University. They have an active MoU with a USA University for a research activity. The college runs a programme which is operated by students enabling them to become future entrepreneurs.

At St Xavier's college, the visit started with delivery of master classes to the students. The students found the lectures interesting and there were numerous questions on the subject as well as on applications, scholarships.

This was followed by the faculty discussion with the heads of department. The college gave an overview including the research that they carry out .

Some highlights from the discussion are given below:

- The college is very interested in developing joint publications. Discussion on joint PhD was discussed.
- Fellowship and scholarships for students were discussed if the students visited the UK for a semester or a project. The delegates informed them about UKIERI, Newton Bhabha funds. Erasmus funding was discussed. They also discussed different scholarships available for deserving candidates by the universities.
- St Xavier's suggested that they would like to organise a workshop inviting the visiting delegates to participate.
- Discussion around curriculum development and mapping for various courses was discussed.
- Foundation course in the UK was discussed at length; questions regarding why it is necessary for a student to take the course and their benefits were discussed.

- There was an elaborate discussion on teaching methodology in the UK during which the mentoring programme for students and its process were discussed. The student's motivation level and how to involve them in discussion for participation were some of the points which were discussed in detail.
- The group spoke about their experiences with students in the UK and how they deal with varying issues and tackle problems using different techniques which enable students participate actively in the class. This was much appreciated by the college.

A total of 100 students and 7 faculties were met at St Xavier's College

Day four: 10 September 2015 at **Zydus A division of Cadila Healthcare Pvt. Ltd**

Zydus is a 1.7 billion revenue generating company. It is the first company to launch bio similar products. It is the 8th largest in the USA with 5.5 billion revenue. Their compound rate is 18%.

Zydus has presence in France, Spain and Italy in the European Union. They have 400 scientists working in the research centre in Ahmedabad on small and large molecules.

During the discussion the key members from the company were available. Post the presentation by the delegates the discussions were on the following:

- Plants research is their core area and hence there were discussions related to this
- Zydus enquired the group on patents, regulations and on potency of compounds.
- Discussions on collaborations took place.
- The delegates enquired if Zydus was happy to take the students from the UK for project work to which Zydus reacted positively and informed that they are open to taking students from the UK for a project as well as for jobs.
- They are interested in E-coli for research purpose with the UK universities.
- Discussion regarding regulatory bodies in India was spoken. Zydus has a partnership with a Canadian institution for research purposes.
- Zydus spoke about their international annual conference and that they will be happy to invite the visiting delegates in their future conference. This conference is attended by scientists and academics from around the world.

Seven key contacts were met at Zydus

In the afternoon lunch was organised by the British Deputy High Commissioner Ahmedabad.

Geoff Wain, British Deputy High Commissioner, Ahmedabad and Ms Sharon Memis, Director West India, British Council hosted the lunch for the delegates.

At the lunch the group met key contacts from Cadila Pharmaceutical Company and some of the members from higher education institutions.

Day five: 11 September 2015 at **Nirma University**

Nirma University received its university status in year 2003. It has 6 schools including architecture. They have 400 staff currently working at Nirma University.

At Nirma University the group briefly met the key faculty members initially. This was followed by master classes. Students found the lectures very interesting and there were lots of questions for the delegates. The lectures were so popular that there was a request for Dr. Bora to re-do the session for another batch of students.

Focus of faculty discussion was on following:

- Nirma University informed that they have funding available from the state government and also from the biotech research group in Gujrat and hence they are keen on carrying out research.
- Nirma University offers BPharm, MPharm courses and MSc Cosmetics is a newly added course.
- Nirma University holds 11 patents and 6 collaborations with industry and institutions however these collaborations are within India. They have an MoU with German institutions for a student exchange programme.
- Discussion on summer school for students for a month was discussed and they expressed interest for the same.

- Discussion on curriculum exchange was held. University of East London informed that they will be happy to sponsor 2-3 students under the Going Global programme.
- The university informed that they hold a conference annually and are interested in joint-conference if that would be possible. Nirma University informed that they will be happy to invite the visiting delegates for the conference held in January every year.
- Bradford University offered a group of students and staff from India to visit their institution in the UK for 3 months.
- Nirma University is interested in Herbal extracts with University of East London apart from other areas with other visiting universities in research collaboration.
- Nirma University is keen on collaborating with UK universities as they expressed that they haven't been exposed to such discussions earlier and they were very happy that UK universities visited them. They are very hopeful that there will be some partnership that will emerge from this visit.

At Nirma University 250 students and 10 key contacts were met

#### Day five: 11 September 2015 at **INTAS Pharmaceuticals Ltd**

INTAS is a 35 years old international company. One of their core areas is manufacturing of formulation. They are ranked 10th in the domestic market. INTAS R&D had developed NDDS (New Drug Delivery System) products and have commercialised three formulations.

They are ranked 2nd for CNS (Central Nervous system). They are ranked 4th in Chronic therapies.

The discussions at INTAS covered the below points:

- They are in the process of opening a facility in the UK with effervescent as its specialty. They have an existing packaging facility in the UK. Hence INTAS proposed if the students could make an industrial visit to the INTAS facility in the UK to which they agreed.
- INTAS informed that they are open to recruiting Indian students who have studied in the UK.

2 personnels were met at INTAS

After completing the visits an informal de-briefing session took place at British Council Ahmedabad to understand the success factors of the mission from the participating delegation and to seek feedback as well.

#### **Feedback from the mission:**

Brief summary of feedback received by participating delegates:

- All 4 delegates mentioned that the mission met their objectives
- All delegates gave feedback that the quality of institutions was 'good' and the interaction at each institution was 'good' as well
- 3 out of 4 delegates commented that they have acquired more knowledge about the local institutions and the way they operate by attending this mission
- All institutions have follow up strategies like Skype calls to discuss collaborative opportunities, summer schools, and opportunities for research student exchange.
- Some feedback comments by delegates
  - The overall visit was good and we intend to keep in touch to extend collaborations.
  - The Biotechnology / Pharmacology mission was a very informative and useful coordinated tour of a number of institutions and industries. We found the mission to be well organised and allowed us to meet a range of senior colleagues from the individual institutions which would otherwise have been very difficult to solicit on an individual basis. In terms of what we gained from the mission, these are– a better understanding of the Indian HE context and student drivers, a number of research opportunities, but also a range of specific opportunities to work closely across staff and student exchanged collaborative travel or research grants. The industrial contacts made are also of value, in terms of being able to explore research and student placement opportunities.

<b>Total number of students and faculty met during the mission</b>	
Students	550
Faculty	51

## Photographs taken at mission



Dr Rahman delivering master class to students



Faculty discussion at one of the visited University



Delegates addressing students before the master class