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Strategic research reigns India-Australia collaborations

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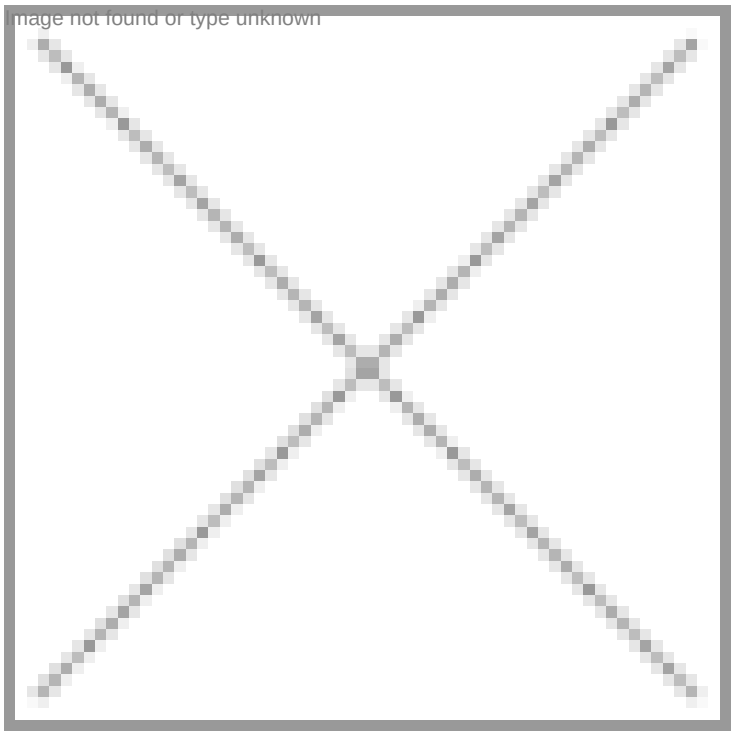
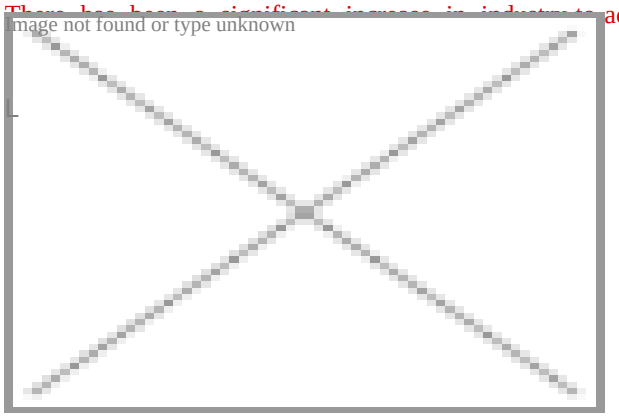


There has been a significant increase in industry to academia and industry-to-industry interactions between India and Australian



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ast five years have witnessed many steps taken by the respective industries and governments in India and Australia to strengthen mutually beneficial partnerships in the area of biotechnology.

In 2007, Australia's Deakin University in Victoria signed a memorandum of understanding (MoU) with India's Biocon for joint multidisciplinary research focused on biotechnology and bioscience. Another notable example of Indo-Australian collaborations is between Strides Arcolab and Melbourne-based Ascent Pharmahealth. Strides first invested in Ascent Pharma in 2008 and in January 2012 sold Ascent to Watson Pharma. Strides-Ascent deal could be a good case study for what Indian and Australian companies have gained from mutual collaborations.

Indian healthcare leader, Zydus Cadila and Australia-based Symbion have signed an MoU for construction and operation of manufacturing facilities in India. The Indian diversified major ITC acquired Australian agri-biotech company Technico as part of its strategy to strengthen its foods business. The Mumbai-based Ipca Laboratories acquired Australian formulation product dossier registration-cum-distribution company (now Ipca Pharma Australia) to enable it to register formulations in Australia.

The clinical trial companies based in Australia seem to be much interested in utilizing the offerings of the Indian market. Lisa Nelson, deputy CEO, Nucleus Network, says, â€œIndia offers very good opportunity for clinical trial companies. We have collaborated with many big pharma companies in India such as GlaxoSmithKline and Novartis. At present our India focus is more on the early phase clinical trials and healthy volunteers because of safety considerations. We are currently doing groundwork in India and are on the lookout for potential partners. Compared to China, where it takes almost 12 months, India is much better in terms of regulatory approvals. India is slowly reforming its existing structure whereas China is a closed market.â€?

The medical technology companies, such as Muranex, are in lookout for Indian investments. Dr Maurice Fabiani, CEO and MD, Muranex says, â€œIn India we are trying to tie up with the potential strategic partners to ally and raise investment capital. We are well aware that the Indian market is doing quite well and has registered a lot of growth and experience over the passage of time. However, a bit more seems to be required at the regulatory front.â€?

Australian companies are looking positively at the change in India's regulatory framework. Roger Kalla, founder and director, Korn Technologies, Victoria, says, â€œIndian market is huge and we can see clearly the increased role in agri-biotech sector. The seed companies have seen great growth in India and now there are various opportunities to share the knowledge in agricultural technology development. As far as regulatory issues are concerned, it may take some time. However, like in Australia where after some wait genetically modified (GM) Canola has been approved and now GM wheat will be tested, we are hopeful that India will catch up soon.â€?

Indoâ€“Australian Biotechnology Fund Project

Project	Research Partners	Funding
Development of selenazole drugs as a novel class of anti-cancer agents targeting the immune system	University of New South Wales and Indian Institute of Science, Bangalore	$300,000
Therapeutic approaches to augmentation of adult cardiac stem cells	Victor Chang Cardiac Research Institute and Institute for Stem Cell Biology and Regenerative Medicine, Bangalore	$400,000
Development of a novel bioreactor and cell sorter for more efficient production of stem cell culture	Monash University and Indian Institute of Technology, Mumbai	$299,539
Production of omega-3 concentrates for functional foods, pharmaceuticals and nutraceuticals	Deakin University and Centre for Cellular and Molecular Biology, Hyderabad	$298,755
Structure-based design of malaria vaccines to elicit stronger immune responses	Monash University and Indian Institute of Science, Bangalore	$299,340
Identifying and testing molecules used to manipulate multiple genes to improve temperature tolerance in plants	The University of Queensland and International Centre for Genetic Engineering and Biotechnology, New Delhi	$299,700
Collaborative laboratory and clinical research on the role of lactoferrin derived from cow's milk.	The University of Sydney and Postgraduate Institute of Medical Education and Research, Chandigarh	$11,200
Natural RNA interference to combat disease and make aquaculture more economically and environmentally sustainable	James Cook University and Karnataka Veterinary Animal and Fisheries Sciences University, Bangalore	$294,099

(Source: AusBiotech)

Research benefits

India and Australia share challenges in areas such as agriculture, water, energy, and healthcare and have complementary strengths in other fields as well, including nanotechnology and astrophysics. There are a significant number of research collaborations between Australian and Indian universities, including programs at the University of Melbourne, Monash University, Queensland University of Technology, and Queensland Institute of Medical Research.

A good example of successful research collaboration is Deakin India Research Initiative (DIRI), an expansion of Deakin University's ongoing development of research models to bridge the gap between academia and industry. This initiative plans to enable the rapid increase in manufacturing and knowledge industries which is needed for growing India's economy. Under the DIRI model, higher degree by research (HDR) candidates are based at an Indian research institution with day-to-day

supervision provided by a local researcher and a Deakin academic staff who serves as principal supervisor. The candidate visits Australia for a period of six months to conduct research. DIRI has been working with 13 Indian research partners, including companies such as Biocon, Indian Oil, Vimta Labs, and labs of Council of Scientific and Industrial Research.

Australia's strength

Australia has high quality science capacity to forge international partnerships and a transparent and efficient regulatory regime. The country has a strong culture of research and, thus, can train large numbers of Indian nationals in its biotech programs. On the regulatory front, Australia's fast tracked regulatory approval process could be a major plus for Indian companies. The Clinical Trial Notification (CTN) scheme enables streamlined ethics approval for initiation of clinical trials, with 99 percent of trials able to begin within a week of being registered. The close alignment of Australia's regulatory and legal frameworks (practice and standards) to the US and EU means that products successfully trialed in Australia will have immediate transferability to these markets

According to professor Peter Hodgson, director, Institute for Technology Research and Innovation (ITRI), Deakin University, Australia, â€œWith strong biotech and information technology skills, India has enormous potential. By shifting the focus on future technologies such as bionanotechnology, India can leapfrog China in development. Australia has developed one of the best healthcare systems in the world that spreads over a large area. Extensive work is happening at Deakin in lifestyle-related diseases such as diabetes and obesity. India has to face the lifestyle-related issues as the young population in the country is more prone to these diseases due to their

Deakin University has also entered into a research partnership with The Energy and Resources Institute (TERI) and has established TERI Deakin NanoBiotechnology Research Centre in New Delhi. Researchers at Deakin University's ITRI bring excellence and expertise in the design and characterization of novel nanomaterials to the center, while TERI researchers in the Biotechnology and Management of Bioresources Division (BMBD) bring extensive experience in biotech applications in the field of pharmacology, food, agriculture, and environment. Within five years, the center will have about 70 researchers, including 50 PhD students enrolled at Deakin and co-supervised by Deakin and TERI staff.

At the government level, Australia-India Strategic Research Fund (AISRF) is Australia's largest fund dedicated to bilateral research and one of India's largest sources of support for international science, providing $65 million over eight years from 2006â€“07. The Indo-Australian Biotechnology Fund (IABF) is a significant component of the AISRF and so far five rounds have gone through. The priority areas for the projects include neutraceuticals, vaccines and medical diagnostics, stem cells, transgenic crops and marker assisted breeding, and bioenergy. In May 2011, AISRF announced the sixth round with eight new projects within the IABF (see Indoâ€“Australian Biotechnology Fund Project). Under the program, the Department of Biotechnology (DBT) and Australia's Department of Innovation, Industry, Science and Research will soon start joint research in the defined priority areas mentioned above.

Industry associations

One of the most recent examples of industry playing a major part is the Victorian Government Super Trade Mission to Indiain February 2012. Hosted by Confederation of Indian Industry (CII), this mission represented over 24 companies from various life sciences and healthcare segments. Vibhav Garg, head, life sciences, CII, says, â€œCII facilitated business-to-business meetings for Australian companies with more than 24 Indian counterparts in New Delhi and Mumbai. Along with State Government of Victoria, CII is following up with Indian and Australian companies to help them get their dialogue matured.â€?

India advantage

India is a capable and increasingly dynamic player in international science, technology and research, both in publicly-funded research and in the private sector. The Indian biotechnology industry is one of the country's fastest-growing sectors. It has been growing at a rate of 20-25 percent per annum for the last three years. The easily available, cost effective and knowledgeable resources also make India an attractive destination for outsourcing research activities. The potential areas that are emerging as key strengths for the Indian biotechnology sector include research services and clinical trials, bio-IT data management, biogenerics and biomanufacturing, vaccines, diagnostics, biofuels, and agri-biotech.

Besides CII, the Association of Biotechnology Led Enterprises (ABLE) has also been doing its bit on the partnership with Australian industry. It has signed an MoU with AusBiotech, Australia's biotechnology industry organization that represents more than 3,000 members, to

AusBiotech has led business missions to India over the recent years with more than 30 companies and universities participating in a program of business seminars, site visits, and networking events in Hyderabad and Bangalore. Anna Lavelle, CEO, AusBiotech, believes that there is a need to leverage the complementary strengths in India and Australia. She says, â€œWe have been showcasing the opportunities of companies in both countries for several years and believe that the best is yet to come. The greatest increase in engagement occurs after meeting partner organizations at conferences, such as Bangalore India Bio or the AusBiotech conference, where business matching and personal relationships are central to partnering.â€? The active involvement and participation of industry organizations and government agencies from both India and Australia, will go a long way in

establishing and building a strong foundation to the growth of bioscience industry in each region.

Rahul Koul in New Delhi