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# Singapore: Rides the medtech wave

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With an aim to become the number 1 hotspot for global bioscience industry in Asia, Singapore has committed $13.05 billion (S$16.1 billion) in continued support of research, innovation and enterprise activities between 2011 and 2015. Out of this, $2.9 billion is dedicated to enhancing existing biomedical R&D infrastructure, integrating multi-disciplinary research and translating basic science into tangible outcomes.

To further facilitate the translation of science into viable healthcare solutions through public-private partnerships, Singapore has set up Biomedical Sciences Industry Partnership Office as a single point of contact for matching companies' R&D needs, with the expertise of Singapore's research hospitals, academic and public research institutions.

**Continues to strengthen R&D base**

Garnering confidence of the international pharmaceutical industry, Singapore has further attracted foreign companies to set up their base. Japan's Chugai Pharmabody Research setup Singapore's first corporate laboratory in antibody engineering, and committed $161 million in antibody research over the next five years. The initiative opened opportunities for 60 researchers. The facility, located at Biopolis, is Chugai's second satellite research institute, following PharmaLogicals Research, which was established in 2002 as a joint venture.

Similarly, other international giants like Merck, Sharp & Dohme (MSD) also announced the expansion of its presence in Singapore by investing $565 million on local research activities and training collaborations between Singapore and its global sites. Besides investing for its plug and play hub, foreign companies are also joining hands with Singapore hospitals and healthcare centres to extend their support. Bayer HealthCare has invested $11.7 million into cancer research in Singapore and has partnered with local hospitals, universities and research institutes to improve the early diagnosis of cancer, and treatment outcomes for cancer patients.

singapore-top-5-by-company-revenue

According to the Economic Development Board of Singapore, close to 7,000 researchers carry out biomedical sciences R&D in more than 50 companies, universities, and 30 public-sector institutes under the Agency for Science, Technology and Research (A*STAR) and the Ministry of Health (MOH). Collectively, the country is spending more than $1.20 billion on biomedical R&D annually.

Further strengthening its support for the country, Roche established a $105 million Translational Medicine Hub to partner with Singapore's scientific and medical institutions. The firm aims to develop new standards and strategies in drug development and personalized healthcare. Similarly, GSK has established its first Academic Center of Excellence in Singapore and its first four projects are focused on innovative medicine for ophthalmology, regenerative medicine and neuro-degeneration. It is not only the international companies that are showing interest in Singapore, due to its high standard of infrastructural facilities. Domestic companies are equally priming-up and setting standards to get international acclaim. Singapore-based Aslan Pharmaceuticals and Array BioPharma entered into an agreement to develop Array's HER2 / EGFR inhibitor. The agreement leverages Aslan's strengths in clinical development in Asia, and on the high prevalence of gastric cancer in this part of the world.

Besides R&D, Singapore continues to be the preferred zone for running business in Asia. Seven of the top 10 pharmaceutical and top 10 medical technology companies have their regional headquarters in Singapore.

According to EDB, leading pharmaceutical, biotechnology and medical technology companies presently operate more than 50 commercial-scale manufacturing facilities in Singapore. Besides producing for regional and global markets, companies are enhancing their manufacturing activities through process development, R&D in sustainable manufacturing, and partnering to upgrade their suppliers' capabilities.

**Focus on medtech sector**

Over the years, Singapore has strengthened its medtech sector and has been supporting domestic and international companies to bring medical technology innovation in Asia by harnessing the opportunities offered by the region. In Singapore, around 30 medtech companies carry out R&D in areas such as value engineering and product development for regional and global market that include companies like Becton Dickinson, Biosensors, Hill-Rom, Siemens Medical Instruments, Menicon, Thermo Fisher, Welch Allyn, AB Sciex, Vela Diagnostics, Qiagen, as well as local start-ups like HealthStats and Veredus Laboratories.

Japan's Menicon opened its first R&D and manufacturing facility outside Japan in Singapore, with total investments of $99 million and developed the world's thinnest one-day disposable contact lens utilizing flat pack technology. Recognizing the opportunities in Singapore, US-based Greatbatch established its R&D center for active implantable medical devices in Asia. Its QiG Singapore R&D Center focusses on the design and development of active implantable medical devices to serve the cardiovascular and neuromodulation markets. Becton Dickinson has expanded its corporate R&D center in Singapore to develop healthcare solutions in the area of medical surgical, immunization and diagnostics for Asian markets.

With its focus on quality and high standards, medical technologies developed at Singapore have managed to get green flag from US FDA as well. Quattro Vascular, a subsidiary of TriReme Medical, received FDA approval for their medical device, Chocolate percutaneous transluminal angioplasty (PTA) balloon catheter. This is the first implantable device developed in Singapore, to be approved by the FDA. The product was developed in Singapore by a 10-person R&D team.

In a bid to strengthen its medtech base, EDB has launched IDEAS (Innovate, Design, Engineer for Asia in Singapore) program for helping the medtech sector to train multidisciplinary teams of engineers, specialists and regulatory experts in companies' global and Singapore-based R&D facilities. The country has also created the Singapore-Stanford Biodesign Program, which is designed to meet the medtech industry's need for Asian medical device innovators, who are familiar with medtech innovation process as well as Asia's healthcare needs.