



The premier location for biotechnology and life sciences Melbourne, Victoria, Australia

Overview

Built on a strong foundation of talent, world-class infrastructure and a strong collaborative R&D culture, Melbourne, Victoria, is cementing its place as the premier location for biotechnology in the Asia-Pacific region.

With internationally-recognised strengths in clinical trials, diagnostics and drug discovery, Melbourne's biotechnology sector is embracing convergence, teaming up with the ICT and small technologies sectors to deliver innovative results, propelling Victoria to become one of the top biotechnology locations in the world.

Melbourne's expertise in stem cells, infectious diseases and cancer research, neuroscience, clinical trials and agricultural biotechnology is renowned globally. The sector is underpinned by a government commitment to supporting research and development and commercialisation infrastructure.

Research & Development Credentials

Australia has more graduates at PhD levels in biotechnology-related disciplines per head of population than the USA, Canada and Japan, and Melbourne is playing a vital role in ensuring that pipeline continues to deliver skilled professionals of the highest calibre. Melbourne boasts the highest number of natural and physical science graduates in the nation and as one of the few cities in the world with two universities in the top 25 global biomedical rankings, graduates are guaranteed to be of the highest quality.

Victoria's biomedical researchers consistently secure more than 40% of Australia's National Health and Medical Research (NHMRC) funding, and have done so for the past decade. Not surprisingly, this strength in biotechnology R&D means more eminent researchers from around the world are attracted to Melbourne, making the sector a truly world-class collaboration.

Outstanding Infrastructure

Victoria offers excellent infrastructure to support the biotechnology sector. Investors, researchers and firms have access to some of the most advanced facilities available in a number of critical areas, including:

- **Australian Synchrotron** – the largest stand-alone piece of scientific infrastructure in the Southern Hemisphere, a A\$220 million project which has attracted an additional A\$55 million of capital investment to build further world-class facilities, including an upgraded imaging and medical beamline and the National Centre for Synchrotron Science;
- **Victorian Life Sciences Computation Initiative** – the world's most powerful supercomputer dedicated to life science research;
- **Victorian Comprehensive Cancer Centre** – a major new A\$1 billion centre that, when complete, will bring together Australia's best cancer researchers, clinicians and educators and provide the highest standard of care for cancer sufferers;
- **Victorian AgriBiosciences Centre** – a comprehensive systems biology research facility of the Department of Primary Industries at La Trobe University that is keeping Victoria at the forefront of global agricultural biosciences research;
- **The University of Melbourne's Bio 21 Molecular Science and Biotechnology Institute (Bio21 Institute)** – a multidisciplinary centre specialising in medical, agricultural and environmental biotechnology;
- **Australian Regenerative Medicine Institute** – a state-of-the-art research facility focusing on research that aims to prevent, halt and reverse damage to vital organs due to disease, injury or genetic conditions; and



- **Melbourne Centre for Nanofabrication** – a facility providing expertise in advanced materials and nanotechnology and the largest purpose-built cleanroom complex in the southern hemisphere.

Details of the full range of biotechnology-related infrastructure available in Victoria can be found at the Victorian BioPortal at www.vicbiportal.org

Premier Location for Clinical Trials

Melbourne has an international reputation as a superior quality and cost competitive location for clinical trials. This reputation is founded on a strong base of highly-skilled professionals, world-class science and medical research institutes and well-established industry precincts with supporting infrastructure.

Victoria is known for its excellence in medical research and has a recognised collaborative model across basic and clinical research. The favourable and efficient regulatory environment in Victoria provides a faster and lower cost destination compared to most leading competitors.

Currently, more than 230 biotechnology-related products are in the developmental pipeline with 88 of these in clinical stages. A streamlined process for the ethical review of multi-site clinical trials has been introduced with over 130 ethics applications having been processed under the scheme since December 2009, reinforcing Victoria's position as the premier location for clinical trials in the Asia-Pacific region.

Australia's eastern seaboard states (Victoria, New South Wales and Queensland) have signed a Memorandum of Understanding that enables public hospitals and health services in each state to accept a single ethical review for multi-centre clinical trials from approved committees within the three states. This will substantially improve timelines for approvals, reduce duplication of ethical reviews and give patients earlier access to new treatments.

Recent Achievements of Victoria's Biotechnology Sector

Mesoblast, a pioneer in stem cell technology, entered into a strategic alliance with Cephalon to commercialise novel therapeutic products for regenerative medicine. Cephalon will make an upfront payment to Mesoblast totalling A\$330 million and regular milestone payments of up to A\$1.6 billion.

www.mesoblast.com

Chemgenex's Omapro™ targeting chronic myeloid leukaemia sufferers who are insensitive to tyrosine kinase inhibitors is in global phase II / III clinical trials and has been granted Orphan Drug designations by the US FDA and EMEA. Chemgenex intends to submit an NDA to US FDA in 2011. In March 2011 US-based biopharmaceutical company Cephalon launched a A\$225 million bid for Chemgenex which the Directors of Chemgenex have unanimously recommended.

www.chemgenex.com

Biota developed the first-in-class neuraminidase inhibitor, Zanamivir, subsequently marketed by GlaxoSmithKline as Relenza®. Biota receives 7% of royalties from the world-wide sale of Relenza® until 2015. Biota's second generation long acting neuraminidase inhibitor (LANI), Inavir®, was launched in Japan by Daiichi Sankyo. Further phase III trials for Europe and US are planned. In addition, Biota has been awarded A\$220 million by the US Department of Health for the advanced development of Laninamivir.

www.biota.com.au

Phosphagenics in 2010 with its TMP™ delivery technology has developed and launched a range of skin care products, Elixia®. Phosphagenics in collaboration with 3M have also developed a targeted pain management system using the same technology and are now in phase II / III trials.

www.phosphagenics.com.au



CSL continues to expand its R&D activity and manufacturing capacity in Victoria. The company has a number of commercialised products including Gardasil cervical cancer vaccine, Afluria® influenza vaccine, Q-vax vaccine, Hizentra®, RiaSTAP™, and Berinert®. In addition, their H1N1 swine flu vaccine has been registered in the US, Canada, Singapore, Germany and by the World Health Organisation.

www.csl.com.au

Acrux's Axiron® testosterone topical formulation product, which is licensed to Eli Lilly, has received US FDA approval. Axiron® is the first testosterone replacement product approved for administration via the armpit. The approval triggered a A\$82 million payment from Eli Lilly on top of the A\$47 million received in early 2010. Acrux anticipates that Eli Lilly will launch Axiron® into the US testosterone therapy market in 2011.

www.acrux.com.au

Universal Biosensors has partnered with Johnson & Johnson's Lifescan in the development and manufacture of glucose test strip technology for use in new blood glucose monitoring devices for the management of diabetes. The product has been launched in The Netherlands and Australia and US release is expected in 2011.

www.universalbiosensors.com

Cellestis has developed a tuberculosis patient management system that improves the early diagnosis of this highly infectious disease and optimises the way patients are treated. In April 2011, Dutch based holding company Qiagen N.V. proposed to acquire 100% of Cellestis Limited for A\$341 million.

www.cellestis.com

Hydrix is one of the largest software and electronics engineering design consultancies in Australia. They are currently working on a foetal ultrasound monitor that connects wirelessly to an Apple iPhone to display and record foetus' heartbeat. This will enable transmission of the recorded heart beat to the obstetrician.

www.hydrinx.com

Invetech in collaboration with San Diego-based Organovo Inc, has designed and manufactured advanced 3D bioprinter technology, enabling cell-by-cell production of human tissue structures.

www.invetech.com.au

Dow AgroSciences has established a global alliance with the Government of Victoria for crop innovation, driving a collaborative R&D effort with the Victorian Department of Primary Industries. This is the largest international agricultural biotechnology alliance undertaken by the Victorian Government to date.

www.dowagro.com/au

Starpharma's VivaGel® is the companies lead 'dendrimer' based candidate against HIV, HSV and other sexually transmitted diseases and have completed phase II trials which received Fast Track status from the US FDA. Starpharma has an exclusive licensing deal with SSL International to use VivaGel® to coat condoms in a deal worth over A\$100 million.

www.starpharma.com.au



Interested? Contact Invest Victoria

Invest Victoria, the Victorian Government's investment promotion agency, offers a wide range of services to assist companies planning to start or expand their operations in Victoria including:

- Identifying available sites and help with infrastructure and approvals;
- Arranging itineraries and programs for company representatives to gather market information and make contacts;
- Providing information on market potential, companies, research and development capabilities, available skills and costs;
- Connecting companies with suitable local suppliers, service providers and partners;
- Linking companies into networks, grants and support programs;
- Offering, in some cases, financial assistance to place company operations in Victoria; and
- Providing ongoing support in Australia and in home markets to help companies maximise their potential in the Australian market and beyond.

www.investvictoria.com

Want To Know More?

Head to www.invest.vic.gov.au/biotechnology-life-sciences to learn more about life sciences in Victoria.

Contact us

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Technology Industries Team**

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Australian Eastern Standard Time

Note: one to two hour adjustments are periodically required to allow for daylight savings.

• Invest Victoria office locations

Invest Victoria is the point of entry for all enquiries about establishing a new business or growing an existing business in Victoria. We'll work with you to develop business solutions that meet your company's needs and ensure your business future in Victoria is secure and profitable.

www.investvictoria.com

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