

Biotechnology in the Smart State

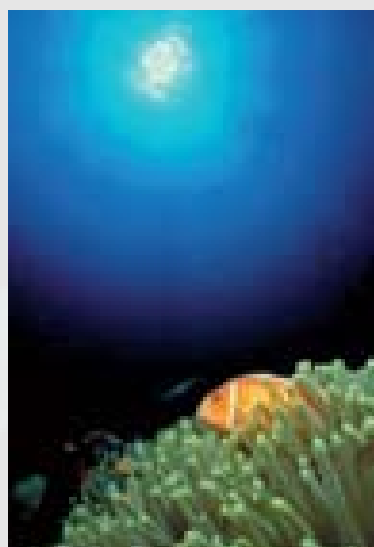
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Recognising the enormous potential biotechnology offers, this emerging industry is at the heart of the Queensland government's Smart State Strategy.

The Queensland government is committed to establishing the State as a leading biotechnology location through policies and strategies that facilitate R&D and commercialisation, coupled with clear and supportive regulatory frameworks. This integrated approach has helped to create a dynamic and growing industry.

Since the inception of the Smart State Strategy in 1998, the State's biotechnology industry has more than doubled in number. Today the industry comprises around 90 companies and there are outstanding opportunities for further growth. It is projected that by 2025, the industry will be employing over 16,000 people and generating A\$4 billion in revenues to an industry worth A\$20 billion.

Although small in comparison with major international players such as the United States, Queensland has some unique competitive advantages. The State's natural megabiodiversity, tropical location, strong science and research base, world-class infrastructure, and dynamic economy place Queensland well to become a global biotechnology hub. In 2005 the government released a 10-year biotechnology strategic plan that sets out the key drivers and actions required to achieve this.



Like the rest of the world, the largest sector of Queensland's existing biotechnology industry is in the health and medical area. This has grown out of a number of key areas of strength such as a long history in tropical medicine, vaccine development, and the development of drugs, including those from natural sources (Figure 1).

Queensland's megabiodiversity is one of its competitive advantages (image courtesy of Tourism Queensland).

Since 1998 the Queensland government has invested more than A\$600m in the industry in the form of business grants (\$20m), funding for cutting-edge research (\$150m), educational programmes (\$15m), and helping to build world-class R&D infrastructure (\$420m) (Figure 2). Queensland has 66 biotechnology related research organisations that provide an inter-disciplinary and comprehensive R&D environment (Figure 3). The State's leading institutes include:

- The Queensland Institute of Medical Research.
- The Institute for Molecular Biosciences.
- The Australian Institute for Bioengineering and Nanotechnology.
- The Australian Institute of Marine Science.
- The Queensland Brain Institute.
- The Mater Medical Research Institute.
- The Eskitis Institute for Cell and Molecular Therapies.
- The Institute of Health and Biomedical Innovation.
- The Institute for Glycomics.

The Queensland government is currently working in collaboration with its independent advisory council, the Queensland Biotechnology Advisory Council, to develop a second suite of initiatives under the 10-year biotechnology strategy.

For further information visit the Queensland government's biotechnology website www.biotech.qld.gov.au

Figure 1. Queensland's areas of strength.

Queensland's areas of strength

Health and medical

- Tropical disease treatment and prevention
- Vaccine development
- Genomics and bioinformatics
- Drug design and development
- Regenerative medicine (stem cells)

Agriculture

- High value tropical crop development
- Animal diagnostics
- Therapeutics and vaccines
- Molecular farming/plant biofactory

Environment and industrial

- Biofuels and bioproducts
- Molecular farming
- Bioremediation
- Waste and waste water management

Figure 2. Relevant Queensland government financial incentive schemes.

Queensland government financial incentive schemes	
Business and Industry Transformation Incentives	
A competitive, discretionary scheme available to assist businesses to pursue projects that will promote the transformation of priority industries, such as biotechnology	
BioStart Investment Fund	
Facilitates access to capital and progressing biotechnology related research to proof-of-concept stage	
Innovation Building Fund	
Loan funding to support the refurbishment or construction of R&D infrastructure and/or the acquisition and installation of R&D equipment	
Innovation Projects Fund	
Three separate grant sub-programmes to fund large partnership research projects on a local, national and international basis aligned with Queensland strategic priorities	
Innovation Skills Fund	
Three separate grant sub-programmes funding collaborative research skills development	
Innovation Start-Up Scheme	
Grant funding for early start-up companies innovating new technology solutions and commercialisation	
Smart State University Internships Programme	
Specific grant targeted at Queensland universities to encourage the development of industry based internship programmes across their curriculum	
Smart State Health and Medical Research Fund	
Two separate grant sub-programmes, one of which funds clinical fellowships whilst the other is specific to private medical research providers for top-up funding for operational expenditure	

Figure 3. Queensland's microbiology-related examples.

