



**BIOTECHCORP**  
MALAYSIAN BIOTECHNOLOGY  
CORPORATION



# Accelerating commercialisation in biotechnology

BiotechCorp Annual Report 2009

**we live** in an **environment**  
where **a single discovery**  
**can change** our  
**world.**

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**cili padi**  
(*capsicum frutescens*):  
**Potent**  
**sensations**



Like the Malaysian *cili padi*, known for the surprisingly fiery pungency it brings to spicy local cuisine, expect Malaysia to leave an explosive and lasting impact on the future of biotechnology.

# Facts & Figures

## Highlights of 2009

### Key Indicators for the Biotech Industry as at 31 December 2009

Indicators	TARGETS				Total (2005-2009)
	Phase I (2005-2010)	Phase II (2011-2015)	Phase III (2016-2020)	Total (2005-2020)	
Investment by Private Sector and Government	RM 6 billion	RM 9 billion	RM 15 billion	RM 30 billion	RM 4.5 billion*
Employment (at end period)**	40,000	80,000	160,000	160,000	54,000***
Annual Revenue (at end period)**	RM 20 billion	RM 50 billion	RM 100 billion	RM 100 billion	RM 15.4 billion
Contribution to GDP	2.5%	4%	5%	5%	2.2%

Source: BiotechCorp

Notes:

\* This include RM 1.9 billion from the private sector and RM 2.6 billion from the Government. (Source: BiotechCorp)

\*\* This is the total number/value at the end of each Phase. The target for 2020 is the same as that at the end of Phase III.

\*\*\* This statistic from JobStreet Malaysia (as at February 2010) includes employment in the biotech industry as well as the life sciences and other biotech-related industries.

### 'Top 5' Significant Accomplishments Achieved Within 3 Years by BioNexus Status Companies as at 31 December 2009

Company	Achievement
PureCircle Sdn Bhd (formerly known as Stevian Biotechnology Corporation Sdn Bhd)	Listed on the London Stock Exchange's Alternative Investment Market (11 December 2007).  <b>Market capitalisation: RM 1.8 billion</b>
Holista Biotech Sdn Bhd	Acquired Colltech Australia Ltd, a company listed on the Australian Stock Exchange, through a reverse takeover (10 July 2009).  <b>Market capitalisation: RM 56.1 million</b>
Sunzen LifeSciences Sdn Bhd	Listed on MESDAQ (8 October 2008).  <b>Market capitalisation: RM 35.1 million</b>
Stemlife Berhad	Listed on Bursa Malaysia (17 October 2006).  <b>Market capitalisation: RM 100.65 million</b>
ACGT Sdn Bhd (formerly known as Asiatic Centre for Genome Technology Sdn Bhd)	Collaborated with the world renowned J. Craig Venter Institute / Synthetic Genomics and successfully completed the assembly and annotation of the oil palm genome.

Source: BiotechCorp

## Total Approved Investment in BioNexus Status Companies as at 31 December 2009

Industry Sector	Total (2009)	Total (2005-2009)
Agriculture	RM 63.0 million	RM 503.9 million
Healthcare	RM 24.5 million	RM 432.2 million
Industrial	RM 32.8 million	RM 588.8 million
<b>Total</b>	<b>RM 120.3 million</b>	<b>RM 1,524.9 million</b>

Source: BiotechCorp

## BioNexus Status Companies: Investment by Industry

Industry Sector	Total (2008)	Total (2009)	% Growth (2008-2009)
Agriculture	RM 315.4 million (44%)	RM 569.9 million (45%)	▲ 80.7%
Healthcare	RM 248.9 million (35%)	RM 328.7 million (26%)	▲ 32.1%
Industrial	RM 145.9 million (21%)	RM 375.7 million (29%)	▲ 157.5%
<b>Total</b>	<b>RM 710.2 million (100%)</b>	<b>RM 1,274.3 million (100%)</b>	<b>▲ 79.4%</b>

Source: BiotechCorp

## BioNexus Status Companies: R&D Expenses by Industry

Industry Sector	Total (2008)	Total (2009)	% Growth (2008-2009)
Agriculture	RM 5.5 million (27%)	RM 19.1 million (44%)	▲ 247.3%
Healthcare	RM 9.4 million (46%)	RM 19.9 million (46%)	▲ 111.7%
Industrial	RM 5.5 million (27%)	RM 4.5 million (10%)	▼ 18.2%
<b>Total</b>	<b>RM 20.4 million (100%)</b>	<b>RM 43.5 million (100%)</b>	<b>▲ 113.2%</b>

Source: BiotechCorp

## BioNexus Status Companies: Employees by Industry

Industry Sector	Total (2008)	Total (2009)	% Growth (2008-2009)
Agriculture	647 (45%)	849 (40%)	▲ 31.2%
Healthcare	434 (30%)	759 (35%)	▲ 74.9%
Industrial	364 (25%)	532 (25%)	▲ 46.2%
<b>Total</b>	<b>1,445 (100%)</b>	<b>2,140 (100%)</b>	<b>▲ 48.1%</b>

Source: BiotechCorp

## BioNexus Status Companies: Knowledge Workers by Industry

Industry Sector	Total (2008)	Total (2009)	% Growth (2008-2009)
Agriculture	281 (40%)	330 (35%)	▲ 17.4 %
Healthcare	321 (45%)	457 (49%)	▲ 42.4 %
Industrial	106 (15%)	155 (16%)	▲ 46.2%
<b>Total</b>	<b>708 (100%)</b>	<b>942 (100%)</b>	<b>▲ 33.1%</b>

Source: BiotechCorp

## BioNexus Status Companies: Ratio of Knowledge Workers/Employees by Industry

Industry Sector	% K-Workers/ Employees (2009)	Average employees/ company (2009)	Average K-Workers/ Company (2009)
Agriculture	38.9%	14	6
Healthcare	60.2%	12	7
Industrial	29.1%	19	6
<b>Total</b>	<b>44.0%</b>	<b>14</b>	<b>6</b>

Source: BiotechCorp

## BioNexus Status Companies: Revenue by Industry

Industry Sector	Total (2008)	Total (2009)	% Growth (2008-2009)
Agriculture	RM 170.7 million (44%)	RM 158.3 million (30%)	↓ 7.3%
Healthcare	RM 77.2 million (20%)	RM 119.0 million (22%)	↑ 54.1 %
Industrial	RM 139.8 million (36%)	RM 259.2 million (48%)	↑ 85.4%
<b>Total</b>	<b>RM 387.7 million (100%)</b>	<b>RM 536.5 million (100%)</b>	<b>↑ 38.4%</b>

Source: BiotechCorp

## Technology Acquired as at 31 December 2009

Company	Achievement
Nanobiotix S.A. (France) + BiotechCorp + Universiti Sains Malaysia (USM)	<ul style="list-style-type: none"> <li>• BiotechCorp acquired the nanotech platform technology and a worldwide exclusive licence from Nanobiotix S.A.</li> <li>• It enables application of high-level nanotechnology for treatment of conditions other than cancer.</li> <li>• USM was granted a sub-licence by BiotechCorp.</li> <li>• Commercialisation of at least two applications by 2010: a drug delivery system for tuberculosis and a diagnostic kit for tropical diseases.</li> <li>• One commercial sub-licensee has been appointed to develop neuron specific delivery of GnRH-R siRNA to stimulate growth.</li> </ul>
Medsaic Pty Ltd (Australia) + BiotechCorp + Institute for Medical Research (IMR)	<ul style="list-style-type: none"> <li>• BiotechCorp acquired a technology licence for the DotScan™ antibody microarray diagnostic platform technology.</li> <li>• It enables the development of diagnostic applications.</li> <li>• The licence allows the creation of new intellectual property rights.</li> <li>• BiotechCorp is entitled to sub-license for research and commercialisation purposes.</li> <li>• IMR was granted a sub-licence.</li> </ul>
FeyeCon Development & Implementation, B.V. (The Netherlands) + BiotechCorp + Universiti Putra Malaysia (UPM)	<ul style="list-style-type: none"> <li>• BiotechCorp acquired the Supercritical Fluid (SCF) platform technology from FeyeCon.</li> <li>• It enables creation of high value-added natural products in Malaysia (e.g. standardised herbal extracts).</li> <li>• The technology applications are for Particle Formation and Supercritical Fluid Extraction.</li> <li>• BiotechCorp is entitled to sub-license for research and commercialisation purposes.</li> <li>• UPM was selected as the custodian of the platform technology.</li> </ul>
DNA Landmarks Inc. (Canada) + BiotechCorp + Malaysian Agricultural Research and Development Institute (MARDI)	<ul style="list-style-type: none"> <li>• BiotechCorp acquired a technology licence for Marker Assisted Selection (MAS) in Plant and Animal Breeding.</li> <li>• It uses DNA markers in the process of selecting desired plant varieties in breeding programmes.</li> <li>• This technology will be useful in producing better crop varieties in shorter time periods to enhance agriculture yield.</li> <li>• BiotechCorp is entitled to sub-license for research and commercialisation purposes.</li> <li>• One of MARDI's laboratories serves as the Centre for Marker Discovery and Validation (CMDV).</li> </ul>

Source: BiotechCorp

The acquisition of cutting-edge technology has given Malaysia a competitive advantage in the biotech industry.

# At the Core of Biotechnology in Malaysia

## What is Biotechnology?

- The United Nations Convention on Biological Diversity defines biotechnology as any technological application that uses biological systems, living organisms or derivatives to make or modify products or processes for specific use.
- Biotechnology combines disciplines like genetics, molecular biology, biochemistry and cell biology which are linked to disciplines like chemical engineering, information technology and robotics.
- Biotechnology has diverse applications in, but not limited to, agriculture, healthcare and industrial processes, products and services.

## The National Biotechnology Policy

The National Biotechnology Policy is a landmark policy encompassing nine thrusts which emphasise Malaysia's intended direction and the Government's proposed measures towards developing biotechnology for wealth creation and national well-being.

### The Nine Thrusts of the National Biotechnology Policy

<b>1</b> Agricultural Biotechnology	Transform and enhance the value creation of the agricultural sector through biotechnology.
<b>2</b> Healthcare Biotechnology	Capitalise on the country's biodiversity for commercialising the discoveries of health-related natural products and bio-generic drugs.
<b>3</b> Industrial Biotechnology	Leverage on the country's strong manufacturing sector to increase opportunities for bio-processing and bio-manufacturing.
<b>4</b> Research & Development, Technology Acquisition	Establish centres of biotechnology excellence, through research and development, as well as technology acquisition.
<b>5</b> Human Capital Development	Build the nation's human capital through education, training and research activities, with the aim of producing knowledge generation capabilities.
<b>6</b> Financial Infrastructure	Provide the right financial support via competitive lab-to-market funding and incentives to encourage committed participation from academia and the private sector, including Government-linked companies.
<b>7</b> Legal & Regulatory Framework	Strengthen the legal and regulatory framework by reviewing ownership of intellectual properties and regulations relating to biotechnology process and business.
<b>8</b> Strategic Development	Build international recognition for Malaysian biotechnology and find a niche in the global biotechnology value chain.
<b>9</b> Government Support & Commitment	Realise the execution of the policy through the establishment of a dedicated and professional Government agency to spearhead the development of the biotechnology industry with the incorporation of Malaysian Biotechnology Corporation Sdn Bhd (BiotechCorp).

# The Biotechnology Master Plan

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Biotechnology is recognised by the Government of Malaysia to be a key strategic driver to propel economic and social progress – one which can unlock the value of the nation’s natural resources and human capital talents to improve the lives of many of its people. The master plan outlines three stages of growth which the local biotech industry must go through in order to meet this objective.

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## **PHASE 1: CAPACITY BUILDING (2005-2010)**

### *The Beginning: Nurturing & Growth*

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1. Adoption of policies, plans and strategies.
  2. Establishment of advisory and implementation Councils
  3. Establishment of Malaysian Biotechnology Corporation Sdn Bhd (BiotechCorp)
  4. Capacity Building in Research & Development
  5. Industrial Technology Development
  6. Develop Agricultural, Healthcare and Industrial Biotechnologies
  7. Develop Legal and Intellectual Property Framework
  8. Incentives
  9. Business and Corporate Development through Accelerator Programmes
  10. Bioinformatics
  11. Skills Development
  12. Job Creation
  13. Regional Biotechnology Hubs
  14. Development BioNexus Malaysia as a Brand
- 

## **PHASE 2: LAB TO MARKET (2011-2015)**

### *Commercialising Science to Business*

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1. Develop expertise in drug discovery and development based on biodiversity and natural resources.
  2. New Products Development
  3. Technology Acquisition
  4. Promote Foreign Direct Investment participation
  5. Intensify Spin-off Companies
  6. Strengthen Local and Global Brands
  7. Develop Capability in Technology Licensing
  8. Job Creation
- 

## **PHASE 3: GLOBAL BUSINESS (2016-2020)**

### *Global Branding for Malaysia's Biotech Industry*

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1. Consolidate Strengths and Capabilities in Technology Development
  2. Further Develop Expertise and Strength in Drug Discovery and Development
  3. Leading Edge Technology Business
  4. Maintain Leadership in Innovation and Technology Licensing
  5. Create greater value through Global Malaysian Companies
-

# Financial Infrastructure for Funding & Investments

## The Stages of Biotech Companies & Funding Requirements

	PRE SEED		SEED & START UP		EARLY STAGE		COMMERCIALISATION	
<b>Stage of Development</b>	<ul style="list-style-type: none"> <li>Value Analysis</li> <li>Concept Idea</li> <li>Feasibility Study</li> </ul>		<ul style="list-style-type: none"> <li>R&amp;D</li> <li>Market Research</li> <li>Prototype</li> <li>Incubation</li> </ul>		<ul style="list-style-type: none"> <li>Pilot Plant</li> <li>Early Production</li> </ul>		<ul style="list-style-type: none"> <li>Mature Production</li> <li>Value Realisation</li> <li>Expansion</li> </ul>	
<b>Funding Instrument</b>	<ul style="list-style-type: none"> <li>Grant</li> </ul>		<ul style="list-style-type: none"> <li>Grant</li> <li>Equity</li> </ul>		<ul style="list-style-type: none"> <li>Grant</li> <li>Debt</li> <li>Equity</li> </ul>		<ul style="list-style-type: none"> <li>Grant</li> <li>Debt</li> <li>Equity</li> </ul>	
<b>Funding Parties</b>	Public	Private	Public	Private	Public	Private	Public	Private
	<ul style="list-style-type: none"> <li>Government Agencies</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	<ul style="list-style-type: none"> <li>Government Agencies</li> <li>Development Financial Institutions</li> </ul>	<ul style="list-style-type: none"> <li>Local and Foreign venture capitalists (VCs)</li> </ul>	<ul style="list-style-type: none"> <li>Government Agencies</li> <li>Development Financial Institutions</li> </ul>	<ul style="list-style-type: none"> <li>Local and Foreign VCs</li> <li>Local and Foreign Financial Institutions including Islamic Banks</li> </ul>	<ul style="list-style-type: none"> <li>Government Agencies</li> </ul>	<ul style="list-style-type: none"> <li>Local and Foreign VCs and private equities (PEs)</li> <li>Local and Foreign Financial Institutions including Islamic Banks</li> <li>GLCs and Institutional Investors</li> <li>Public Investors through Capital Market</li> </ul>

Source: BiotechCorp

The biotech industry in Malaysia continues to draw investments from both public and private funding. Total approved investments by BioNexus Status companies amounted to RM 1.52 billion at 31 December 2009, an increase of 8.6% during the year under review. Investment realised amounted to RM 1.27 billion as at 31 December 2009 indicating a high rate of capital utilisation of 84%. This is in line with the increase in the number of BioNexus Status companies from 92 companies at the end of 2008 to 151 companies at the end of 2009.

There has been continued international interest in Malaysia's biotech industry. The number of BioNexus Status companies with international interest (both minority interest and controlling interest) increased by 53.3%, from 30 in 2008 to 46 in 2009. These international investments are mainly from Australia, Belgium, Holland, India, Japan, Singapore, Taiwan, United Kingdom and the United States. Among these are 8 international companies at the end of 2008 and 14 at the end of 2009, with a total approved investment amounting to RM 74.3 million.

In 2009, Holista Biotech Sdn Bhd, a BioNexus Status company, took control of CollTech Australia Limited, a company listed in the Australian Securities Exchange (ASX) through a reverse take-over exercise. Other listed BioNexus Status companies include Stemlife Berhad and Sunzen Biotech Berhad which are listed on Bursa Malaysia as well as PureCircle which is listed on the Alternative Investment Market of the London Stock Exchange.

With respect to performance in terms of the thirteen (13) biotechnology and life sciences companies (including two (2) BioNexus companies – Stemlife Berhad and Sunzen Biotech Berhad) listed on Bursa Malaysia, there is an increase of 3.5% in market capitalisation from RM 1.72 billion at the end of 2008 to RM 1.78 billion at end 2009. Two (2) BioNexus companies that are listed on foreign exchanges had also seen their market capitalisation increase – Pure Circle on London Stock Exchange’s AIM market that saw an increase of 23% from £ 262 million (RM 1.3 billion; rate £ 1 = RM 5) as at end 2008 to £ 321 million (RM 1.8 billion; rate £ 1 = RM 5.5) in end 2009, and Holista Colltech on Australian Securities Exchange had a significant increase of 135% in market capitalisation from A\$ 7.7 million (RM 18.5 million; rate A\$ 1 = RM 2.4) as at end 2008 to A\$ 18.1 million (RM 56.1 million; rate A\$ 1 = RM 3.1) in end 2009.

## Funding Partners

Public Sources	Other Sources
<ul style="list-style-type: none"> <li>• Malaysian Biotechnology Corporation Sdn Bhd (BiotechCorp)</li> <li>• Malaysian Technology Development Corporation (MTDC)</li> <li>• Malaysian Life Sciences Capital Fund (MLSCF)</li> <li>• Malaysian Debt Ventures (MDV)</li> <li>• SME Bank</li> <li>• Ministry of Science, Technology and Innovation (MOSTI)</li> </ul>	<ul style="list-style-type: none"> <li>• Private Venture Capitalists</li> <li>• Corporations</li> <li>• Capital Market Players</li> </ul>

### More details for BioInvestors

Visit <http://www.biotechcorp.com.my> for more information.

# BiotechCorp: At a Glance

**Malaysian Biotechnology Corporation Sdn Bhd (BiotechCorp)** (Company No. 691431-D) was incorporated under provisions of the Companies Act 1965 on 13 May 2005 to identify value propositions in research and development (R&D) and commerce and to support and facilitate these ventures through financial assistance and advisory services.

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**Structure** BiotechCorp is an agency of the **Ministry of Science, Technology and Innovation (MOSTI)**.

Its issued and fully up paid share capital (95,000,002 ordinary shares of RM 1.00 each) is held by the **Minister of Finance Incorporated** (95,000,001 shares) and **Federal Lands Commissioner** (one share).

It is governed by the **Biotechnology Implementation Council (BIC)** (see page 28) and counselled by the **Biotechnology International Advisory Panel (IAP)** (see page 28), both chaired by the Honourable Prime Minister of Malaysia.

Six **Cluster Working Group (CWG) Committees** were established in 2006 to facilitate coordination between ministries and government agencies (see page 28).

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**Key Mandates** Act as a one-stop-centre for all biotechnology initiatives in Malaysia.

Nurture and accelerate growth of Malaysian biotech companies.

Actively promote foreign direct investments in biotechnology.

Create a conducive environment for biotechnology in Malaysia.

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**Vision** To enhance the Economic, Health and Social Well Being of the Nation.

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**Mission** Lead the Development of the Biotechnology Industry in Malaysia.

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**Corporate Values** **Teamwork:** In a relationship based on mutual respect and understanding, we work together with our colleagues, clients and partners to achieve common goals.

**Integrity:** We conduct our business with uncompromising integrity.

**Excellence:** We strive to achieve excellence in all that we do.

**Accountability:** We drive the delivery of results for the organisation and the nation.

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**Leadership** See page 21 - 27 (Board of Directors) and page 31 - 32 (The Management Team).

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## Business Information

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**Registered Office  
& Principal Place of Business**

Level 23, Menara Atlan  
161B Jalan Ampang  
50450 Kuala Lumpur  
Malaysia

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**Principal Banker**

Malayan Banking Berhad  
Lot 1.01, Ampang Park  
184 Jalan Ampang  
50450 Kuala Lumpur  
Malaysia

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**Auditor**

KPMG Desa Megat & Co  
Chartered Accountants  
Wisma KPMG  
Jalan Dungun  
Damansara Heights  
50490 Kuala Lumpur  
Malaysia

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**Tax Consultant**

Ernst & Young  
Chartered Accountants  
Level 23A, Menara Millenium  
Jalan Damanlela  
Pusat Bandar Damansara  
50490 Kuala Lumpur  
Malaysia

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# Corporate Information



## Chairman's Message



Since the launch of the National Biotechnology Policy in 2005, the biotech industry in Malaysia has recorded a total investment of RM 4.5 billion (at the end of 2009). Out of this investment, 57.8% was funded by the Government while the remainder was funded by the private sector. The promotion of extensive research and development (R&D) activities in the life sciences and the acquisition of cutting-edge technology in recent years are all part of our efforts to accelerate the commercialisation of products and services of the biotech industry stakeholders.

The contribution of the biotech industry to Gross Domestic Product (GDP) in 2009 was estimated at 2.2%. Biotechnology continues to be a growing industry with much scope for innovation, creativity and wealth creation opportunities. BiotechCorp has been an active champion of scientific discovery and in transforming innovation to build a knowledge-based society in Malaysia. An important strategy has been implemented – to take necessary measures to nurture young minds to appreciate the harnessing of the life sciences to bring about advancements with day-to-day applications which will improve the lives of everyone.

Events and activities by BiotechCorp in 2009 have incorporated an intensive campaign to enhance awareness of the role of biotechnology in our lives and BiotechCorp's role in helping match business partners, introduce R&D opportunities as well as provide funding and mentor support for commercialisation plans. The overall focus has been on ensuring sustainable development for the biotech industry.

It is important to continue promoting innovation and the use of technology in the life sciences for knowledge generation, wealth creation and societal well-being. Science is constantly evolving, and thus there is now a need to propose the review or restructure of curriculum and programmes at Malaysian universities and training institutes, to ensure that they meet industry and business requirements; this would ensure that Malaysia can offer the right type of biotech talents to attract more foreign direct investment.

It is noteworthy that there is a rapid increase in BioUsahawan activities. These home-grown success stories will raise awareness of the phenomenal work of our scientists, researchers and entrepreneurs. Video clips of interesting biotech-related efforts have been uploaded to BiotechCorp's corporate website, and subtitles in English will be added in 2010 to ensure that we can share these proud accomplishments with the rest of the world.

Malaysia makes a good operational base for access to biotechnology in Asia. In September, the announcement of the development plan for Bio-XCell marked another milestone for BiotechCorp. The creation of this custom-built biotech ecosystem for R&D, manufacturing and commercialisation activities in industrial and healthcare biotechnology will take place in three phases over a period of six years. Researchers, scientists and entrepreneurs will be able to excel in conditions, and with facilities geared towards ensuring innovation and success in biotechnology.

I sincerely thank the board of directors who have contributed their time and experience in providing advice and assistance in 2009. I would also like to express my sincere gratitude to the team at BiotechCorp for remaining committed and eager to achieve, to ensure that the strategic business plan for 2009 was implemented according to schedule. Let us all plan and look forward to another rewarding year in 2010.

Tan Sri Datuk Dr Ahmad Zaharudin Idrus  
Chairman

## CEO's Report



### **Malaysia can succeed in Biotechnology**

Just as at one time businesses thought they could do without IT, biotechnology has become the next wave, and the prospect for business is that it can actually benefit from a biotech tie-up. We had started 2009 with a determined mindset to achieve the strategic goals set for the year, and it has been an eventful one indeed. I would like to draw your attention to some statistics for the biotech industry at the end of December 2009:

- Total investment by the private sector (RM 1.9 billion) and the Government (RM 2.6 billion) has reached RM 4.5 billion (since 2005).
- 151 BioNexus Status companies have contributed RM 1.52 billion in total approved investments.
- The unaudited revenue\* of BioNexus Status companies totalled RM 536.5 million in 2009 (Q3'07-Q4'09: RM 1.056 billion) and the biotech industry contributed a total of RM 15.4 billion to the Malaysian Gross Domestic Product (GDP), directly and indirectly, in 2009.
- 54% or RM 290.6 million of revenue from BioNexus Status companies was a result of export sales.

### **BioNexus Status companies on the world stage**

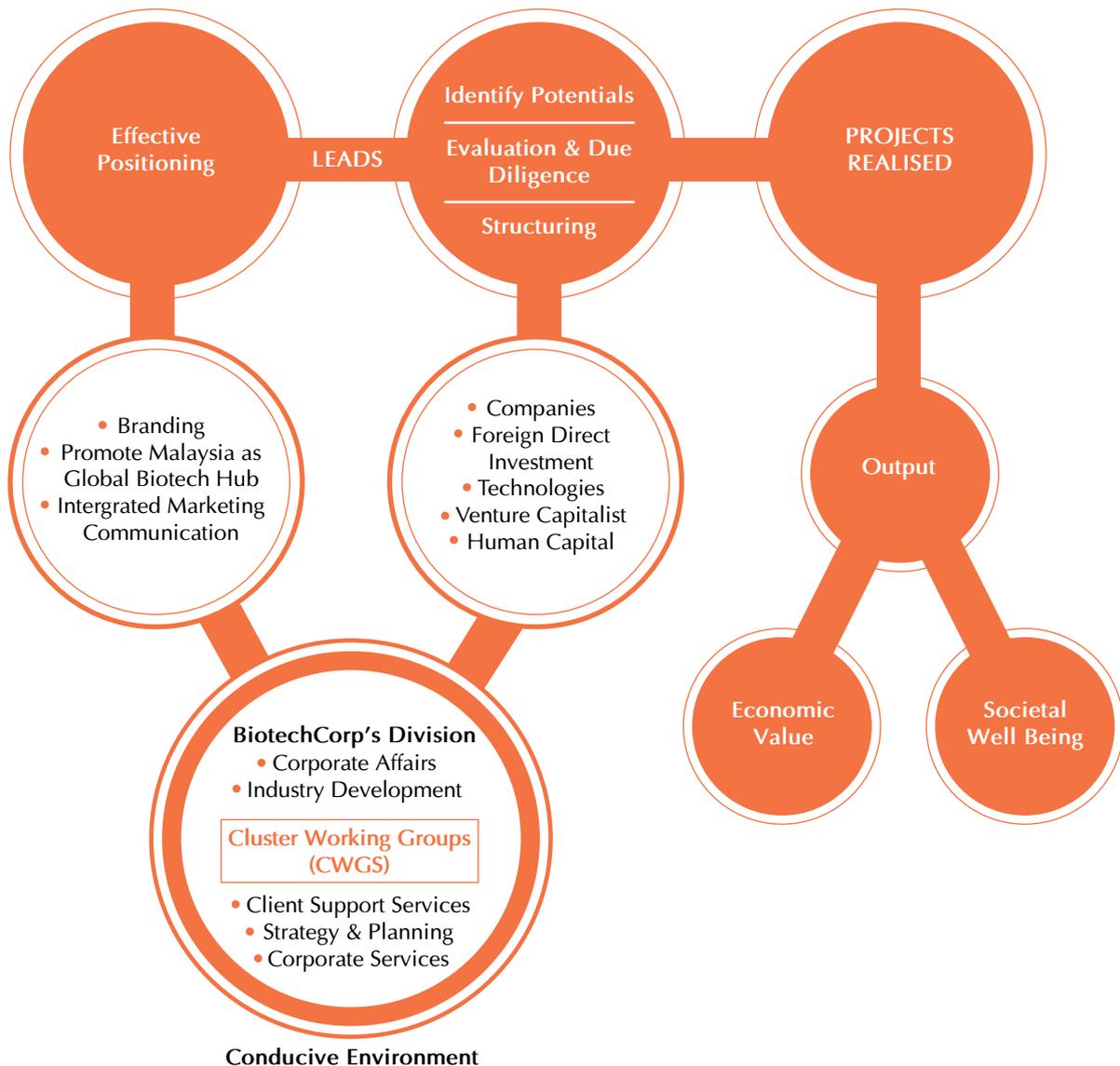
We are pleased to note the listing of BioNexus Status companies on Bursa Malaysia as well as the London Stock Exchange and the Australian Securities Exchange. The market capitalisation of biotech and life sciences companies on Bursa Malaysia amounted to RM 1.78 billion at the end of 2009. In fact, it was a historic year as the first successful takeover of an Australian biotech company was accomplished by a Malaysian BioNexus Status company. These are statistics of national pride as they took less than three years, since the launch of BioNexus in 2006, to achieve. Since the norm is for a start-up company in a technology or innovation sector to need at least ten years before it becomes a company of a billion Ringgit capital strength, this is good news indeed for the biotech industry and for business in general.

*\* Audited financial statements by BioNexus companies will be submitted by Q3 2010.*

## Strategic business plans are only effective if momentum is sustained

The Business Plan implemented in the year 2009 adopted the end-to-end value chain approach to meet the objectives set out in the National Biotechnology Policy and to work towards completing the first phase of capacity building. Steps were also taken to make advancements in international accreditation for Good Laboratory Practices (see Accreditation (GLP) on page 42) as well as the GLP Compliance Programme and Good Manufacturing Practices (see Accreditation (GCP & GMP) on page 42). Overall, BiotechCorp has been successful in developing exponential growth strategies to accelerate commercialisation in the biotech industry.

### Completion of Capacity Building...



### ...Ready to Commercialise

Source: BiotechCorp

## **Biotech products for the global market**

Biotechnology is an engine of economic growth. BioNexus has led the building of the biotech business by creating potential for adding value to numerous existing sectors of the economy in Malaysia. We created news abroad when a team of researchers from Universiti Sains Malaysia successfully decoded the first draft genome of the rubber tree in 2009. This was only one year after the Asiatic Centre for Genome Technology, a BioNexus Status company and a subsidiary of the Genting Group, completed the draft assembly and annotation of the oil palm genome.

## **A biotech platform resilient to the impacts of economic change**

Other highlights for the year include an increased number of local and foreign companies participating in BioMalaysia 2009, with confirmed bookings for exhibition booths amounting to twice the number of exhibitors. The three-day event was visited by over 8,000 people and the measurable increase in the number of enquiries reflects the development of the biotech industry. The Prime Minister's announcement at BioMalaysia 2009 that biotechnology activities now contribute 2.2% of Malaysia's GDP was one in which the team at BiotechCorp took delight. We are now just a small step away from achieving the National Biotechnology Policy's target of a 2.5% contribution to GDP by the end of 2010.

## **A commitment to escalating Malaysia's value proposition**

I was happy to announce Bio-XCell to the public in September. The public-private partnership between BiotechCorp and UEM Land Holdings Berhad will develop a custom-built biotech ecosystem in Nusajaya, Iskandar Malaysia, with modern infrastructure and benefits that are geared towards setting a new global benchmark among the world's leading biotech parks. To date, Bio-XCell is receiving strong interests from both global and local companies. I am confident that Bio-XCell will be able to secure several significant global and local ecosystem clients in 2010.

## **Quality above self at all times**

In addition to a dynamic R&D commercialisation environment, we will have to continue to enhance our internal capacity and governance in order to benchmark BiotechCorp against our international counterparts. This includes monitoring corporate compliance and strategic plans through internal audit, checking on processes to ensure that negative variances (where actual results do not meet targets planned) are dealt with in a timely manner, using IT as an enabler and by improving human capital development and reward programmes for those who excel in what they do. The year 2009 will be remembered as the year in which BiotechCorp achieved ISO 9000 certifications for several key processes.

## **Biotech advancements are dependent on biologically diverse sources**

In 2009, attention was focussed, strategically, on using Malaysia's existing capabilities as leverage to move up the value chain. One of these capabilities is its wealth of biodiversity. As the United Nations has announced 2010 to be the International Year of Biodiversity, the initiative to promote biodiversity will be emphasised and investors will be invited to come and discover for themselves the opportunities it presents as well as to learn more about what the biotech industry in Malaysia has done to preserve, cultivate and commercialise the indigenous wonders that the nation offers.

## **Sowing the seeds of success**

Biotechnology in Malaysia is headed for a year of transformation in 2010 when we advance from capacity building to commercialisation on a greater scale. It has to happen now – and the "commercialise or die" analogy is one that I have used frequently in describing the need to make commercialisation happen – sooner rather than later.

In support of the Malaysia Innovative 2010 initiative by the Government, we will reinforce our commitment to endorsing the spirit of innovation and creativity in making things happen. In addition to thinking differently, we will need to stress to the world that opportunities abound and that smart thinking is welcome in Malaysia. The team at BiotechCorp will need to build momentum in attracting international investors to be part of an environment which fully engages in positive change, and in influencing their decision to invest in commercialisation opportunities in Malaysia, profit from them and be more competitive – all from, ideally, a regional base on our shores; the new biotechnology hub of Asia.

It has been a year of many accomplishments and I could not have done this alone. I would like to put on record my sincere appreciation to the competent team of talented individuals at BiotechCorp, each of whom has worked hard to meet and surpass the high expectations set by the Board of Directors. To our distinguished Board of Directors, led by Chairman YBhg. Tan Sri Datuk Dr Ahmad Zaharudin Idrus, a special thank you for your continued guidance and foresight. I would also like to thank the network of biotech collaborators within the country and globally.

Dato' Iskandar Mizal Mahmood  
Chief Executive Officer

# Our People

Strategic leadership provides a clear direction.

## Board of Directors

### Position

Chairman

### Name

YBhg Tan Sri Datuk Dr Ahmad Zaharudin Idrus



### Profile

YBhg Tan Sri Datuk Dr Ahmad Zaharudin Idrus, aged 65, was appointed by the Prime Minister of Malaysia as Chairman of BiotechCorp on 16 May 2005. Prior to his appointment to the Board, YBhg Tan Sri Datuk Dr Ahmad Zaharudin Idrus served as the Science Advisor to the Prime Minister of Malaysia from 2001 to 2006. He was the Vice Chancellor of Universiti Teknologi Malaysia from 1994 to 2001.

Besides serving as Chairman of BiotechCorp and several other organisations, YBhg Tan Sri Datuk Dr Ahmad Zaharudin Idrus is also a member of the IDB Advisory Panel on Science and Technology, Islamic Development Bank, Jeddah, Saudi Arabia.

After graduating with an Agriculture Science degree from Universiti Malaya in 1969, he proceeded to complete his Masters and PhD from the University of Aberdeen.

YBhg Tan Sri Datuk Dr Ahmad Zaharudin Idrus has been highly instrumental in the development of the Malaysian science and technology agenda. He served as Secretary of the National Council of Scientific Research and Development under the Ministry of Science, Technology and the Environment from 1981 to 1986. He was subsequently appointed as the Controller of the Standards and Industrial Research Institute of Malaysia (SIRIM), a position he held from 1986 to 1989.

Prior to his term at Universiti Teknologi Malaysia, YBhg Tan Sri Datuk Dr Ahmad Zaharudin Idrus served as the Director of Petronas Petroleum Research Institute from 1989 to 1992 and later as the Managing Director of Petronas Scientific Services from 1992 to 1994. YBhg Tan Sri Datuk Dr Ahmad Zaharudin Idrus was also a member of the Board of Petronas Refineries Pte. Ltd. from 1989 to 1994.

His contributions in the field of science and technology have gained him international recognition. In 1993, he received the Norway Award for Outstanding Contribution in the Field of Technology and in 1997, the ASEAN Achievement Award for Science.

YBhg Tan Sri Datuk Dr Ahmad Zaharudin Idrus was conferred the D.Sc (Hons. Causa) by the University of Portsmouth in 1998. Subsequently, the D.Sc (Honorary) by the University of Loughborough, Universiti Teknikal Malaysia Melaka in 2003, Universiti Teknologi Malaysia in 2005 and the Open University Malaysia in 2006.

In honour of his contributions, YBhg Tan Sri Datuk Dr Ahmad Zaharudin Idrus was conferred the award of "Chevalier de la Legion d'Honneur" by the French Government in 2004.

*Note: All members of the Board of Directors are Malaysian citizens.*



## Board of Directors

### Position

Chief Executive Officer

### Name

YBhg Dato' Iskandar Mizal Mahmood

### Profile

YBhg Dato' Iskandar Mizal Mahmood, aged 43, was appointed to the Board on 13 May 2005. Prior to his appointment to BiotechCorp, he was the Chief Executive Officer of Malaysian Technology Development Corporation (MTDC) a position he held since October 2003.

From 1999 to 2003, he was the General Manager of Malaysia Airports Berhad responsible for corporate finance, strategic planning, investor relations, business development and finance. He started his career with Arthur Andersen & Co in 1989 and had served in several financial institutions including Bumiputera Merchant Bankers Berhad and Commerce International Merchant Bankers Berhad Group.

A graduate from Boston University, Massachusetts with a Bachelor of Science degree in Business Administration (Accountancy), YBhg Dato' Iskandar Mizal Mahmood brings to BiotechCorp his expertise in investment, business development, strategic planning, finance, corporate financing and research.

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# Board of Directors

## Position

Director

## Name

YBhg Dato' Puteh Rukiah Abd Majid

## Represents Designation

Ministry of Finance

Deputy Secretary General (Systems & Controls)



## Profile

YBhg Dato' Puteh Rukiah Abd Majid, aged 57, joined the Board on 27 November 2006.

She holds a Bachelor of Economics (Hons) from Universiti Malaya and Master of Economics from Western Michigan University, USA.

She began her career in 1976 as an Assistant Director, Economic Planning Unit (EPU) of the Prime Minister's Department before serving as Chief Assistant Director of the Implementation, Coordination Unit of the Prime Minister's Department in 1986.

YBhg Dato' Puteh Rukiah Abd Majid continued to serve the Government of Malaysia and held several senior positions in the various ministries in the Government. In 1990, she was appointed the Chief Assistant Director of EPU. She was subsequently promoted as the Budget Senior Assistant Director of the Ministry of Finance (MOF) in 1992. In year 2000, in recognition of her capabilities and vast experience, she was appointed as the Deputy Secretary of the MOF (Inc) Companies, Privatisation and Public Enterprises Division, Ministry of Finance.

YBhg Dato' Puteh Rukiah Abd Majid is currently the Deputy Secretary General (Systems & Controls), Ministry of Finance. She took up the position in September 2006.

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## Board of Directors

### Position

Director

### Name

YBhg Dato' Madinah Mohamad

### Represents Designation

Ministry of Science, Technology and Innovation  
Secretary General

### Profile

YBhg Dato' Madinah Mohamad, aged 53, joined the Board on 12 June 2009.

YBhg Dato' Madinah Mohamad graduated with a degree in Political Science from Universiti Sains Malaysia and holds a Masters degree in Human Resource Development from Universiti Putra Malaysia.

She is currently the Secretary General of the Ministry of Science, Technology and Innovation, Malaysia (MOSTI). As the Secretary General, she oversees the development of policies and implementation of the science, technology and innovation agenda in Malaysia and operations of MOSTI.

Prior to her current position, YBhg Dato' Madinah Mohamad served in various Government agencies such as the Public Service Department, the Ministry of National and Rural Development, the Ministry of Works, and the National Unity and Integration Department.

She began her civil service career as an Administrative and Diplomatic Officer in 1981 with the Ministry of Foreign Affairs.

YBhg Dato' Madinah Mohamad was awarded the Darjah Kebesaran Sri Indera Mahkota Pahang (SIMP) by His Royal Highness the Sultan of Pahang in 2009.

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# Board of Directors

## Position

Director

## Name

YBhg Datuk Roseley Dato' Haji Khalid

## Represents Designation

Department of Agriculture Malaysia  
Director-General of Agriculture



## Profile

YBhg Datuk Roseley Dato' Haji Khalid, aged 57, was appointed to the Board on 5 March 2010.

He holds a Bachelor in Agriculture Science from Universiti Putra Malaysia and a Master of Science in Agriculture Economics from Texas A & M University, USA.

YBhg Datuk Roseley Dato' Haji Khalid started his career as an Evaluation Agriculture Officer at the State Department of Agriculture, Negeri Sembilan in 1977. He is currently the Director-General of Agriculture, Department of Agriculture Malaysia, a position he held since 2008.

He has vast experience in the area of agriculture food industry. As the Agriculture Attaché/Alternate Permanent Representative (APR) of Malaysia to the Food and Agriculture Organization (FAO) of the United Nations at Rome, Italy, he was responsible in representing Malaysia in all meetings and negotiations at the United Nations agencies, the FAO, the WFP (The World Food Programme) and IFAD (International Fund and Agricultural Development). He was also involved in the preparation of the Second and Third National Agricultural Policy.

Besides BiotechCorp, YBhg Datuk Roseley Dato' Haji Khalid currently serves on the board of various bodies including the Federal Agricultural Marketing Authority (FAMA), the Muda Agriculture Development Authority (MADA) and the Farmers Organisation Authority. He is also the Chairman of the Pesticides Board of Malaysia, member of the Governing Board of Malaysian Agricultural Research & Development Institute (MARDI) and council member of the Farmers' Advisory Board.

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## Board of Directors

### Position

Director

### Name

Tuan Haji Mohd. Radzi Hussein

### Represents Designation

Accountant General's Department

Director, Information Technology  
Management Division

### Profile

Tuan Haji Mohd. Radzi Hussein, aged 56, was appointed to the Board on 21 May 2008.

Tuan Haji Mohd. Radzi Hussein holds a Bachelor of Accounting (Hons) degree from Universiti Malaya and a Masters degree in Business Administration from the University of Wales, Aberystwyth in the United Kingdom. He is a member of the Malaysian Institute of Accountants.

He joined the Government in 1982 as Cost Accountant in the Ministry of International Trade and Industry. From 1984 to 1993, he served as a Senior Treasury Accountant in the Accountant General's Department, Kuala Lumpur.

Later in 1993, Tuan Haji Mohd. Radzi Hussein was seconded to Universiti Utara Malaysia as the Deputy Bursar; a position he continued to hold until 1997. From 1997 to 2001, he served as the State Treasurer for Kedah State Government. Tuan Haji Mohd. Radzi Hussein was then again seconded to Kedah Akuakultur Sdn Bhd as Finance Manager for a period of one year.

Tuan Haji Mohd. Radzi Hussein was promoted and transferred in 2002 to take up the position of Chief Accountant in the Ministry of Home Affairs in Putrajaya.

In 2004, Tuan Haji Mohd. Radzi Hussein was appointed as the Deputy Director, Information Technology Management Division of the Accountant General's Department. He was then promoted in 2008, and is presently serving as the Director of the said Division.

Tuan Haji Mohd. Radzi Hussein currently serves on the Board of Pengurusan Aset Air Berhad and is also a Member of the Audit Committee of Amanah Saham Kedah Berhad.

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# Board of Directors

## Position

Director

## Name

Professor Dr Zainul Fadziruddin Zainuddin

## Represents Designation

Universiti Sains Malaysia  
Director, Innovation Office



## Profile

Professor Dr Zainul Fadziruddin Zainuddin, aged 48, was appointed to the Board of BiotechCorp on 4 September 2009.

Professor Dr Zainul Fadziruddin Zainuddin holds a Bachelor of Science in Microbiology from the University of East Anglia, United Kingdom and a PhD in Molecular Biology from the University of Surrey, United Kingdom.

Professor Dr Zainul Fadziruddin Zainuddin started his career in 1988 as a lecturer at the School of Medical Sciences, Universiti Sains Malaysia (USM), Pulau Pinang. He has held various positions in the said university including the position of the Head of Department of Medical Microbiology & Parasitology, School of Medical Sciences and was the founding Dean, School of Health Sciences.

He is currently the Director, Innovation Office, Research and Innovation Division, USM; a position he has held since 2007.

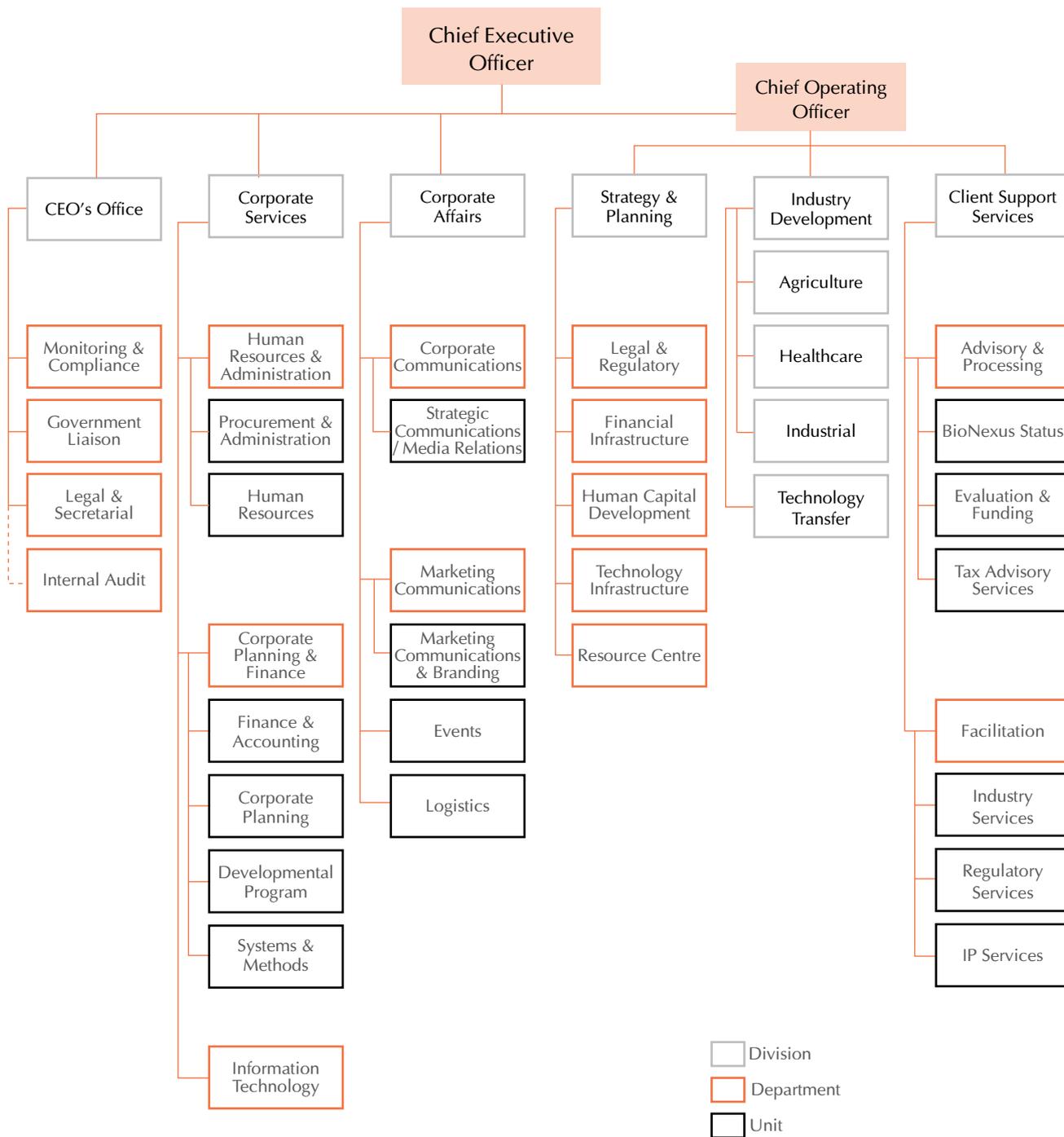
Besides BiotechCorp, Professor Dr Zainul Fadziruddin Zainuddin also sits on the Board of Malaysian Technology Development Corporation Sdn Bhd, Sanggar SAINS Sdn Bhd and IXC Malaysia Berhad.

*Note: All members of the Board of Directors are Malaysian citizens.*

BiotechCorp is governed by the <b>Biotechnology Implementation Council (BIC)</b> :	BiotechCorp is <b>counselled</b> by the <b>Biotechnology International Advisory Panel (IAP)</b> :	BiotechCorp facilitates coordination between ministries and/or government agencies through <b>Cluster Working Group (CWG) Committees</b> :
Prime Minister of Malaysia (Chairman)	Y.A.B. Dato' Sri Mohd. Najib Bin Tun Haji Abdul Razak <i>Prime Minister of Malaysia and Chairman, Biotechnology International Advisory Panel</i>	CWG on Agricultural Biotechnology
Deputy Prime Minister	Datuk Dr. Eric Tan <i>Emeritus Chancellor Curtin University of Technology</i>	CWG on Healthcare Biotechnology
Minister of Finance II	Dr. Kei-Inchi Arai <i>Professor Emeritus University of Tokyo</i>	CWG on Industrial Biotechnology
Minister of Science, Technology and Innovation	Mr. Alexandre F. Jetzer-Chung <i>Member of Board of Directors Novartis AG</i>	CWG on Legislative and Regulatory Framework
Minister of International Trade and Industry	Dr. Regis Kelly <i>Director California Institute for Quantitative Biosciences (QB3), University of California</i>	CWG on Human Capital Development
Minister of Agriculture & Agro-Based Industries	Dr. Roger Wyse <i>Managing Director Burrill &amp; Company</i>	CWG on Funding Support
Minister of Plantation Industries and Commodities	Mr. Scott Morisson <i>Senior Advisory Partner Ernst &amp; Young LLP</i>	
Minister of Domestic Trade and Consumer Affairs	Dr. Craig Venter <i>Founder / President J. Craig Venter Institute</i>	
Minister of Natural Resources and Environment	Prof. Anthony J. Sinskey <i>Professor of Biology Massachusetts Institute of Technology (MIT)</i>	
Minister of Health	Dr. Young Hoon Park <i>President Korea Research Institute of Bioscience and Biotechnology</i>	
Minister of Higher Education	Prof. Anne Glover <i>Chief Scientific Advisor to the Scottish Government; and Chair of Molecular &amp; Cell Biology, Institute of Medical Sciences University of Aberdeen</i>	
Minister in the Prime Minister's Department	Sir Roy M. Anderson <i>Professor of Department of Infection Disease Epidemiology Imperial College London</i>	
Secretary General to the Government	Prof. Pablo Valenzuela <i>Professor Universidad Catolica de Chile.</i>	
	Dr. Robert S. Zeigler <i>Director General International Rice Research Institute</i>	

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	<p>Prof. Samer K. Brahmachari  <i>Director General  Council of Scientific and Industrial Research</i></p> <p>Prof. John Mattick  <i>Professor of Molecular Biology and ARC Federation Fellow and  Director of the Centre for Molecular Biology and Biotechnology  University of Queensland</i></p>	

# Organisation Structure



Source : BiotechCorp

Cohesive teamwork leads to superior results.

# The Management Team

1



2



3



**1** Chief Executive Officer  
Dato' Iskandar Mizal Mahmood

**2** Chief Operating Officer  
Dr Wan Abdul Rahaman Wan Yaacob

**3** Senior Vice President, Corporate Services  
YM Raja Ridzwa Raja Abdul Aziz



**4** Senior Vice President, Corporate Affairs  
Encik Mohamad Azam Ali

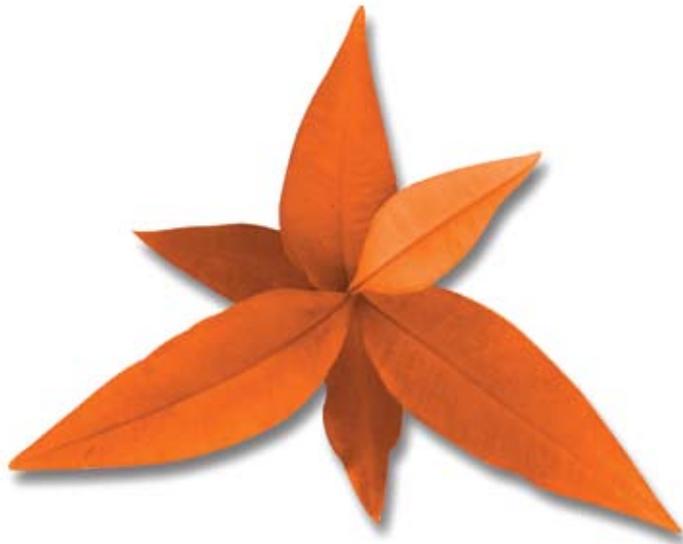
**5** Senior Vice President, Healthcare  
Mr Selvam Ramaraj

**6** Senior Vice President, Strategy & Planning  
Encik Mohd Yazid Abd Hamid

**7** Senior Vice President, Client Support Services  
Encik Razif Abd Aziz



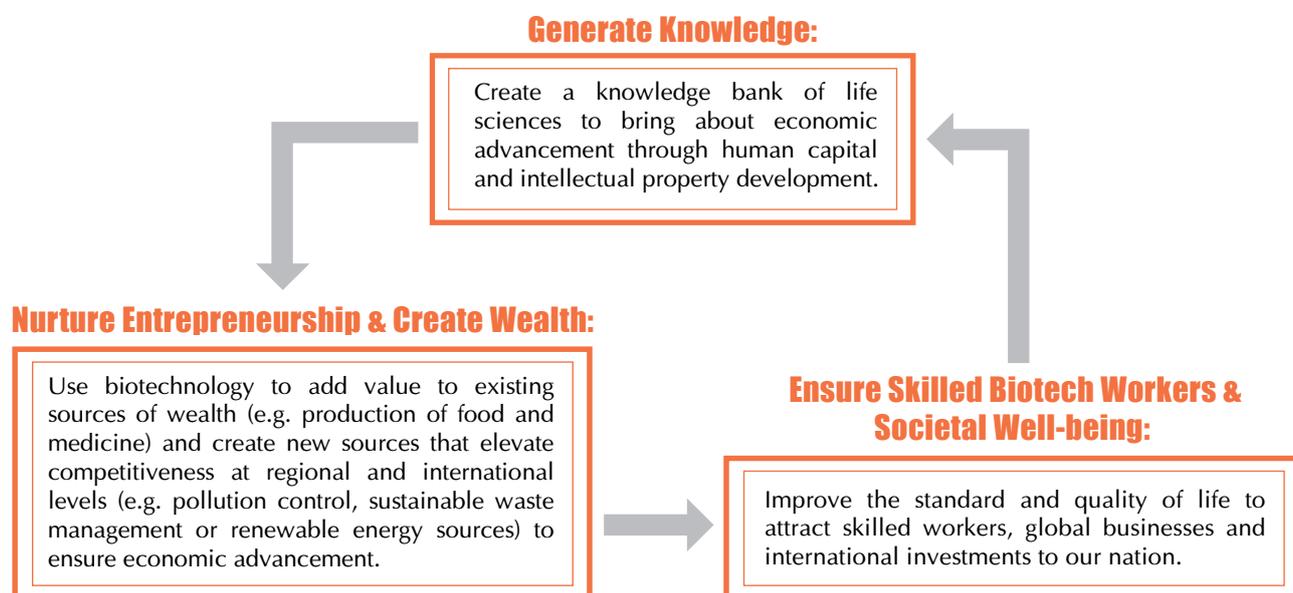
# **kacip fatimah** (*Labisia pumila*): **Conceive more**



Like the Malaysian *kacip fatimah*, a traditional herbal remedy to induce and ease childbirth, expect BiotechCorp to help deliver all the right components for an exciting future in biotechnology.

# Commercialisation of Biotechnology Gathers Speed

The first phase of building capacity in the biotech industry has been ongoing since 2005. Efforts have already commenced to prepare for the next phase of commercialisation, although scheduled to commence officially in 2011, to convert science (R&D) to business (products and services) and opportunities for profit. BiotechCorp is keeping ahead of its strategic action plans.



## Calendar of Events

2009 was a busy year for BiotechCorp. Numerous corporate communication and media events focussed on the strategic communication of industry developments to stakeholders, and improving public awareness of biotech-related facts and on opportunities.

BiotechCorp's new marketing tool was introduced during the year and handed out at local and overseas events. Finding a niche in branding BiotechCorp and the BioNexus Programme was, and will continue to be, an important focus.

### Date

### Event

March 16-18

BioEurope 2009  
*Milan, Italy*

The highlight of this event was the networking sessions with a diverse group of biotech experts from Europe and the rest of the world, where participants could openly share their insight and opinion on industry developments and the important issues of today.

<b>Date</b>	<b>Event</b>
<b>March 20</b>	<p><b>Business Partnering Programme with Wallonia Biotech Coaching (WBC), Belgium</b>  <i>PNB Darby Park, Kuala Lumpur, Malaysia</i></p> <p>WBC, the bio-incubator of the French-speaking region of Wallonia in Belgium, selected BiotechCorp as its preferred partner in developing and driving biotech entrepreneurship in Malaysia.</p>
<b>April 25-26</b>	<p><b>BioCareer 2009</b>  <i>Kuala Lumpur Convention Centre, Malaysia</i></p> <p>Career talks and educational seminars were part of this exhibition on the emerging and available career opportunities in the biotech industry. Networking sessions with recruiters resulted in the submission of 3,822 job applications and the scheduling of 354 interviews for the 3,125 jobs on offer.</p>
<b>May 11</b>	<p><b>BiotechCorp Annual Report 2008</b>  <i>Kuala Lumpur Convention Centre, Malaysia</i></p> <p>BiotechCorp's audited financial results for the year ended 31 December 2008 were announced at a press release.</p>
<b>May 18-21</b>	<p><b>BioAtlanta 2009</b>  <i>Georgia World Congress Centre, Atlanta, USA</i></p> <p>BiotechCorp completed the exchange of documents with four separate entities, namely: Belgium Biotech, Berlin Buch, Larta Institute and Nanobiotix S.A. (sub-licensing application for the nanotech platform technology). Three signing ceremonies were held: for the Centre for Proteomic &amp; Genomic Research and Simugen, for SVTI and BiotechCorp (handover of a business plan to establish a Centre of Excellence in Malaysia) and for 9Bio and Intas Pharmaceuticals.</p>
<b>May 30-31</b>	<p><b>BioIndustry Dialogue and Exhibition 2009 ('Jom Heboh')</b>  <i>Danga Bay, Johor Bahru, Malaysia</i></p> <p>This was an outreach programme which featured efforts in innovation and commercialisation by BioNexus Status companies. It was aimed at increasing awareness of biotechnology, the importance of commercialising life sciences used by the 'rakyat' as well as the need to make such products affordable.</p>
<b>June 23</b>	<p><b>Launch of Human Capital Development Report</b>  <i>Le Meridien Kuala Lumpur, Malaysia</i></p> <p>The report, a joint assessment by MOSTI, BiotechCorp and Frost &amp; Sullivan, explains Malaysia's competitive edge within the current economic scenario. It also projects a need for sustained human capital development to complement a positive forecast for growth in Malaysia's biotech industry.</p>
<b>June 28 – July 1</b>	<p><b>Ministerial Working Visit to South Korea</b>  <i>Busan, Daejeon, Suwon and Seoul, South Korea</i></p> <p>MOSTI Minister Datuk Dr. Maximus J. Ongkili led a Malaysian delegation of representatives from BiotechCorp, relevant ministries and agencies on this visit to meet with Korean business leaders in biotech-related institutions and companies.</p>

<b>Date</b>	<b>Event</b>
<b>July 7</b>	<p><b>Malaysian-Korean Business Summit</b>  <i>Kuala Lumpur Convention Centre, Malaysia</i></p> <p>Three signing ceremonies were held: for BiotechCorp and Korea Research Institute of Bioscience &amp; Biotechnology (KRIBB), for SIRIM Berhad and KRIBB, and for Ultimate Biotech and KRIBB. This was followed by a press conference with MOSTI Minister Datuk Dr. Maximus J. Ongkili, BiotechCorp CEO Dato' Iskandar Mizal Mahmood and KRIBB President Dr. Young Hoon Park.</p>
<b>July 21</b>	<p><b>BioUsahawan Press Conference 2009</b>  <i>Kuala Lumpur Convention Centre, Malaysia</i></p> <p>MOSTI Minister Datuk Dr. Maximus J. Ongkili, BiotechCorp CEO Dato' Iskandar Mizal Mahmood and Media Prima Group CEO Dato' Sri Farid Ridzuan spoke at this press conference (attended by representatives from Bernama, Business Times, New Straits Times, The Star and TV3) to highlight the success stories of entrepreneurs in the local biotech industry.</p>
<b>July 25-26</b>	<p><b>BioIndustry Dialogue &amp; Exhibition ('Jom Heboh')</b>  <i>Petrajaya, Sarawak, Malaysia</i></p> <p>This outreach programme attracted 9,330 visitors. Numerous activities were organised and information made available to raise awareness of biotechnology, especially among children.</p>
<b>July 30</b>	<p><b>BioInvestor Forum 2009</b>  <i>W Hotel, Hong Kong</i></p> <p>This forum focussed on creating awareness of the characteristics and nuances of the biotech industry in Malaysia – to engage the interest of the financial and investment community, to increase their understanding of the industry, and to enhance their ability to evaluate biotech companies and projects in Malaysia.</p>
<b>August 4-5</b>	<p><b>BioFunding 2009-Biotechnology Investment Opportunities Conference</b>  <i>Le Meridien Kuala Lumpur, Malaysia</i></p> <p>This conference focuses on creating awareness on the local and global biotechnology industry to the domestic investment and financial community. The event also showcased selected BioNexus companies, as well as their business models, products and services to potential investors/funders. The conference was officiated by Deputy Minister of Finance YB Datuk Chor Chee Heung.</p>
<b>August 6</b>	<p><b>Exchange of Documents on Technology Acquisition</b>  <i>Kuala Lumpur Convention Centre, Malaysia</i></p> <p>The ceremony to officiate BiotechCorp's acquisition of the Supercritical Fluid (SCF) platform technology was officiated by the Minister of Higher Education Dato' Seri Mohamed Khaled Nordin, BiotechCorp CEO Dato' Iskandar Mizal Mahmood, UPM Vice Chancellor Prof. Datuk Dr. Nik Mustapha R. Abdullah and FeyeCon Asia Sdn Bhd Managing Director Toine Paijens.</p>
<b>August 25</b>	<p><b>BioInvestor Forum 2009</b>  <i>Marriot Sydney Hotel, Australia</i></p> <p>Key speakers at this forum on investment opportunities in Malaysia's biotech industry included BiotechCorp COO Dr. Wan Abdul Rahaman bin Wan Yaacob, Frost &amp; Sullivan Global Vice President of Pharmaceuticals/Biotechnology Rhenu Buller, and Frost &amp; Sullivan Senior Consultant Asia Pacific Louis Payet.</p>
<b>September 17</b>	<p><b>BiotechCorp and UEM Land Holdings Berhad Partnership to Develop Bio-XCell Ecosystem in Iskandar Malaysia (Johor) &amp; Holista-Colltech Collaboration with USM and UTM</b>  <i>Kuala Lumpur Convention Centre, Malaysia</i></p> <p>The announcement of Bio-XCell in Iskandar Malaysia was officiated by Deputy Prime Minister YAB Tan Sri Muhyiddin bin Hj. Mohd Yassin, MOSTI Deputy Minister Tuan Hj. Fadillah bin Yusof, BiotechCorp Chairman Tan Sri Datuk Dr. Ahmad Zaharudin Idrus, BiotechCorp CEO Dato' Iskandar Mizal Mahmood, Holista Biotech Sdn Bhd CEO Dato' Rajen M. and UEM Land Holdings Berhad CEO Dato' Wan Abdullah Wan Ibrahim.</p>

<b>Date</b>	<b>Event</b>
October 2	<p><b>BIOCAMP-BioJunior SARAWAK 2009 in conjunction with BioIndustry Dialogue &amp; Exhibition 2009 ('Jom Heboh')</b>  <i>Four Points, Kuching, Sarawak, Malaysia</i></p> <p>Activities at this outreach programme for juniors included biotech games, quizzes and other interactive sessions to introduce biotech products and services to the 'rakyat'. The aim was to stimulate the participants' interest in food biotechnology, microbiology as well as human genetics.</p>
October 13	<p><b>Visit from the Department of Economic Planning of the Brunei Prime Minister's Office</b>  <i>Menara Atlan, Kuala Lumpur, Malaysia</i></p> <p>Two presentations were conducted by BiotechCorp, on BiotechCorp (the organisation) and Bio-XCell, as part of its efforts to share best practices in developing the biotech industry. The visitors from Brunei included the Permanent Secretary of the Brunei Prime Minister's Office Tuan Hj. Murni bin Hj. Mohamed, Senior Economic Officers Normah bt. Awg. Ali and Hairol Nizam b. Hj. Abd. Hamid, and Economic Officer Daisy Han.</p>
October 15	<p><b>BioMalaysia 2009 Countdown Press Conference</b>  <i>Kuala Lumpur Convention Centre, Malaysia</i></p> <p>The press conference to launch BioMalaysia 2009 was officiated by BiotechCorp CEO Dato' Iskandar Mizal Mahmood, PROTEMP Exhibitions Sdn Bhd Project Director Denise Ang, Sime Darby Plantation Sdn Bhd Head of R&amp;D Quantum Leap Dr. K. Harikrishna, Biotropics (M) Berhad Director of Marketing &amp; Customer Support Siti Nooruhani Ibrahim, Holista Colltech Ltd COO Alan Tan, TH Properties Sdn Bhd Project Director Zulkifli A. Hassan, and MGRC Managing Director Karim Hercus.</p>
October 24-25	<p><b>BioIndustry Dialogue &amp; Exhibition ('Jom Heboh')</b>  <i>Stadium Batu Kawan, Penang, Malaysia</i></p> <p>The variety of activities at this outreach programme was aimed at enhancing awareness of biotechnology and in encouraging the use of biotech applications in the daily life of the 'rakyat'. There was a good turn out of visitors: 11,206 in two days.</p>
October 30	<p><b>BIOCAMP SABAH 2009 in conjunction with BioIndustry Dialogue &amp; Exhibition 2009 ('Jom Heboh')</b>  <i>Le Meridien Kota Kinabalu, Malaysia</i></p> <p>Activities at this outreach programme included a biotech quiz and other interactive sessions to introduce the participants to food biotechnology, microbiology as well as human genetics.</p>
November 16	<p><b>BiolAP Meeting 2009</b>  <i>Kuala Lumpur Convention Centre, Malaysia</i></p> <p>This Biotechnology International Advisory Panel (BiolAP) meeting was chaired by the Prime Minister in view of the objective to ensure the commercialisation of the biotech industry in 2011 and onwards. It was a rare occasion where members of the IAP congregated in Kuala Lumpur as a team to discuss critical issues for Malaysian biotechnology.</p>
November 17-19	<p><b>BioMalaysia 2009 Conference &amp; Exhibition</b>  <i>Kuala Lumpur Convention Centre, Malaysia</i></p> <p>Jointly organised by the MOSTI, BiotechCorp and PROTEMP Exhibitions Sdn Bhd, this was the premier biotech event of the year. It provided a strategic platform for the sharing and exchange of fresh ideas, practical solutions and effective collaborations among global and Malaysian biotech industry participants. With the theme "Accelerating Commercialisation in Biotechnology" for the year 2009, this was the largest BioMalaysia since its inception in 2005.</p>

# The Year 2009

## Strategy & Planning for a Conducive Environment for the Biotech Industry

### Legal & Regulatory

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**Department** Legal & Regulatory Department

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<b>Areas of Interest</b>	<ol style="list-style-type: none"><li>1. Establish a supportive regulatory framework and environment that takes into consideration the developmental aspirations of the nation and encourages innovation whilst ensuring public safety.</li><li>2. Promote a balanced creation of safeguards to regulate access to local genetic resources, seeking not to hamper genuine initiatives and cooperation between the access provider and access seeker.</li><li>3. Contribute towards the development of a strong regulatory framework for intellectual property rights (IPR).</li><li>4. Contribute towards encouraging the creation and filing of biotech-related patents with a view on commercialisation.</li><li>5. Promote and support initiatives for the attainment of international accreditation and compliance with international standards.</li><li>6. Contribute towards the establishment of a strong and enabling regulatory framework for the enhancement of efficacy in relation to product registration.</li></ol>
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### Key Results

<b>Issue / Activity</b>	<b>Result</b>
<b>BioSafety Framework</b>	The BioSafety Act 2007 recently came into force on 1 December 2009. The coming into force of the Act provides certainty to the biotech industry in that a specific process to handle the release, importation, exportation and contained use of living modified organisms (LMOs) has been put in place. Currently, a set of bio-safety regulations which will support and help operationalise the Act is in its final stage of completion. Towards that end, the Ministry of Natural Resources and Environment (MONRE), to its credit, has shown that it is progressive and open in its approach by providing an avenue for engagement and consultation between the relevant ministries, agencies and industry players towards the formulation of the bio-safety regulations currently still in draft form.

<b>Issue / Activity</b>	<b>Result</b>
	<p>In furthering the objectives of the National Biotechnology Policy, Malaysia needs to ensure that bio-safety policy and laws not only protect biodiversity, but also encourage the development of biotechnology in the country. This balancing act remains the biggest challenge in a scenario where there are multiple stakeholders. The most effective way to ensure a win-win situation for the country would be the creation of channels for discourse and consultation between regulators and the industry so that future laws, regulations and rules impacting the development of biotechnology in the country can be formulated in an inclusive and constructive manner.</p>
<p><b>Access &amp; Benefit Sharing (ABS)/ Biodiversity</b></p>	<p>While there are currently no domestic ABS laws to date, in view of the developments on the international front (e.g. the progress made in the ABS WG8 in Montreal, in November 2009) and the importance of this subject to Malaysia, it is anticipated that the national level laws on ABS will also be in the pipeline in the near future.</p> <p>Upon its promulgation, a formal domestic ABS framework should provide a balanced means to ensure that we will be able to combat bio-piracy, besides providing an effective means for Malaysia to capitalise upon its rich and diverse genetic resources in line with the country's objectives to promote biotechnology development as an engine for growth.</p>
<p><b>Training Regulators</b></p>	<p>In addition to creating awareness among industry players and the general public, BiotechCorp funded the training of key regulators to create awareness and enhance their skills in various important areas. In 2009, BiotechCorp had continued:</p> <ul style="list-style-type: none"> <li>• to collaborate with the Intellectual Property Corporation of Malaysia (MyIPO) to provide IP Law training for the judiciary, officers of the Attorney General's Chambers and enforcement officers to support the establishment of the IP Courts in Malaysia;</li> <li>• to collaborate with the National Pharmaceutical Control Bureau (NPCB) of the Ministry of Health and the Department of Standards Malaysia (STANDARDS MALAYSIA) of the Ministry of Science, Technology and Innovation (MOSTI) to provide the Organisation for Economic Cooperation and Development's (OECD) Principles of Good Laboratory Practices (GLP) training for their respective GLP inspectors worldwide, to ensure quality inspections and smooth completion of OECD GLP framework for Malaysia;</li> <li>• to collaborate with the NPCB to provide training for key regulators in the review of drug development in clinical trials, in the GLP Compliance Programme (GCP) inspection and in drug regulatory authorities' efforts to harmonise regulation and improve the safety, efficacy and quality of medicines. Participation in the proposed training not only enhances the capacity and competency of NPCB's personnel but also offers a chance for NPCB to build their network with other regulatory authorities worldwide; and</li> <li>• to collaborate with MONRE and MOSTI to conduct workshops on bio-safety and ABS besides providing exposure for key regulators in these areas.</li> </ul>

Issue / Activity	Result
<b>Intellectual Property (IP) Framework</b>	<p>It is recognised that a comprehensive and effective IP regulatory framework is required to encourage scientists to file biotech-related patents, and for the Innovation and Commercialisation Centre of research institutions and universities to engage in more commercialisation activities, so as to ensure that innovations from our local researchers enter the market. In June 2009, to intensify commercialisation efforts, the Government launched the “Intellectual Property Commercialisation Policy for Research and Development (R&amp;D) Projects Funded by the Government of Malaysia”. The commercialisation of IP in Malaysia by R&amp;D fund recipients is still lagging in which the value of products from R&amp;D carried out is only 3.4 per cent of the total fund allocated.</p> <p>With the launch of the policy, it is anticipated that more innovations can be created, patented and commercialised; especially in the biotech sector so as to fulfil the Government’s aspiration for Malaysia to become a high-income economy.</p> <p>In June 2009, eight countries from ASEAN (Malaysia, Cambodia, Indonesia, Laos, Philippines, Singapore, Thailand and Vietnam) embarked on a regional patent cooperation programme called the ASEAN Patent Examination Cooperation (ASPEC). The ASPEC should make it easier for entrepreneurs, particularly small and medium-sized enterprises and inventors, to obtain patents for their innovations and improve the waiting time for the processing of patent applications around the region.</p>
<b>Pharma Regulation</b>	<p>Pharmaceuticals are regulated by the Drug Control Authority (DCA) in Malaysia, under the Control of Drugs and Cosmetics Regulations 1984 which empowers the DCA to implement the registration of:</p> <ul style="list-style-type: none"> <li>• Scheduled poisons</li> <li>• Non-scheduled poisons</li> <li>• Traditional medicines</li> <li>• Cosmetics (<i>Registration of cosmetics was replaced by the Notification Procedure with effect from 1 January 2008.</i>)</li> </ul> <p>A Technical Working Group (TWG) for biotech products was established to prepare relevant guidelines for biosimilar products and the TWG successfully finalised the Guidance Document and Guidelines for Registration of Biosimilars in Malaysia, which was then published on 4 August 2008. In 2009, in support of this publication, BiotechCorp organised a seminar named “A Practical Approach to Fill and Finish of Biopharmaceuticals” to lead the way for subsequent forays into Biosimilars by the industry.</p> <p>As a member of ASEAN, Malaysia continues to play an active role in harmonisation efforts through the ASEAN Consultative Committee for Standards and Quality’s (ACCSQ) Pharmaceutical Product Working Group (PPWG), the Traditional Medicines and Health Supplements Product Working Group (TMHS PWG) as well as the Medical Devices Product Working Group (MDPWG). In 2009, BiotechCorp also supported the Traditional and Complementary Medicine Division (T&amp;CM) of the Ministry of Health in organising the 7th International Traditional &amp; Complementary Medicine Conference (INTRACOM) and Exhibition 2009.</p>

Issue / Activity	Result
<b>International Accreditation</b>	<p>GLP – Malaysia was made a provisional adherent to the Organisation Accreditation for Economic Co-operation and Development (OECD) Mutual Acceptance of Data (MAD) system in 2008.</p> <p>The year 2009 saw the continued implementation of the OECD Good Laboratory Practice (GLP) framework, which is applicable to non-clinical health and environment safety studies. The Government of Malaysia had designated the National Pharmaceutical Control Bureau (NCPB) and Department of Standards Malaysia (STANDARDS MALAYSIA) as the Malaysian Compliance Monitoring Authorities (CMAs).</p> <p>NPCB is the CMA for the non-clinical safety testing of test items contained in pharmaceutical products, cosmetics, veterinary drugs and food additives and STANDARDS MALAYSIA is the CMA for the non-clinical safety testing of test items contained in industrial chemicals, pesticides, feed additives and biotechnology (non-pharmaceuticals).</p> <p>The GLP Compliance Programme which is intended to verify whether test facilities comply to the OECD Principles of GLP and Compliance Monitoring have been initiated by the CMAs and BiotechCorp is currently working with the CMAs to assist in the development of test facilities through the provision of funding for numerous capacity building initiatives. This includes the identification of potential test facilities for GLP compliance.</p> <p>Malaysia intends to achieve full adherent status to the OECD MAD system by 2012.</p> <p>Good Clinical Practice (GCP) and Good Manufacturing Practices (GMP) in Malaysia are fairly stable and mature, given the strong stewardship provided by the Ministry of Health.</p> <p><b>GCP</b> – The Ministry of Health continues to ensure that each trial proposal goes through a rigorous review and the trial itself is strictly monitored and regularly audited. The Clinical Research and Compliance Section of NPCB plays an important role in issuing the Clinical Trial Import Licence (CTIL) and ensuring compliance with GCP. The obvious benefit of GCP is acknowledged by Malaysia’s DCA as Malaysia becomes a more active participant in international drug research.</p> <p>In regulating clinical trials involving human subjects (to ensure that the data and reported results are credible and accurate; and that the rights, integrity and confidentiality of the trial subjects are protected), guidelines applicable in Malaysia include:</p> <ul style="list-style-type: none"> <li>• <i>International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH) - Guideline for Good Clinical Practice;</i></li> <li>• <i>Malaysian GCP Guideline;</i></li> <li>• <i>Guidelines for Ethical Review of Clinical Research or Research Involving Human Subjects; and</i></li> <li>• <i>Guidelines for Application of Clinical Trial Import Licence and Clinical Trial Exemption in Malaysia.</i></li> </ul> <p><b>GMP</b> – A company applying to the NPCB for the registration of a medicinal product in Malaysia must provide acceptable evidence to show that the manufacturer of the product follows an internationally accepted standard of GMP.</p>

Issue / Activity	Result
	<p>The Control of Drugs and Cosmetics Regulations 1984 requires that the standard of manufacture and quality control of medicinal products manufactured outside Malaysia be taken into consideration before the products are registered with the Drug Control Authority. Manufacturers located within Malaysia are subjected to licensing and periodic GMP audits by NPCB. Foreign manufacturers of medicinal products exporting their products to Malaysia are also subjected to GMP conformity assessments whereby the manufacturers are required to periodically provide acceptable evidence that their premises conform to current GMP requirements.</p> <p>Malaysia became the 26th member of the Pharmaceutical Inspection Cooperation Scheme (PIC/S) on 1st January 2002. Hence, the current PIC/S Guide to GMP for Medicinal Products and its Annexes have been adopted as the standard used by NPCB to assess the GMP conformity of manufacturers.</p> <p>NPCB had also published a Guideline on Good Manufacturing Practice for Traditional Medicines and Health Supplement in 2008. This Guideline, being the improved revision to the Malaysian Guideline on GMP for Traditional Medicine is intended to provide guidance to manufacturers in complying with the stringent manufacturing and health requirements standards internationally accepted for the production of TMHS products around the world.</p>

## Legal & Regulatory: Targets for next year

### Over the next year, BiotechCorp will:

- Train patent examiners, to increase their efficiency and competencies in biotech areas.
- Assist the Malaysian Compliance Monitoring Authorities in completing the establishment of the OECD GLP framework, including the identification of potential test facilities for GLP compliance.
- Provide training for clinical trial investigators and other clinical research personnel to increase their efficiency and competencies in clinical research areas.
- Train key regulators of the NPCB to enhance product registration, especially on the New Chemical Entity (NCE), biotech products and traditional medicines and health supplements with higher claims.
- Conduct conferences/workshops/seminars and dialogues with the authorities, to raise awareness and to create understanding of biopharmaceutical product registration so that industry players can commercialise their products in local and international markets.
- Remain involved in TWGs in the effort to update current regulations or provide input on new regulations to be formed (e.g. The Advanced Therapy on Medicinal Products (ATMP)).
- Create a guidebook on doing business in the US and Europe.
- Continue advocacy work in the area of bio-safety regulations and ABS laws.

No.	2010 Initiatives	Target (Deliverables)
1	Graduate Attachment Programme (Clinical Research Centre (CRC))	20 graduates
2	Patent Examiner Training & Mentoring Programme	42 patent examiners
3	Contract Patent Examiners (MyIPO)	10 patent examiners
4	Biotechnology IP Commercialisation Manual	Completion
5	Pharma Guidebook – Regulatory requirements for doing business in the US & EU	Completion
6	Workshops and Conferences	10 impactful workshops and seminars with strictly selected participants, relevant content and a feedback mechanism.
7	Regulator Training	17 regulators from MOH, MOSTI, MONRE, MOA, MDTCC, Judiciary, AG's Chambers.
8	BiotechCorp-CRC Workshops for Clinical Trial Investigators	150 Clinical Trial Investigators trained and contributing towards clinical trial activities in Malaysia.

### More details for BioInvestors

The Government of Malaysia, in its initiative to drive the nation towards a high-income economy through innovation, creativity and high-value-added activities has granted tax incentives to small and medium-sized enterprises and industries for registration of patents and trade marks during the fiscal year budget for 2010. The tax relief is effective from 1 January 2010 until the year of assessment 2014.

## Financial Infrastructure

**Department** Financial Infrastructure Department

**Areas of Interest**

1. Develop and implement a comprehensive mechanism of funding – focussing on priority areas from research to market.
2. Accelerate industry growth through strategic partnerships with the domestic and global private sectors including Government-linked companies and specific programmes.
3. Ensure a mechanism for funding with the venture capital industry, the banking sector and the private sector.

## Key Results

Issue / Activity	Result
<b>Promote and Engage with Government and relevant stakeholders to develop funding sources</b>	BiotechCorp continued to promote to and engage with Government and other relevant stakeholders to develop and implement a comprehensive mechanism of funding for the biotech industry. In 2009, Government-related venture capital companies continued to invest in the biotech industry. In addition, private funding was also attained through the involvement of the private sector in the establishment of Bio-XCell in Nusajaya, Iskandar Malaysia in Johor.
<b>Engagement with Investor groups on Biotech deal-flows and matching business partners for BioNexus Status companies</b>	<p>Throughout 2009, the department engaged with several investor groups including institutional investors, financial institutions as well as public and private venture capital companies. In relation to this, BiotechCorp had matched these investor groups with a number of local and foreign biotech or life sciences companies. As a result, investment in the biotech industry in Malaysia continues to increase as evidenced by the increase in the investment in BioNexus Status companies.</p> <p>Officers of the department participated in BioInvestor Forum 2009 (in Sydney and Hong Kong) and engagement with Bahraini parties. These events were aimed specifically at reaching out to the financial and investment communities in the Asia Pacific region. The objective of the forum was to increase awareness and understanding of the Malaysian biotech industry and to enhance the ability to evaluate biotech companies or projects among the regional financial and investment community.</p>
<b>Enhancing Knowledge</b>	BiotechCorp organised the Biotechnology Investment Opportunities Conference in August 2009. This was targeted at the financial and investment community. The purpose of the conference was to create awareness on the business and technical aspects of biotechnology; providing an understanding of the local and global biotech industries and highlighting the viability of participation in the biotech industry.

## Financial Infrastructure: Targets for next year

### Over the next year, BiotechCorp will:

- Continue to engage investor groups on Biotech deal-flows and match business partners for BioNexus Status companies.
- Promote, educate and inform the financial and investment community about the biotech industry's potential, development and performance.
- Conduct performance benchmarks for BioNexus Status companies to promote and enhance access to funding.
- Assist relevant government agencies to establish a Central Monitoring Function for public funding in biotechnology.

# Human Capital Development

**Department** Human Capital Development Department

**Areas of Interest**

1. Develop skilled, knowledgeable and competent human capital to ensure an adequate supply for the biotech ecosystem.
2. Develop capabilities across the biotechnology value chain – from research to commercialisation, business development, product development, production and marketing.

## Key Results

Issue / Activity	Result
<b>Development Needs Analysis</b>	The analysis was conducted as an exercise to identify the skills required and knowledge gaps to formulate plans for human capital development.
<b>Biotechnology Manpower and Competency Requirements Study</b>	The Biotechnology Competency Development Programme was designed to address specific requirements identified in the Development Needs Analysis. It was conducted and published in the Human Capital Report. To increase the number of researchers, scientists and engineers among others, special schemes, programmes, benefits and incentives have been developed within a competitive working environment. BiotechCorp will need to develop further the Biotechnology Industry Competency Framework Standards.
<b>BioCareer Fair</b>	A BioGrads & BioJunior Career Camp, eight career talks and one BioCareer Fair were conducted in 2009; and a minimum of the same number will continue to be organised annually. Jobs are created, but the opportunities need to be broadcasted to the candidates out there.
<b>Biotechnology Entrepreneur Programme</b>	Entrepreneur Development Workshops were conducted to provide focussed bio-entrepreneurship development support through industry workshops and roundtable
<b>Mentoring Programme</b>	The Mentoring Programme was implemented to establish a specialised and one-on-one targeted development programme for bio-entrepreneurs and BioNexus Status companies. Among the focussed initiatives are the Executive in Residence Programme and the QB3 Global Bioentrepreneurship Programme.
<b>Biotechnology Entrepreneur Conference</b>	Conferences have been held to provide basic training, inspiration and networking opportunities for aspiring bio-entrepreneurs and other industry stakeholders. The topics presented include funding in the biotech industry, entrepreneurship and converting science to business.
<b>Biotechnology Entrepreneurship Special Training (BeST) Programme</b>	This programme is geared towards preparing fresh graduates from various disciplines to participate in the biotech industry. In 2009, 340 graduates were trained at several training centres located in the various economic corridors. 64 trainees have graduated from the programme and are currently employed in biotech and related companies. 276 trainees started their training at the training centres; and they will be the next wave of BeST trainees to enter the biotech industry in 2010.

## Human Capital Development: Targets for next year

### Over the next year, BiotechCorp will:

- Implement the Biotechnology Competency Development Programme.
- Organise BioCareer Fairs, road shows and 'meet the industry' sessions.
- Implement the BeST Programme.
- Organise biotech entrepreneurship pre-commercialisation preparedness programme for aspiring entrepreneurs and researchers.

#### More details for BioInvestors

'Malaysian Biotechnology: Human Capital Development Report 2009', a 101-page report by Frost & Sullivan, was published in 2009 and is available for download at [www.biotechcorp.com.my](http://www.biotechcorp.com.my).

## Technology Infrastructure

**Department** Technology Infrastructure Department

**Areas of Interest**

1. Mechanisms for the commercialisation of products and services arising from biotechnology research & development.
2. Access to shared laboratories and other related facilities (BioNexus Bill of Guarantees No. 8).

### Key Results

Issue / Activity	Result
<b>Formation of Triple Helix's database</b>	This was completed on 17 September 2009. There are currently 120 commercialisable life sciences projects or products as well as 90 life sciences services, equipment or facilities in the system. <i>Triple Helix is BiotechCorp's online partnering portal on commercialisable life sciences projects or products and research facilities, equipment and services.</i>
<b>Technology Commercialisation Network (TCN-Bio)</b>	This was successfully initiated on 8 December 2009 at the First Meeting of the Technology Commercialisation Network (TCN-Bio). A total of 89 participants attended the First Meeting, and 152 participants from 82 organisations confirmed their interest to join the Network. The 82 organisations consist of biotechnology companies (35%); institutions of higher learning and research institutes (25%); the financial sector (12%); Government-linked companies or agencies (10%); technology parks (6%); other organisations (6%); the legal fraternity (4%) and industry associations (2%).
<b>BioNexus Partners (BNP) Programme</b>	Forty one BNP laboratories and units in 14 public universities and research institutes offering high-end research and testing services/equipment/facilities to the biotech-related life sciences industry. Under the BNP programme, BiotechCorp assists laboratories and units within these organisations, which are particularly relevant to the biotech-related life sciences industry, by: (a) maintaining facilities and equipment used by the BNP laboratory and unit for providing services to BioNexus Status companies and other relevant commercial entities; and (b) facilitating R&D&C within the biotechnology sector in Malaysia.

## Technology Infrastructure: Targets for next year

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### Over the next year, BiotechCorp will:

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- Identify and select eligible commercialisable biotechnology innovations generated from Malaysian institutions of higher learning, research institutes as well as emerging companies and to mentor them via a commercialisation assistance programme to increase their market readiness and enhance their commercialisation opportunities.
  - Develop an efficient mechanism to track the progress of Technology Transfer Offices (Commercialisation Units in public universities and research institutes) that have relevant biotechnology components in the country.
  - Develop an efficient mechanism to track the progress and/or impact of biotech-related Science Parks and Incubators in the country.
  - Target a 20% increase in the rate of capacity utilisation of BNP services, equipment and facilities from 2009.
  - Target a 20% increase in collaborations or commercialisation arising from the BNP programme in comparison to 2009.
  - Populate up to 160 commercialisable life sciences projects or products and 100 services, equipment or facilities that can be utilised by industry into the Triple Helix database.
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## Resource Centre

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**Department** Resource Centre Department

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**Areas of Interest**

1. Information resources and information services that facilitate networking and collaboration between stakeholders.
2. The provision of one-stop-centre services for biotechnology – a conducive environment for knowledge sharing and dissemination.

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### Key Results

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Issue / Activity	Result
<b>Physical Resource Centre and its contents</b>	<p>The BiotechCorp Resource Centre (BRC) was established to create a supportive information network for BioNexus Status companies and the biotech industry of Malaysia as a whole. The information management system in the BRC is specially designed for the development of the biotech industry. The initiative for effective information management by the BRC is one of the strategies to assist local biotech industry players to increase their competitiveness and better position their businesses.</p> <p>BRC has been committed to the provision of information and research resources for biotech development in Malaysia and worldwide, and maintains a wide variety of information resources which includes books, reports, loose leaflets, journals and magazines (printed and electronic), audio visual materials and online databases. It houses over 3,500 monographs that can be broadly classified into the following categories:</p> <ul style="list-style-type: none"><li>• Biotechnology and life sciences (75%)</li><li>• Business and management (10%)</li><li>• Law and regulation resources (5%)</li><li>• Accounting and finance (5%)</li><li>• Other supporting areas (5%)</li></ul>

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Issue / Activity	Result
<b>Industry Awareness Campaign</b>	BRC organised Biotech Week at the National Library of Malaysia (16-28 March 2009) and the Kuala Lumpur Library (22-27 June 2009) to raise awareness and generate public interest in the biotech industry. Activities targeted at different groups of participants included a biotech exhibition, seminars, a science demo, bio quiz as well as colouring, drawing and poster competitions. These were organised to incorporate interesting and fun elements to the programme.

### **Resource Centre: Targets for next year**

#### **Over the next year, BiotechCorp will:**

- BRC will focus on building electronic resources (e-resources) via a digital library while maintaining and expanding its print collection. The establishment of a digital library – using ICT as an enabler – will allow faster delivery of information (delivery on demand). This source of digital information is in line with Malaysia’s quest to become a knowledge-based society. It will also promote the economical and efficient delivery of a comprehensive collection of information and knowledge to all levels of the Malaysian society.

# Triumphs in Industry Development

## Agricultural Biotechnology

**Department** Agriculture Division

**Areas of Interest**

1. The enhancement of the economic value of Malaysia's diverse resources through biotechnology, innovation and entrepreneurship:
  - Adding value to food crops
2. The framework for developing biotechnology based on the National Policy on Biological Diversity (1998) and the Third National Agricultural Policy (NAP3, 1998-2010):
  - Marine/Aquaculture
  - Livestock
  - Natural Products

### Key Results

Issue / Activity	Result
<b>Seed Production</b>	Plans were implemented to revitalise the seed production industry to transform Malaysia into a molecular seed breeding hub for South East Asia. Biotech tools have been used to strengthen the quality of planting material production, and initiatives carried out to help escalate the seed industry. Local BioNexus Status companies are being groomed to employ biotech processes in seed production, and seed companies have been linked to the Biotechnology Centre at MARDI to adopt biotechnology tools for seed production.
<b>Natural Products (Discovery and Commercialisation)</b>	BiotechCorp has facilitated the development of flagship companies with core competencies in extraction, standardisation, profiling and pre-clinical trials among others; with the aim of creating an evidence-based platform which helps in the development and creation of higher value natural products. The facilitation of studies and commercialisation of products through joint effort between local companies and research institutions and universities has improved product branding and contributed to regional and global market developments. Promotion activities have been done through participation in local and international exhibitions.
<b>Tissue culture / Micro-propagation</b>	Active promotion and marketing at national and international levels have been initiated for industrial crops as well as cash crops, such as oil palm, orchids, pineapples and bananas. The aim is to bring in more crops & products of economic importance (e.g. forestry, essential oils, herbals) to develop the industry. The commercialisation of new varieties or species of economic importance through tissue culture or micro-propagation techniques has begun and the application of these techniques have been used already in the agriculture industry. Specific examples include the mass production of MD2 pineapples, orchids and other floriculture plants, forestry tree species and aquatic ornamentals plants.
<b>Bio-Fertilizer</b>	BiotechCorp has worked on encouraging the agriculture industry to embark on the production of bio-fertilizers within Malaysia and in the ASEAN region. Bio-fertilizer sector contribute the largest revenue among the BioNexus Status companies. Active promotion is focussed on the development of bio-control and soil enhancer activities to further boost the crop nutrition/enhancement sector in Malaysia.

Issue / Activity	Result
<b>Livestock</b>	In the past, the key focus was to ensure the growth and sustainability of nucleus farms to supply superior genetic materials and services to livestock farmers, thereby producing high quality animals. Recent initiatives have been focussed on ensuring a structured rate of growth for multiplier farms for goats and cattle, to support the continued growth of established nucleus farms. The livestock sector strives to reduce the need for imports by increasing the availability of quality breeds for meat and milk, and by reducing the chances of in-breeding depression.
<b>Marine / Aquaculture</b>	<p>Researchers continued to explore new growth areas in marine and freshwater aquaculture, and new application of biotech tools to enhance productivity in production. There is still work to be done in assessing the impact of biotech processes in aqua and marine culture before their effectiveness in achieving the production target of 662,000 MT of aquaculture products in 2010 can be determined. Biotech processes were used to rehabilitate abundant aquaculture ponds in the country but more work need to be done in order to maximise capitalisation of existing infrastructure for this project.</p> <p>Three main areas of this sector, which complement each other, have been identified: aquaculture feed development, aquaculture health or diagnostics applications, and the development of brood stock breeding technology. The success of these areas will greatly influence the subsequent success of grow-out or multiplier farms in Malaysia, which mainly comprise of shrimp/prawn aquaculture, fish aquaculture and oyster/mussel/crab aquaculture.</p>
<b>Transgenic Crops</b>	International collaborations were initiated and developments in genetically modified organisms (GMOs).
<b>Bio-Pesticide</b>	BiotechCorp has been assessing the development of production technologies to enable the establishment of production facilities to cater for the needs of specific industries. The scope of this work is to be extended in 2010.

### 36 Agricultural Biotechnology Projects Realised in 2009

No.	Company	Origin	Activity
1	All Cosmos Industries Sdn Bhd	Malaysia (DDI)	Research, development and production of bio-chemical fertilizers and bio-organic fertilizers tailor-formulated for oil palm, vegetables, fruit, flowers and rice.
2	Alternative Agricultural Practices Sdn Bhd	Taiwan (FDI)	Manufacture and marketing of soil enrichment products, and plant nutrition and plant protection products termed as the Micro-Aid Activator (MAA) and targeted for use by aquaculture farms, vegetable farms, fruit orchards, paddy fields, etc. The MAA is produced from the application of microorganisms through a proprietary fermentation process.
3	Aning Biotech Sdn Bhd	Malaysia (DDI)	Processing and production of various health and food supplements; including tablets, capsules, liquid, emulsion, cultivation, R&D, fermentation and extraction of <i>Monascus purpureus</i> (Red Yeast).
4	Aning Biotech Corporation Sdn Bhd / Exotic Naturals, India	Malaysia (DDI)	Commercialisation of two standardised extracts of indigenous herbs: <i>Andrographis paniculata</i> and <i>Momordica charantia</i> . The standards were developed and licensed by Exotics Naturals, a company based in Mumbai, India.

No.	Company	Origin	Activity
5	Aning Biotech Corporation Sdn Bhd / Vedic Life Sciences, India	Malaysia (DDI)	A collaboration agreement with a Clinical Research Organisation (CRO) company in Mumbai, India to conduct pre-clinical trials.
6	Aning Resources Sdn Bhd	Malaysia (DDI)	Commercialisation of research conducted by MARDI on the production of Red Fermented Rice using the micro-organism <i>Monascus purpureus</i> which was found to contain the natural analogs of the cholesterol reducing compound Lovastatin.
7	ar-Raudhah Biotech Farm Sdn Bhd	Malaysia (DDI)	The Nucleus Breeding Farm for Boer goats uses Artificial Insemination and Embryo Transfer techniques in its breeding programme. An onsite laboratory at the farm carries out such activities. The application of Embryo Transfer techniques on two of its goats has resulted in the successful delivery of kids.
8	Asma Agro Sdn Bhd	Malaysia (DDI)	Production of MD2 pineapple and Cavendish banana planting materials using plant tissue culture technology. The company plans to use DNA fingerprinting technology for quality control and variety protection processes.
9	BioAlpha R&D Sdn Bhd	Malaysia (DDI)	Production of Cordyceps extracts using a fermentation process. This company operates in Semenyih, Selangor, under a licensing agreement from TCM Biotech of Taiwan.
10	Biolina Corporation Sdn Bhd	Malaysia (DDI)	Cultivation of blue-green algae and the extraction of Poly Unsaturated Fatty Acids (PUFA) from the blue-green algae using technology licensed from Dongtai City Top BioEngineering Co., Ltd of China.
11	Biolina Corporation Sdn Bhd / Dongtai City Top BioEngineering, China	Malaysia (DDI)	A spirulina micro-algae farm in the state of Perak, in collaboration with Dongtai City Top BioEngineering Co., Ltd which is based in Dongtai, Jiangsu Province in China.
12	Bionic Life Sciences Sdn Bhd	Malaysia (DDI)	Production of Halal collagen in Malaysia, using licensed technology on marine collagen production from Al-Amin Shanghai Biotech Co. (devoted to producing Halal biotech products such as gelatine, chondroitin, renin and trypsin from bovine sources) in Shanghai, China. The production facility is located in Kota Damansara, Selangor.
13	Bionic Life Sciences Sdn Bhd / Gao Yuan Biotech, China	Malaysia (DDI)	A partnership for the new platform technology in tissue bio-engineering which focuses on the use of collagen for bio-medical applications from Gao Yuan Biotech of China (a spin-off biotech company of the Northwest University for Ethnic Nationalities in Lanzhou, China).
14	Biotech Elite Research and Innovations Sdn Bhd	Malaysia (DDI)	Extraction of solanesol and gingerol from tobacco plants and ginger plants using supercritical extraction technology.
15	Biotropics Malaysia Berhad	Malaysia (DDI)	Research, development, extraction, production and commercialisation of identified biological active compounds from herbs and plants for the formulation of herbal-based health supplement products.
16	CK Agrifeed Sdn Bhd	Malaysia (DDI)	Research, development, production and commercialisation of microbial-based pro-biotic animal feed using local raw materials.
17	Elite Biotech Sdn Bhd	Malaysia (DDI)	This local entity for Fuyo Biotech Business Co. Ltd (Taiwan) manufactures and markets enzyme health supplement products which mainly consist of bromelain and papain obtained through fermentation processes of vegetables and fruit.
18	Furley BioExtracts Sdn Bhd	Malaysia (DDI)	Production of anti-oxidant natural extracts for the functional food and health supplement markets. A licensing agreement from FRIM allows commercialisation of research on several herbal extracts found to be high in anti-oxidants (e.g. mangosteen, <i>kadok</i> and <i>pegaga</i> ).

No.	Company	Origin	Activity
19	Green World Genetics Sdn Bhd	Malaysia (DDI)	The first seed production company in Malaysia to employ biotech processes such as isozyme techniques as part of the seed selection process. The company will embark on the use of Marker Assisted Selection (MAS) technology acquired by BiotechCorp. It currently works with MARDI on marker discovery and validation for watermelons, and will carry out the watermelon breeding process from seed germination to the production of hybrid seeds.
20	Green World Genetics Sdn Bhd / Syngenta Crop Protection AG  Product Licence Agreement	Malaysia (DDI)	Green World Genetics grants Syngenta: (a) a worldwide non-exclusive licence to research, develop Parental Lines; and (b) the right to produce commercial seeds using the parent lines, and to promote, market and commercialise the commercial seeds of the variety using the parental lines within the territory.
21	GT Bioscience Sdn Bhd	Malaysia (DDI)	Commercialisation of the research by Universiti Malaysia Terengganu (UMT) on the standardisation of the extracts of <i>Chromolaena odorata</i> (pokok kapal terbang) and its application in wound healing.
22	Handalas Sdn Bhd	Malaysia (DDI)	The Jamnapari nucleus breeding farm in Sarawak uses biotech-aided reproduction tools, such as artificial insemination and cryopreservation of semen to obtain genetic gain in its breeding population. The project is under the purview of the Food Production Technology Committee of MOSTI.
23	Handalas-UNIMAS  Memorandum of Agreement	Malaysia (DDI)	The joint research collaboration between Handalas Sdn Bhd and Universiti Malaysia Sarawak focuses on three areas: animal feed production, farm waste management (conversion to bio-gas and organic fertilizer) and genetic material improvement in Jamnapari goats. The company also facilitates a goat multiplier project under the Department of Agriculture Sarawak, with the involvement of 7 other entrepreneurs. The project is under the purview of the Food Production Technology Committee of MOSTI.
24	Invitrotech Sdn Bhd	Malaysia (DDI)	Production of elite planting materials using tissue culture technology, training of young graduates in the field of plant tissue culture and commercialisation of tissue culture planting materials (especially pineapples) in collaboration with Sierra Suria Sdn Bhd. This company (a spin-off of Melaka Biotechnology Corporation) started production in February 2009.
25	Kelbiotech Agro Sdn Bhd (formerly known as Kelantan Biotech Corporation Sdn Bhd)	Malaysia (DDI)	The state of Kelantan's biotech company commercialises Universiti Sains Malaysia's tissue culture technology for 'pisang awak' and ornamental plants production. It has complete lab facilities consisting of a media preparation room, transfer room, cleaning room, and a growth chamber. The company started operation at its newly established lab in June 2009.
26	Kris Biotech Sdn Bhd	Malaysia (DDI)	The business intent of this company is to become an established commercial cattle genetic company, earning revenue from the sale of genetic stock (semen, embryos). It will achieve this through research and commercialisation of advanced breeding techniques (Artificial Insemination and Embryo Transfer).
27	Kris Biotech Sdn Bhd / Animal Breeding Service Ltd  Animal Breeding Services, New Zealand	Malaysia (DDI)	The Memorandum of Understanding specifies the intention to: (i) jointly promote artificial breeding technologies in cattle as a solution for cattle farmers in Malaysia to increase productivity and quality of breed; (ii) collaborate to establish infrastructure and resources required to enable the sale and service of semen and embryos to cattle farmers in Malaysia; and (iii) execute contracts on a project-to-project basis according to the market and parties' requirements in Malaysia for products and services related to reproductive technologies of cattle.

No.	Company	Origin	Activity
28	Madura Industries Sdn Bhd	Malaysia (DDI)	This associate company of GT Bioscience Sdn Bhd has secured a commercialisation and technology transfer contract with MARDI to use enzymatic treatment technology in the production of clarified carbonated fruit juices. It has already secured a new location to establish production facilities.
29	Natural Wellness Biotech Sdn Bhd	Malaysia (DDI)	A Contract Manufacturing Organisation (CMO) involved in the production of various preparations of herbal-based formulations.
30	North Borneo Herbal Biotechnology Sdn Bhd	Malaysia (DDI)	This is a subsidiary of Global Sunshine Biotech Sdn Bhd which is partly owned by Sheng Chang Pharmaceutical Co., Ltd, the biggest pharmaceutical manufacturer in Taiwan with more than 60 years of history in Traditional Chinese Medicine (TCM). This collaboration is aimed at commercialising the production of bulk extracts and various finished formulations of health supplements and functional foods from two best selling Chinese medicine formulas. Sheng Chang is transferring the validated methods of extraction and standardisation of the major herbal ingredients in two TCM formulas to North Borneo. The company is currently under the incubator programme of Unisains Holding Sdn Bhd, a subsidiary of Universiti Sains Malaysia.
31	Nutramax Sdn Bhd / Aning Biotech Sdn Bhd	Malaysia (DDI)	A joint venture/collaboration to share a common platform technology for high throughput screening of natural compounds using micro-nematodes, <i>C.elegans</i> .
32	Nutramedica Laboratories Sdn Bhd / FRIM	Malaysia (DDI)	Development of products based on <i>Chromolaena odorata</i> (daun kapal terbang) for wound healing and exzema; and <i>Trigonella foenum-graecum</i> (halba) and <i>Cinnamomum zeylanicum</i> (kayu manis) for diabetic management.
33	TPM Biotech Sdn Bhd	Malaysia (DDI)	Contract research and manufacturing services for agro-based, nutraceutical and healthcare-related companies.
34	Tropical Bioessence Sdn Bhd	Malaysia (DDI)	This spin-off company of Melaka Biotechnology Corporation uses licensed technology to produce high value essential oil extracts from local indigenous aromatic plants. Commercial production activities began at the incubator site of Melaka Biotech in early 2009 and chemical profiling activities have been initiated.
35	Ultimate Biotech Sdn Bhd	Korea (FDI)	A concoction of micro-organisms from various sources are used to convert palm oil waste to the bio-fertilizer known as BioMac, which has a special functional microbial commodity that promotes plant growth and anti-fungal activities. The company has a licensing agreement with the Korean Research Institute of Biotechnology & Biosciences (KRIBB).
36	Yakin Biolab Sdn Bhd	Malaysia (DDI)	This subsidiary of the Yakin Group produces skin, face and body care products that comply with the GMP requirements of the Ministry of Health. The production plant extracts bioactive compounds of local herbs using Supercritical Fluid Extraction (SFE) technology.

Source: *BiotechCorp*

## Agricultural Biotechnology: Targets for next year

### Over the next year, BiotechCorp will:

- Harness Malaysia's diverse natural resources and encourage companies to identify and standardise valuable components from crops and plants, and formulate functional foods with health benefits.
- Support seed production companies in establishing a comprehensive germ plasm, seed banks and commercialisation operations in the region to attract more foreign direct investment (FDI).
- Formulate activities to encourage and facilitate GMO work to be expanded to field trials while considering ethics in biotechnology.

- Assist multi-national corporations (MNCs) to establish collaboration in setting up their base in Malaysia.
- Continue to nurture local BioNexus Status companies and encourage them to create spin-off companies with global reach.
- Increase capabilities in technology licensing.
- Establish global agricultural biotechnology companies and brands in Malaysia.

### More details for BioInvestors

'Overview: Malaysian Agricultural Biotechnology', a 31-page whitepaper by Frost & Sullivan, was published in 2009 and is available for download at [www.biotechcorp.com.my](http://www.biotechcorp.com.my).

## Healthcare Biotechnology

**Department** Healthcare Division

**Areas of Interest**

1. CRO/CMO
2. Diagnostics
3. High Tech Medical Devices
4. Cell Therapy
5. Biopharmaceuticals
6. Bioinformatics

### Key Results

Issue / Activity	Result
<b>Contract Research Organisation (CRO) / Contract Manufacturing Organisation (CMO)</b>	<p>In line with Malaysia's objective to be the preferred regional location for clinical trials and contract manufacturing, IDD Healthcare has continued to encourage initiatives conducive to the business environment, focussing on those which address gaps and which facilitate development in the healthcare biotech sector.</p> <p>International CROs and CMOs were engaged and exposed to Malaysia's value proposition. The nation's favourable regulatory framework, supportive clinical trial infrastructure, and accessible BioNexus incentives are among the areas which were highlighted and attracted the interest of the CROs and CMOs.</p>
<b>Natural Products</b>	<p>IDD Healthcare continued to encourage the development in natural products research by linking strategic parties. The signing of the MOU between Sarawak Biodiversity Centre and Novartis International AG to explore bioactive compounds from natural resources demonstrated the implementation of a strategic local and international alliance in R&amp;D for natural products.</p>
<b>Asian Market Strategy, Western Market Strategy &amp; MNCs Strategy</b>	<p>Business development activities were intensified through continuous engagement with potential investors from Asian, European and American regions. IDD-Healthcare completed two (2) Long Term Assignments in cities such as San Francisco, San Diego, Los Angeles, Boston and Atlanta in the US, and in London, Amsterdam, Paris, Berlin, Geneva, Brussels, Zurich, Frankfurt and Prague in Europe. Following this, BiotechCorp have formalised strategic partnerships with several leading regional biotechnology associations,</p>

<b>Issue / Activity</b>	<b>Result</b>
	<p>namely Berlin Buch (Germany), Belgium Biotech (Belgium) and Larta Institute (US) in 2009. At the same time, IDD-Healthcare are also in various stages of engagement with healthcare biotechnology companies and biotechnology associations from Korea, India, China, Canada, UK, Germany, USA and Australia.</p>
<b>Technology Acquisition</b>	<p>The Biotechnology Acquisition Programme (BAP) has resulted in the acquisition of a nanotech platform technology from Nanobiotix S.A. of France, and the DotScan™ antibody microarray diagnostic platform technology from Medsaic Pty Ltd of Australia. With the establishment of custodians for these technology platforms, matters relating to technology transfer training, research of healthcare-related applications, awareness programmes and the creation of new intellectual property rights based on the platform technology acquired are properly addressed and the commercialisation of the applications will be accelerated.</p>
<b>Local Companies</b>	<p>Emphasis was placed not only on the development of local companies but also to encourage Malaysian BioNexus Status companies to venture into business. Siogen Sdn Bhd is an example of a BioNexus Status company that has developed its own proprietary technology platform known as Siosomes®. It was awarded the 2009 BioSingapore Asia Pacific Biotechnology Award for 'Most Innovative Biotech Start-up in Asia Pacific'.</p> <p>Efforts were also made to encourage home-grown biotech healthcare companies, through linkages between local and international researchers and relevant commercial partners to initiate business ventures. DNA Research Laboratories Sdn Bhd, for example, is now collaborating with its Taiwanese counterparts on epigenetic technology.</p>
<b>Domestic Direct Investment (DDI)</b>	<p>To increase the growth in DDI, IDD Healthcare has initiated programmes to encourage the involvement of strategic parties in acting as a catalyst for domestic investment. Pharmaniaga Bhd, for example, has established a separate R&amp;D business set up to enhance the parent company's R&amp;D capacity and to seek collaboration with foreign pharmaceutical companies in R&amp;D.</p> <p>Initiating start-up companies is one of the methods used to encourage DDI. Viable home-grown research and innovation efforts are identified, and plans are put in place to move the research and innovation efforts into commercialisation. IDD Healthcare monitors the progress of such and assists in areas such as funding and business opportunities.</p>
<b>Foreign Direct Investment (FDI)</b>	<p>IDD Healthcare embarked on a business development programme with the objective of attracting FDI from America, Europe, South Asia and Asia. Focus was given to international parties within IDD Healthcare's areas of interest and also to those who showed a tendency to invest in Malaysia. As a result, significant foreign CROs and CMOs, and businesses involved in high-end medical and diagnostic devices have started to set their operations in Malaysia.</p> <p>IDD Healthcare has continued to leverage on close relationships with international industry organisations such as Belgian Biotech Industry Organisation, Berlin Buch Bioscience Park, Scottish Development International, Korean Biotechnology Organisation, BIOCOSAN San Diego, Japan BioIndustry Association, and Larta Institute to increase its exposure to international biotech players.</p>

## 29 Healthcare Biotechnology Projects Realised in 2009

No.	Company	Origin	Nature of Business
1	Artisan Pharma (M) Sdn Bhd	USA (FDI)	Bulk manufacturing, fill/finish manufacturing, clinical development and commercial development to support development, marketing, sales and distribution of Recomodulin® in India, Australia/New Zealand and ASEAN countries.
2	Beyoncell Sdn Bhd	Malaysia (DDI)	A Specific Pathogen Free (SPF) animal facility will be established to provide a full range of biotech services for drug discovery and development.
3	Bio Med Research Consulting Ltd, Australia	Australia (FDI)	Bio Med Research Sdn Bhd was established to undertake research, development, production and commercialisation of high value protein extracts from marine source; derived using in-house developed bioprocessing technology.
4	Bioeasy Sdn Bhd	Malaysia (DDI)	Bioinformatics services as well as research, development and commercialisation of marker and molecular diagnostic products. Ongoing R&D collaboration with UiTM.
5	BioPhotonic Healthcare Sdn Bhd	Malaysia (DDI)	Research, development and production of herbal extraction using Layer by Layer (LBL) nanotechnology for enzyme-based diabetic cure extracts. Two of its products (G'Wellness™ and D'Care™) are ready for commercialisation and have been successfully registered with NPCB. It is already marketing its products in Australia.
6	BioStreptz Sdn Bhd	USA (FDI)	Plans to purchase the API from abroad and undertake fill and finish of the product (biopharmaceutical products known as therapeutic proteins) in Malaysia. Ongoing R&D in collaboration with UPM on Chondroitin Sulfate Proteoglycan 4 (CSPG4).
7	Dermazone Europe Ltd	Indonesia (FDI)	Its local entity – Onasen Sciences Sdn Bhd – will be involved in the development and formulation of skin therapeutics and medicated products based on proprietary ozonated palm kernel oil (O3pko) and ozonated olive oil (O3oo).
8	DNA Research Centre Sdn Bhd	Malaysia (DDI)	Development of DNA test assays and manufacture of in vitro molecular diagnostic kits.
9	Evo Biotech	Malaysia (DDI)	Research, development and commercialisation of innovative technology of medical devices for use in interventional Cardiovascular treatment and diagnosis.
10	Fatal Genetix Pte Ltd	Singapore (FDI)	A prenatal diagnostics solution provider – diagnostic testing service laboratories and commercialisation of prenatal testing (out-licensing and/or strategic partnership with health providers in Malaysia).
11	GeneNews Diagnostics Sdn Bhd	Canada (FDI)	Generates biomarker content and genomic information using gene-based tests based on the Sentinel Principle and Discovery Funnel, enabling the development of Sentry tests for a broad range of diseases. At Mount Miriam Cancer Centre in Penang, it conducts continuous R&D and commercialisation of blood-based diagnostics for the detection of colorectal cancer.
12	GN Corporation Co. Ltd / Nichi-In Centre for Regenerative Medicine (NCRM)	Japan & India (FDI)	Its local entity – VisionTec Sdn Bhd – offers services of isolation and expansion of corneal limbal stem cell to treat corneal epithelial disease; and Autologous buccal mucosal cells isolation and expansion for treating bilateral corneal epithelial disease; to ophthalmologists in Malaysia and neighbouring countries.
13	Inno Therapeutics Sdn Bhd	USA (FDI)	Development of proprietary drugs for treatment of cancers.
14	Joint Implants International Sdn Bhd	France (FDI)	Research, development, production and commercialisation of orthopaedic implants, with an initial emphasis on hip (hip prosthesis) and trauma implants.
15	Klinsel Sdn Bhd	Malaysia (DDI)	A full service CRO for Phase II, III and IV clinical trials for local and international pharma and biotech companies.
16	Kriptics Devices	UK & USA (FDI)	A MicroDiagnostics company which develops Micro-Electro-Mechanical Systems (MEMS) and Microfluidic biosensors. Ongoing R&D with USM in the development of BioMEMS / Microfluidics POCs for the local and overseas markets.

No.	Company	Origin	Nature of Business
17	Lambang Wibawa	Malaysia (DDI)	A medical device manufacturing company involved in the design, manufacture and marketing of medical devices related to orthopaedic implants. Three medical implants have already been designed and are ready to be manufactured.
18	Mostdi Innovations Sdn Bhd	Singapore (FDI)	Owner of the IP for the Minimised Osseointegrating Screw Titanium Dental Implant used for bridging gaps. With the completion of the prototype, the company is looking into potential R&D programmes with Malaysian hospitals and dentists, product development, clinical trials, manufacturing and commercialisation.
19	MyCRO Sdn Bhd	Malaysia (DDI)	CRO services to the pharmaceutical and medical devices industry. From the clinical trial centre at HUKM, it offers a comprehensive range of contract research services in bioanalytical laboratory analysis, Phase I and II clinical trials and pre-clinical studies.
20	Neopeutics Sdn Bhd	USA (FDI)	Founded from the Malaysia-QB3 programme as a vehicle to commercialise technology developed from research at UCSF. Key activities revolve around the capabilities of its unique proprietary screening platform (e.g. contract research services, bioinformatics software development and drug-discovery and drug development). Research, development and commercialisation of drug profiling methods for microbial-based absorbents and remediation products for various applications.
21	Novotech Clinical Research (Malaysia) Sdn Bhd	Australia (FDI)	The largest independent CRO in Australia provides services for Phase II-IV clinical trials. Its Malaysian operations will serve as its headquarters and hub for activities in the SEA region.
22	Orthomedic Innovations Sdn Bhd	Malaysia (DDI)	A local CMO for research, development, production and commercialisation of orthopaedic implants and devices.
23	Quantum Pharma	Russia (FDI)	Immuvita Sdn Bhd was established to research, develop and commercialise novel drug candidates in different therapeutic areas. Quantum Pharma will license out two compounds to Immuvita to finalise and sell to pharma companies.
24	Semantic Biosolutions Sdn Bhd	Malaysia (DDI)	This bioinformatics company builds a biosemantic query platform for transnational research.
25	Sengenics Sdn Bhd	Malaysia (DDI)	Design and development of array comparative genomics hybridization (aCGH) microarray products specific to Asian population genomic profiles.
26	Shanghai Fu Yi Bioengineering	China (FDI)	Research, development and manufacture of Water-Soluble CoQH/CoQ10 using biotechnology fermentation methods. The company intends to build a CMO facility for hair care, skin care, health supplements and functional beverages, for worldwide export.
27	Small Bones Innovations Asia Pacific Sdn Bhd	USA (FDI)	An integrated organisation with a complete product portfolio and limited educational programs designed specifically for small bone and joint surgeons. With an equity investment from Khazanah, it has developed a comprehensive orthopaedic development proposal for Malaysia, which covers the manufacture of small orthopaedic implants and other development products, surgeon training as well as the development of Asia-specific products.
28	Veeda Clinical Research (SE Asia) Sdn Bhd	India & UK (FDI)	This full service global CRO, which specialises in the early clinical development of drugs (Phase I-II), is establishing an early clinical development (Phase I and IIa) operations for oncology studies at Ampang Hospital in collaboration with the Ministry of Health Malaysia (via CRC) as a joint venture partner.
29	WaferGen Biosystems (M) Sdn Bhd	Malaysia (DDI)	This subsidiary of WaferGen Biosystems, Inc., USA focuses on the development, manufacture and commercialisation of next generation cell technology platform systems for gene expression, genotyping, stem cell research and cell biology for the life sciences and pharmaceutical industries.

Source: BiotechCorp

## Healthcare Biotechnology: Targets for next year

### Over the next year, BiotechCorp will:

- Nurture local companies (BioNexus Status companies).
- Attract foreign direct investment (FDI) to obtain more funding – establishing a larger and more robust portfolio of interested investors and building up reserves to ensure that projects are not stalled due to funding constraints. The focus will be on Asia-Pacific as efforts in the previous years have created significant penetration (which will continue to be developed) in the US and European regions.
- Court Asian and Western small and medium-sized enterprises (SMEs) and multi-national corporations (MNCs) and consider the establishment of overseas representation for easy/quick access to eastern and western markets.
- Work with the Malaysian Investment Development Authority (MIDA) and international missions to focus on reaching out to other markets such as Russia and South America.
- Build ties with Middle Eastern countries to source for investment funding as well as markets for Halal biotech products from Malaysia.

#### More details for BioInvestors

'Overview: Malaysian Healthcare Biotechnology', a 24-page whitepaper by Frost & Sullivan, was published in 2009 and is available for download at [www.biotechcorp.com.my](http://www.biotechcorp.com.my).

## Industrial Biotechnology

**Department** Industrial Division

**Areas of Interest**

1. New value and growth in Malaysia's Industrial Biotechnology sector.
2. Growth in the bio-manufacturing industry.
3. New bases of operations for major global biotechnology players.

### Key Results

Issue / Activity	Result
<b>White Biotechnology Footprint for Malaysia</b>	IDD Industrial produced 'Malaysia's White Biotechnology Foresight & Roadmap' in 2008. This document, with its specific development plans, is used as a major guideline in the overall planning and implementation of IDD Industrial activities.
<b>Technology Acquisition</b>	BiotechCorp acquired the Supercritical Fluid (SCF) platform technology from FeyeCon Development & Implementation, B.V. (The Netherlands) and Universiti Putra Malaysia was selected as the custodian of the platform technology.
<b>Biocatalysts</b>	Two local biocatalyst companies were awarded BioNexus status. One company had secured technology licensing to commercialise the enzyme.

Issue / Activity	Result
<b>Advanced Bioprocessing Technologies for Fine &amp; Speciality Chemicals and Biomaterials Industries</b>	Efforts were focussed on securing potential foreign direct investment (FDI) for the bulk chemical production facility which requires an investment of about EUR 10-15 million. The objective is to have the facility in place and completed by the third quarter of 2011.
<b>Green Chemistry – Biofuel and Bio-remediation</b>	BiotechCorp secured interest from a international company to set up a bioethanol plant using palm oil biomass as feedstock.
<b>Advanced Bioprocessing Technologies for Biopolymer Industry</b>	Three local companies were awarded BioNexus Status. Commercial production is expected to commence in 2010.
<b>Bio-Generic Manufacturing – CRO / CMO</b>	A local CRO company has entered into an agreement with an established Korean biotech company to acquire a scale-up technology for bioprocessing.
<b>Attract FDIs to use Malaysia as their industrial biotech hub and capitalise on the nation's resources and biodiversity</b>	2009 saw the initiation of continuous technology transfer programmes between international players and local companies, universities and research institutes. Leads were initiated to attract more biotechnology participants in the areas of Biocatalysts and Enzymes, Biofuels, Biopolymers, Fine & Speciality Chemicals and Bioremediation.

## 17 Industrial Biotechnology Projects Realised in 2009

No.	Company	Origin	Nature of Business
1	BioChemie Science Sdn Bhd	Malaysia (DDI)	Production of a paper de-inking enzyme for pulp and paper mill companies (Nibong Tebal Paper Mill).
2	Bio Green Bags Sdn Bhd (BGB)	Malaysia (DDI)	Production of starch-based biodegradable plastic bags.
3	Black Gold Global Sdn Bhd	Malaysia (DDI)	Commercialisation of the CoQ10 enzyme (CoEnzyme Q10 – API) with Halal certification for the global market. This technology was developed in Taiwan by PharmaEssentia Corporation Ltd.
4	Ekstrak Tulen Sdn Bhd / NSE POMAR Sdn Bhd	Malaysia (DDI)	Production of four standardised extracts using Supercritical Fluid Extraction (SFE) at their facility in Bentong, Pahang – Edible Dietary Fiber, Vanilla, Virgin Coconut Oil, and Ginger Oleoresin.

No.	Company	Origin	Nature of Business
5	Innobio Co Ltd. / M21 Environmental Technology Sdn Bhd	Korea (FDI) & Malaysia (DDI)	A technology collaboration partnership agreement to market and set up bioreactor facilities in Malaysia.
6	Jawhara Bioenergie Sdn Bhd	Malaysia (DDI)	Collaboration between Jawhara Bioenergie Sdn Bhd and Core Competencies Sdn Bhd in waste treatment and biogas production.
7	MyEnzyme Sdn Bhd	Malaysia (DDI)	A joint venture agreement with Insect Biotech Co. Ltd of Korea to act as a CMO for microbe cultivation and enzyme production.
8	Neu-Bio Sdn Bhd	Malaysia (DDI)	A bioremediation technology agreement with Nankai University of China in the use of effective microbes for the livestock, poultry and fisheries sectors.
9	Palm Oligo Sdn Bhd	Malaysia (DDI)	A technology agreement with CTC Bio Inc. of Korea to undertake the production of Mannanase for Manno Oligo Saccharides (MOS), a new type of functional sweetener – enzyme for food.
10	Promise Earth (M) Sdn Bhd	Malaysia (DDI)	A technology licensing agreement was signed with N.I. Techno Co. Ltd of Japan for the manufacture of equipment and the production of microbe culture in food waste treatment.
11	Power Sdn Bhd	Australia (FDI) & Malaysia (DDI)	A technology licensing agreement was signed with Quantum BioEnergy Ltd to setup a biogas plant, which converts liquid waste streams (POME) into a distributed energy system (electricity).
12	Return 2 Green Sdn Bhd	Malaysia (DDI)	Production of biodegradable products from bagasse and other agricultural wastes.
13	SIRIM-KRIBB 1. Sireh Emas Marketing Sdn Bhd 2. Syarikat Minyak Afiat Sdn Bhd 3. Kizaherbs Enterprise	R&D Project	R&D collaboration between SIRIM and KRIBB which will benefit three local companies under the nurturing of SIRIM. The companies will benefit from the development of bioactives compounds (from Malaysian ginger species) as well as the study of extraction and standardisation.
14	Saigon Investment Construction & Commerce Co. Ltd / Success Nexus Sdn Bhd	Vietnam (FDI) & Malaysia (DDI)	A joint venture to develop biofuel, biomaterials and other biotech activities in the province of Hau Giang in Vietnam.
15	Supercritical Fluid Extraction (SFE)	Malaysia (DDI)	UPM was chosen to be the custodian of the technology acquired from FeyeCon Carbon Dioxide Technologies of the Netherlands.
16	Xenolab Sdn Bhd	Malaysia (DDI)	Production of educational enzyme kits which leverage on two of UPM's patents related to novel enzyme assay research.
17	YPJ Plantations Sdn Bhd	Malaysia (DDI)	A new entity; AlafPutra BioWealth Sdn Bhd was established to undertake commercialisation of fermentable sugar from oil palm biomass using technology developed by UPM.

Source: BiotechCorp

## Industrial Biotechnology: Targets for next year

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### Over the next year, BiotechCorp will:

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- Create new value and growth by implementing further activities for 'Malaysia's White Biotechnology Foresight & Roadmap'.
  - Maintain consistency in bio-generic manufacturing in offshore networks/markets and firm up existing CRO/CMO with funds and continuous support from the relevant agencies.
  - Attract foreign direct investment (FDI) to use Malaysia as a hub for their industrial biotechnology activities, capitalising on the country's resources and biodiversity, and explore the concept of a centralised regional model for an international setup.
  - Court multi-national corporations (MNCs).
  - Nurture local companies (BioNexus Status companies).
  - Commercialise products from the acquired technology.
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#### More details for BioInvestors

'Overview: Malaysian Industrial Biotechnology', a 24-page whitepaper by Frost & Sullivan, was published in 2009 and is available for download at [www.biotechcorp.com.my](http://www.biotechcorp.com.my).

# Sustaining Momentum of Client Support Services

## Providing Counsel & Processing Applications for BioNexus

**Department** Advisory & Processing Department & Facilitation Department

**Areas of Interest**

1. BioNexus Status
2. Biotechnology Commercialisation Grants
3. Tax Incentives

### Key Results

Issue / Activity	Result
<b>BioNexus Network</b>	A total of 59 new BioNexus Status companies were registered in 2009 alone. See page 69 to view the list of 151 BioNexus Status companies at 31 December 2009. To enhance awareness of BiotechCorp's key internal processes, two guidance papers were published at BiotechCorp's corporate website in 2009: "[GP/CSSD/A&P/BNX001]: <i>Guidelines on the Process and Procedures for BioNexus Status Application</i> " and "[GP/CSSD/A&P/BNX002]: <i>Guidelines on BioNexus Qualifying Criteria</i> ".
<b>Evaluation &amp; Funding</b>	Biotechnology Commercialisation Grants have benefited a number of BioNexus Status companies, especially at the early stage of operations. Access to early financing is vital to start-up companies commercialising their products and services. In 2009, a total of 32 BioNexus Status companies received grants under the Seed, R&D and International Business Development fund schemes. A number of these companies have gone on to expand their businesses to Indonesia and Vietnam. A guidance paper was also published on BiotechCorp's corporate website in 2009 to guide and assist grant applicants: "[GP/CSSD/A&P/EFU001]: <i>Guidelines on Biotechnology Commercialisation Grants Applications</i> ".
<b>Tax Advisory Services</b>	A total of 12 applications for tax incentives from BioNexus Status companies were processed in 2009. In order to create awareness of the benefits and advantages of incentives available to BioNexus Status companies, four seminars were conducted during the year. In addition, two guidance papers were published to guide and assist prospective applicants: "[GP/CSSD/A&P/TAX001]: <i>Tax Incentives for BioNexus Status companies: Process and Procedures</i> " and "[GP/CSSD/A&P/TAX002]: <i>Import Duty and Sales Tax Exemption On Imported Raw Materials and Machinery: Process and Procedures</i> ".

### Client Support Services: Targets for next year

#### Over the next year, BiotechCorp will:

- Plan an effective strategy for BiotechCorp's function as an effective one-stop centre to facilitate applications for BioNexus status, grants and tax incentives.
- Take on a continuous process enhancement exercise.

- Actively venture out to engage both internally and externally with industry, specifically with institutions of higher learning, research institutes and the industry at large to enhance the number of BioNexus Status companies, improve the quality of new BioNexus Status companies as well as to focus on commercialisation in general.
  - Provide value added support and services which will contribute towards the competitiveness of the BioNexus Status companies.
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# **misai kuching** (*Orthosiphon stamineus*): **Nimble** **advantages**



Like the Malaysian *misai kucing*, traditionally prepared as a medicinal tea for a host of joints and urinary ailments, expect BioNexus companies to help induce a healthy perspective for Malaysian biotechnology future.

# BioUsahawan: Success Stories in 2009

**The ability to commercialise biotechnology is a moment to cherish.**

There is great satisfaction in witnessing or experiencing the effects of biotech R&D and its commercialisation in our daily life, in many ways. Here is a selection of two success stories where science and technology have brought new hope to many (the 'rakyat') in the field of healthcare biotechnology.

Learn more about other interesting BioUsahawan achievements at: <http://www.biotechcorp.com.my>

## 1 Project Category

Biomaterials for Medical Applications – Development of bone graft substitutes using calcium phosphate ceramics.

### The Objective

To find a solution to address the requirement for biomaterials (which usually contain ingredients derived from animal origins) that can be accorded Halal status, for medical applications.

### The Result

GranuMas™ – an osteoconductive granular synthetic bone graft material based on calcium phosphate hydroxyapatite – is an excellent alternative material for the repair of bone defects. It is derived from pure commercial chemicals and Malaysian limestone, manufactured using a patented process, and now used as a bioactive coating on many surgical and dental implants used in dental, ENT, orthopaedics and maxillofacial specialties.

### Impact

GranuMas™ alleviates concerns over Halal and ethical issues. It has gone through extensive biocompatibility and safety evaluation, demonstrated excellent biofunctionality in clinical trials, and been successfully screened by various in vitro and in vivo tests. Its highly osteoconductive properties promote good callus formation and the subsequent healing of bone defects. Being a synthetic bone graft, GranuMas™ removes the worry of transmission of disease from allograft (bone from a human donor) and xenograft (bone from animal origin) bones.

### Podcast at BioTube

URL: <http://www.biotechcorp.com.my>

## 2 Project Category

Bio Surgery – Development of larval therapy in wound healing.

### The Objective

To find a low cost and effective solution to address the main complication for people with diabetes – chronic hyperglycemia resulting in neuropathy – which decreases circulation and diminishes a person's sense of pain (thus a small cut or blister on the foot can easily become infected and lead to a need for amputation).

### The Result

The breeding of sterile larvae (maggots) from the species *Lucilia cuprina* and the commercialisation of its use in Maggot Debridement Therapy (MDT) has helped heal chronic wounds in diabetic patients quickly, and effectively.

### Impact

Live, disinfected maggots are intentionally introduced into the non-healing skin and soft tissue wound(s) of the patient. They efficiently clean out only the necrotic tissue within a wound (debridement) to disinfect the wound and to promote wound healing. MDT works effectively in reducing the risk of amputation as well as a reliance on drugs which may cause unwanted side effects.

### Podcast at BioTube

URL: <http://www.biotechcorp.com.my>

## 151 BioNexus Status Companies at 31 December 2009

In 2009, 59 new BioNexus Status companies were registered (60 agricultural, 63 healthcare and 28 industrial companies). These are marked with an asterisk on pages 69-71.

### BioNexus Status Companies: Total Number by Industry at 31 December 2009

Industry	Agriculture	Healthcare	Industrial
Area of Specialisation	Aquaculture & Marine (1) Biofertilizer (9) CRO (2) Crop (15) Livestock (13) Natural Products (20)	CMO (2) CRO (13) Medical Devices & IVT Diagnostics (17) Stem Cell, Tissue & Genetic Engineering (5) Vaccines (2) Biopharma & Pharma (19) Bioinformatics (5)	Biopolymers (3) Fine & Speciality Chemicals (3) Biofuel (1) Enzymes & Microbes (15) Bioremediation (6)
<b>Total</b>	<b>60</b>	<b>63</b>	<b>28</b>

Source: BiotechCorp

### BioNexus Status Companies: Ownership at 31 December 2009

Ownership	Agriculture	Healthcare	Industrial	Total
Bumiputera	27 (45%)	20 (32%)	12 (43%)	59 (39%)
Non-Bumiputera	28 (47%)	30 (47%)	12 (43%)	70 (46%)
Equal	3 (5%)	-	-	3 (2%)
Foreign	2 (3%)	13 (21%)	4 (14%)	19 (13%)
<b>Total</b>	<b>60 (100%)</b>	<b>63 (100%)</b>	<b>28 (100%)</b>	<b>151 (100%)</b>

Source: BiotechCorp

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## 60 Agricultural Companies

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\* 24 companies achieved BioNexus status in 2009.

\*\* Yet to receive final approval from the Ministry of Finance as at 31 December 2009.

1. ACGT Sdn Bhd
2. AGBio Tech Sdn Bhd\*
3. All Cosmos Industries Sdn Bhd
4. Aning Biotech Sdn Bhd\*
5. ar-Raudhah Bio Tech Farm Sdn Bhd
6. Asiatic Green Tech Sdn Bhd\*
7. Asma Agro Sdn Bhd
8. Bio-Fertilisers Sdn Bhd
9. Bio-RT Sdn Bhd\*
10. BioAlpha R&D Sdn Bhd
11. BioFact Life Sdn Bhd
12. Biogenica Scientific Sdn Bhd\*
13. Biolina Corporation Sdn Bhd\*\*
14. Bionic Life Sciences Sdn Bhd
15. BioSafe Microbe Dev Center Sdn Bhd\*
16. Biotech Elite Research and Innovations
17. Biotrack Technology Sdn Bhd
18. Biotropics Malaysia Sdn Bhd\*
19. Bluetech Ventures Sdn Bhd\*
20. Carotech Bio-Vits Sdn Bhd
21. Elite Biotech Sdn Bhd
22. Eunet Biotech Farm Sdn Bhd\*\*
23. Forest Fine Food Sdn Bhd\*
24. Furley BioExtracts Sdn Bhd
25. Genetic Improvement and Farm Technologies
26. Golden Nature Food Sdn Bhd\*\*
27. Grand Range Biotechnologies Sdn Bhd
28. Green World Genetics Sdn Bhd
29. GT BioScience Sdn Bhd\*
30. Handalas Sdn Bhd
31. Hexagon Green Biotech Sdn Bhd
32. Holista Biotech Sdn Bhd
33. Hopematic Sdn Bhd
34. IBG Manufacturing Sdn Bhd
35. Inno Integrasi Sdn Bhd
36. Invitrotech Sdn Bhd
37. Jalur Salju Sdn Bhd\*
38. Kris Biotech Sdn Bhd\*\*
39. Kulim TopPlant Sdn Bhd
40. Malaysian Agri Hi-Tech Sdn Bhd
41. Manna Biotech Sdn Bhd\*
42. Natural Wellness Sdn Bhd
43. North Borneo Herbal Biotechnology Sdn Bhd\*
44. One Biotech Sdn Bhd\*\*
45. Orchid Life Sdn Bhd
46. Pomer Sdn Bhd\*
47. Power Biotechnologies Sdn Bhd
48. Profound Vaccine Sdn Bhd
49. QL Agrobio Sdn Bhd
50. Stella Gen Sdn Bhd
51. Sunzen LifeSciences Sdn Bhd
52. Suvarna Rekha Marines (M) Sdn Bhd
53. TPM Biotech Sdn Bhd\*
54. Tropical Bioessence Sdn Bhd
55. Tropical World Fruits Research Sdn Bhd\*\*
56. TSH Biotech Sdn Bhd
57. Ultimate Biotech Sdn Bhd\*
58. World Aquatic Ecosystem Sdn Bhd\*
59. Yakin Biolab Sdn Bhd\*
60. YSG Biotech Sdn Bhd

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## 63 Healthcare Companies

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\* 24 companies achieved BioNexus status in 2009.

\*\* Yet to receive final approval from the Ministry of Finance as at 31 December 2009.

1. Artisan Pharma (M) Sdn Bhd
2. Asia Pacific Special Nutrients Sdn Bhd
3. Aurigene Discovery Technologies Sdn Bhd
4. Autoimmune Sdn Bhd
5. Bio Med Research Sdn Bhd\*
6. Bio Molecular Industries Sdn Bhd
7. Bio-Collagen Technologies Sdn Bhd\*
8. Bioeasy Sdn Bhd\*
9. BioNusantara Sdn Bhd\*\*
10. Biophotonic Healthcare Sdn Bhd\*
11. Bioven Sdn Bhd
12. Biovic Sdn Bhd
13. BioVites Corporation Sdn Bhd\*
14. Black Gold Global Sdn Bhd\*
15. Borneo Plant Technology Sdn Bhd
16. CellSafe International Sdn Bhd
17. Chakra Biotech Sdn Bhd
18. Codexis Malaysia (yet to be incorporated)
19. Cytopro Malaysia Sdn Bhd\*\*
20. Delphax Sdn Bhd
21. DNA Laboratories Sdn Bhd
22. DNA Research Center Sdn Bhd\*
23. Fjord Technology Sdn Bhd
24. Geneflux Bioscience Sdn Bhd
25. GeneNews Diagnostics Sdn Bhd\*
26. Generti Biosystems Sdn Bhd
27. Granulab Sdn Bhd
28. Healol Melaka Biotech Sdn Bhd
29. Hovid Research Sdn Bhd
30. Immuvita Sdn Bhd\*\*
31. Inno Biologics Sdn Bhd
32. Inno Therapeutics Sdn Bhd\*\*
33. InQpharm Asia Sdn Bhd
34. Joint Implants International Sdn Bhd\*
35. Kuala Lumpur Biotech Manufacturing Sdn Bhd
36. Mab Explorations Sdn Bhd
37. Malaysian Bio-Diagnostics Research Sdn Bhd
38. Malaysian Genomics Resources Centre
39. Malladi Life Sciences Sdn Bhd (previously known as Genzant Sdn Bhd)
40. Malladi M'sia Sdn Bhd (previously known as Escentia Life Science Sdn Bhd)
41. Mostdi Innovations Sdn Bhd\*
42. MyCRO Sdn Bhd\*
43. Neopeutics Sdn Bhd\*\*
44. Nichi-Asia Life Science Sdn Bhd
45. Nova Laboratories Sdn Bhd
46. Novocraft Technologies Sdn Bhd
47. Novotech Clinical Research (Malaysia) Sdn Bhd\*
48. Olipro Biotechnology Sdn Bhd
49. Orthomedic Innovations Sdn Bhd\*
50. Renogenic Sdn Bhd
51. Semantic Biosolutions Sdn Bhd\*
52. Sentinext Therapeutics Sdn Bhd
53. SimuGen Asia
54. Siogen Biotech Sdn Bhd
55. Stem Tech International Sdn Bhd
56. Stemlife Berhad (MESDAQ company, listed in Bursa Malaysia)
57. Stempeutics Research Malaysia Sdn Bhd
58. Telesto Diagnostics Sdn Bhd
59. TMC Biotech Sdn Bhd
60. Trusgen Biologics Sdn Bhd\*
61. Veeda Clinical Research (SE Asia) Sdn Bhd\*\*
62. Vivo Bio Tech (Malaysia) Sdn Bhd
63. WaferGen Biosystem Sdn Bhd\*

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## 28 Industrial Companies

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\* 11 companies achieved BioNexus status in 2009.

\*\* Yet to receive final approval from the Ministry of Finance as at 31 December 2009.

1. BioFusion Sdn Bhd
2. Biogreen Equation Sdn Bhd
3. BioSmart Sdn Bhd
4. Biotec International Asia Sdn Bhd
5. Biotech Alliance International Sdn Bhd
6. CK Agrifeed Sdn Bhd
7. EntoGenex Industries Sdn Bhd
8. First Base Laboratory Sdn Bhd
9. Green & Smart Sdn Bhd
10. GreenWorld Biotech Sdn Bhd\*
11. IOI Lipid Enzymtec Sdn Bhd
12. IPT Kosmobiotechnology Sdn Bhd
13. Jawhara Bioenergie Sdn Bhd\*\*
14. METabolic Explorer Malaysia (to be incorporated)\*
15. Myenzyme Sdn Bhd\*
16. Neu-Bio Sdn Bhd\*\*
17. Nimura Genetic Solution Sdn Bhd
18. O3 Solutions Sdn Bhd\*
19. Promise Earth (M) Sdn Bhd\*
20. Pure Circle Sdn Bhd
21. Return 2 Green Sdn Bhd\*\*
22. Ronser Bio-Tech Sdn Bhd\*
23. SNR Green Tech Sdn Bhd\*\*
24. ST Biotechnology Sdn Bhd
25. Success Nexus Sdn Bhd
26. SynoCell Technology Sdn Bhd
27. TT Biotechnologies Sdn Bhd
28. Vivantis Technologies Sdn Bhd

**tongkat ali**  
(*Eurycoma longifolia*):  
**Unwavering**  
**confidence**



Like the Malaysian *tongkat ali*, the roots of which are traditionally consumed as an aphrodisiac, expect the Malaysian biotechnology industry to motivate you with all the right experiences for an exciting future in biotechnology.

# Statement on Corporate Governance

The Board of Directors of BiotechCorp is committed to instilling a corporate culture which emphasises on good corporate governance and the effective application of the principles and best practises as set out in the Malaysian Code on Corporate Governance.

The Board remains fully resolved to ensuring that integrity, transparency, accountability and professionalism are observed in the conduct of the business activities of BiotechCorp.

It recognises that these core values will not only safeguard the interest of its stakeholders but also maximise the shareholder value.

## A. Board of Directors

### Composition and Balance

The Board currently comprises seven (7) members. With the exception of the Chief Executive Officer, all the remaining members are non-executive directors.

The Chairman is appointed by the Prime Minister of Malaysia. Four (4) directors represent the Government of Malaysia and one (1) director represents the research and development sector.

A brief profile of each Director is presented on pages 21 to 27 of this Annual Report.

To ensure a balance of power and authority, the roles of the Chairman and the Chief Executive Officer of the Company are clearly segregated.

All the non executive directors are independent of Management and are free from any relationship that could materially affect or interfere with the exercise of their independent judgement.

There were several changes in the Board's composition during the financial year 2009. The changes are summarised in the table below:

Name	Remarks
YBhg Dato' Abdul Hanan Alang Endut	Resigned on 24 April 2009
Puan Zaiton Jamaluddin	Resigned on 1 August 2009
Cik Nelleita Omar	Resigned on 3 April 2009
Mr David Ho Sue San	Retired on 30 June 2009
Professor Dr Mary Jane Cardosa	Retired on 30 June 2009
YBhg Dato' Madinah Mohamad	Appointed on 12 June 2009
Professor Dr Zainul Fadziruddin Zainuddin	Appointed on 4 September 2009

## Meetings

The terms of reference of the Board provides for the Board to meet at least once in every quarter with additional meetings convened as and when required. Meetings for the year are scheduled early in the year. Due notice is given for scheduled meetings and additional meetings are convened on ad hoc basis for urgent and important matters. Where appropriate, decisions are taken by way of circular resolutions in between scheduled meetings.

The agenda for each Board meeting and papers relating to the agenda items are disseminated to all Directors prior to the meeting, in order to provide sufficient time for the Directors to review the Board papers and seek clarifications, if any.

During the financial year under review, six (6) board meetings were held.

Details of attendance of each individual Director in respect of the meeting held are disclosed below:

Name of Directors	Number of Board Meetings attended / held (during the Directors' tenure)	
	Attended	%
YBhg Tan Sri Datuk Dr Ahmad Zaharudin Idrus	6	100
YBhg Dato' Iskandar Mizal Mahmood	6	100
YBhg Tan Sri Dato' Seri Dr Haji Mohamed Ismail Merican <sup>1</sup>	0	0
YBhg Dato' Puteh Rukiah Abd Majid	5	83
YBhg Dato' Abdul Hanan Alang Endut	1*	50
YBhg Dato' Sofian Mohd Salleh <sup>2</sup>	5	83
Puan Zaiton Jamaluddin	3*	100
Cik Nelleita Omar	2*	100
Mr David Ho Sue San	2*	100
Professor Dr Mary Jane Cardosa	1*	50
Tuan Haji Mohd. Radzi Hussein	4	66
YBhg Dato' Madinah Mohamad	3*	75
Professor Dr Zainul Fadziruddin Zainuddin	2*	100
<i>Note : * reflects the number of meetings held during the time the director held office</i>		

### Notes:

1. The Board had during its meeting held on 22 February 2010 accepted the cessation of YBhg Tan Sri Dato' Seri Dr Haji Mohamed Ismail bin Merican's membership to the Board and to all related Board Committees with effect from 22 February 2010.
2. The Board had during its meeting held on 22 February 2010 accepted the cessation of YBhg Dato' Sofian Mohd Salleh's membership to the Board and to all related Board Committees with effect from 28 February 2010.

## Supply of Information

Board Meetings are structured with pre-set agendas. Relevant documents and papers to be tabled to the meeting are circulated in advance to ensure there is sufficient time for the Directors to obtain further information where necessary and to facilitate informed decision-making process.

All Directors have full and immediate access to information relating to the Company's business and affairs in the discharge of their duties.

## Appointment and Re-election of Directors

During the period under review, the Board had approved the appointment of YBhg Dato' Madinah Mohamad and Professor Dr Zainul Fadziruddin Zainuddin as Directors of the Company.

In line with the Memorandum and Articles of Association of the Company, the election of directors takes place each year, where one-third of the Directors retire from office at each Annual General Meeting (AGM); the Directors are eligible to offer themselves for re-election.

The Articles also provide that Directors appointed in the year by the Board shall hold office until the next following AGM, and shall be eligible for re-election.

## Board Committees

The Board of Directors has delegated certain responsibilities to Board Committees including the Audit Committee (AC), the Nomination and Remuneration Committee (NRC) and Cluster Working Groups (CWGs).

These Committees operate within clearly defined terms of reference approved by the Board.

### (a) Audit Committee (AC)

The AC was established on 10 February 2006.

The Committee's role is to review the Company's financial reporting and ensure the effectiveness of the systems of internal control and compliance.

The AC comprises the following members:

- i) YBhg Dato' Puteh Rukiah Abd Majid - Chairman
- ii) Tuan Haji Mohd. Radzi Hussein
- iii) Professor Dr Zainul Fadziruddin Zainuddin

The AC met two (2) times during the financial year ended 31 December 2009.

### (b) Nomination and Remuneration Committee (NRC)

The NRC was established on 30 March 2006.

The Committee is primarily responsible for the following:

- a) to review, evaluate and analyse all matters relating to the Company's Human Resource Policies and Procedures;
- b) to review, assess and determine the Company's employee remuneration and benefits structure; and
- c) to oversee the selection and appointment of Senior Management Personnel of the Company.

The NRC currently comprises the following members:

- i) YBhg Tan Sri Datuk Dr Ahmad Zaharudin Idrus – Chairman
- ii) Professor Dr Zainul Fadziruddin Zainuddin
- iii) YBhg Datuk Roseley Dato' Haji Khalid

The NRC met three (3) times during the financial year ended 31 December 2009.

### (c) Cluster Working Groups (CWGs)

The Board of Directors had on 30 March 2006 established CWGs comprising representatives of BiotechCorp and its stakeholders from public and private sectors.

Each CWG is headed by a member of the Board, and serves as the forum for BiotechCorp and its stakeholders to discuss issues relating to the implementation of the National Biotechnology Policy.

There are currently six (6) CWGs, namely:

- (i) CWG on Agricultural Biotechnology
- (ii) CWG on Industrial Biotechnology
- (iii) CWG on Human Capital Development
- (iv) CWG on Healthcare Biotechnology
- (v) CWG on Funding Support
- (vi) CWG on Legislative and Regulatory Framework

(d) Other Committees established by the Board, include the following:

- (i) Tender Board A
- (ii) Tender Board B
- (iii) Programme Recommendation Committee
- (iv) Programme Approval Committee
- (v) Commercialisation and Technical Acquisition Grants (CTAG) Technical Committee
- (vi) CTAG Approval Committee
- (vii) Pre-Disbursement Committee

(vii) Risk Management Committee (RMC)

The RMC was established after being approved by the Board on 12 June 2008.

Its set up was part of the implementation of the Company's Enterprise Risk Management (ERM) Framework to ensure that the identified corporate risks are properly managed, that management of such risk is duly substantiated and that the results are properly measured and documented.

The RMC operates within a clearly defined Terms of Reference duly approved by the Board.

The principal duties and functions of the RMC are, inter alia:

- To ensure that BiotechCorp's policy and information on risk management exercise are effectively communicated and cascaded to all divisions and staff of BiotechCorp;
- To constantly and continuously identify appropriate methods and tools required for the implementation of risk mitigation and action plans;
- To ensure that the practice of ERM is embedded in the operations of BiotechCorp;
- To apprise the Board of Directors on the state of internal control based on BiotechCorp's risk profile, the company's ability to manage the risks identified and the cost/benefit of the related controls.

The membership of the RMC comprise the following:

- Chief Executive Officer of BiotechCorp
- Chief Operating Officer
- All Senior Vice Presidents

The RMC met six (6) times during the financial year ended 31 December 2009.

In view of the satisfactory level of controls currently in place and fewer action plans due for implementation, the ERM reporting will be made available on a quarterly basis effective from 1 January 2010.

## **B. Reports to Shareholders & Investors**

BiotechCorp reports its Operating Expenditure (OPEX) and Development Expenditure received from Ministry of Science, Technology and Innovation and the Ministry of Finance based on approved deliverables and targets set by and between the Government and BiotechCorp.

The Company's website at [www.biotechcorp.com.my](http://www.biotechcorp.com.my) contains vital information concerning the company which is updated on a regular basis.

## C. Accountability and Audit

### Financial Reporting

In presenting the annual financial statements to the stakeholders, the Board aims to present a balanced and understandable assessment of BiotechCorp's position and deliverables.

The Audit Committee assists by scrutinising the information to be disclosed, to ensure accuracy and transparency.

### Directors' Responsibility Statement

The Directors are required by the Companies Act, 1965 to prepare financial statements for each financial year which have been made out in accordance with the provisions of the Act and applicable approved accounting standards and thus, provide a true and fair view of the state of affairs of the Company at the end of the financial year and of the results and cash flows of the Company for the said financial year.

The Directors are satisfied that in preparing the financial statements of the Company for the financial year ended 31 December 2009, the Company has used the appropriate accounting policies and applied them consistently.

The Directors are also of the view that applicable approved accounting standards have been followed in the preparation of these financial statements.

### Internal Control

The Board of BiotechCorp recognises the pivotal role of a strong internal control system in keeping the Company on course towards achieving its goals and objectives.

Towards this end, the Board had established the necessary framework for an internal control system which covers the areas of risk management, financial, organisational, operations and compliance with relevant laws and regulations.

- **Management Committee**

The Management Committee, which is set up by the Company, ensures that the effective day to day operations of BiotechCorp are in place and conducted in accordance with corporate objectives, strategies, approved annual budget as well as approved policies and procedures.

The Committee comprises the Chief Executive Officer, the Chief Operating Officer and Senior Vice Presidents.

The Management Committee meets on a bi-monthly basis to discuss and deliberate on operational issues, monthly financial results and the status of projects undertaken by each of the business unit within the Company.

- **Performance Review**

The Board receives and reviews regular reports from the Management which are required to be brought to its attention for discussion, thus ensuring that it maintains full and effective supervision over appropriate controls.

The Chief Executive Officer leads the presentation of board papers and provides comprehensive explanations on pertinent issues.

In addition, the Board is kept updated on the Company's activities and its operations.

The Board approved Corporate Scorecard, Business Plan and Budget are closely monitored by the Management. Variances and critical operational issues are followed up and appropriate actions are undertaken to address the same.

At the end of the financial year, the Company's performance and financial results are tabled to the Board for approval.

#### • **Internal Audit Function**

The Internal Audit Department (IAD) is independent of the activities and operations of the Company.

The duties of the Internal Auditors are performed impartially, proficiently and with professional due care.

IAD analyses, monitors and undertakes continuous improvement of the system of internal controls to ensure its adequacy and integrity.

Overall, the IAD is responsible for advising the Company on established policies, guidelines, controls and security procedures to minimise risk exposures, prevent losses and promote efficiency and effectiveness in achieving BiotechCorp's mandates as entrusted under the National Biotechnology Policy.

#### • **Risk Management**

The Company applies a balanced approach to risk-taking and is committed to implementing an active approach to the mitigation of risk.

A range of on-going processes to identify, evaluate, monitor and manage risks that may affect the achievement of the Company's objectives were implemented during the year under review.

#### • **Quality Management – ISO 9001:2008**

In the effort to provide professional and excellent service to the biotechnology industry, BiotechCorp had embarked on a Quality Management Initiative in 2009. The initiative aims to improve service delivery through a customer-oriented culture, efficient work processes and continual improvement.

As part of the initiative, a Quality Management System (QMS) based on the ISO9001:2008 standard was established. The scope of the Quality Management System and correspondingly the ISO 9001:2008 certification covers the following areas:

- BioNexus Status Application
- Commercialisation Grants Application & Disbursement Processes
- BioNexus Monitoring Processes
- Technology Acquisition Process
- Support Services (IT, HR and Procurement)

The Company successfully achieved and was granted the ISO 9001:2008 certification on 2 November 2009.

#### • **Business Continuity Strategy**

During the year, BiotechCorp had established the business continuity strategy as part of the management's effort to adopt good corporate governance and best practices. The initiative outlines the framework and sets out the planning methodology to ensure that any disruption to the operations of the Company, as a result of any eventualities, is kept at a minimum and thus helping to build business resiliency.

The Business Continuity Strategy is designed to serve as a:

- Structured framework in managing disaster and business continuity;
- Guideline for the governance, operations and maintenance of the Business Continuity Management (BCM) system; and
- Baseline for the development of the Detailed Business Continuity Plans at Business Unit levels (scheduled in 2010).

## **D. Relationship with External Auditors**

The Company maintains a transparent and appropriate relationship with the External Auditors.

Where necessary, the External Auditors advice are sought to ensure that the Company complies with applicable accounting standards and all statutory requirements.

The External Auditors are invited to attend meetings to deliberate on audit plans and annual financial results and to make necessary recommendations for the Board's approval.

**Malaysian  
Biotechnology  
Corporation Sdn. Bhd.**  
(Company No. 691431-D)  
(Incorporated in Malaysia)  
**and its subsidiaries**

**Financial statements  
for the year ended  
31 December 2009**

# Financial Statements

## Malaysian Biotechnology Corporation Sdn. Bhd.

(Company No. 691431-D)

(Incorporated in Malaysia)

## and its subsidiaries

### Directors' report for the year ended 31 December 2009

The Directors have pleasure in submitting their report and the audited financial statements of the Group and of the Company for the year ended 31 December 2009.

### Principal activities

The Company is principally engaged to act as a dedicated and professional one-stop agency for the government in developing biotechnology industry in the country whilst the principal activities of the subsidiaries are as stated in note 4 to the financial statements. There has been no significant change in the nature of these principal activities during the year.

### Results

	Group RM	Company RM
Net profit for the year	4,254,957	4,375,992

### Reserves and provisions

There were no material transfers to or from reserves and provisions during the year.

### Dividend

No dividend was paid during the year and the Directors do not recommend any dividend to be paid for the year under review.

### Directors of the Company

Directors who served since the date of the last report:

- Tan Sri Datuk Dr Ahmad Zaharudin bin Idrus
- Dato' Iskandar Mizal bin Mahmood
- Dato' Puteh Rukiah binti Abd. Majid
- Mohd. Radzi bin Hussein
- Dato' Madinah binti Mohamad (appointed on 12 June 2009)

## **Directors of the Company (continued)**

Directors who served since the date of the last report:

- Prof Dr Zainul Fadziruddin bin Zainuddin (appointed on 4 September 2009)
- Datuk Roseley bin Dato' Haji Khalid (appointed on 5 March 2010)
- Nelleita binti Omar (resigned on 3 April 2009)
- Dato' Abdul Hanan bin Alang Endut (resigned on 24 April 2009)
- David Ho Sue San (resigned on 30 June 2009)
- Prof Dr Mary Jane Cardoso (resigned on 30 June 2009)
- Zaiton binti Jamaluddin (resigned on 1 August 2009)
- Tan Sri Dato' Seri Dr Haji Mohamed Ismail bin Merican (resigned on 22 February 2010)
- Dato' Sofian bin Mohd Salleh (resigned on 28 February 2010)
- Dato' Dr Mohammed Noor Bin Che Embi (Alternate to Dato' Abdul Hanan Bin Alang Endut, resigned on 6 April 2009)

None of the Directors holding office at 31 December 2009 had any interest in the ordinary shares of the Company during the financial year.

## **Directors' benefits**

Since the end of the previous financial year, no Director of the Company has received nor become entitled to receive any benefit (other than a benefit included in the aggregate amount of emoluments received or due and receivable by Directors as shown in the financial statements or the fixed salary of a full time employee of the Company or of the related corporations) by reason of a contract made by the Company or a related corporation with the Director or with a firm of which the Director is a member, or with a company in which the Director has a substantial financial interest.

There were no arrangements during and at the end of the financial year which had the objective of enabling Directors of the Company to acquire benefits by means of the acquisition of shares in or debentures of the Company or any other body corporate.

## **Issue of shares**

During the financial year, the Company issued 25,000,000 new ordinary shares of RM1 each at par for cash for additional working capital purposes.

The newly issued shares rank pari- passu with the existing issued shares of the Company.

There were no other changes to the authorized, issued and paid-up capital of the Company during the financial year.

## **Options granted over unissued shares**

No options were granted to any person to take up unissued shares of the Company during the financial year.

## **Other statutory information**

Before the financial statements of the Group and of the Company were made out, the Directors took reasonable steps to ascertain that:

- i) there were no known bad debts to be written off and adequate provision made for doubtful debts; and
- ii) all current assets have been stated at the lower of cost and net realisable value.

At the date of this report, the Directors are not aware of any circumstances:

- i) that would render the amount written off for bad debts, or the amount of the provision for doubtful debts in the Group and in the Company inadequate to any substantial extent; or
- ii) that would render the value attributed to the current assets in the Group and in the Company financial statements misleading; or
- iii) which have arisen which render adherence to the existing method of valuation of assets or liabilities of the Group and of the Company misleading or inappropriate; or
- iv) not otherwise dealt with in this report or in the financial statements, that would render any amount stated in the financial statements of the Group and of the Company misleading.

At the date of this report, there does not exist:

- i) any charge on the assets of the Group or of the Company that has arisen since the end of the financial year and which secures the liabilities of any other person; or
- ii) any contingent liability in respect of the Group or of the Company that has arisen since the end of the financial year.

No contingent liability or other liability of any company in the Group has become enforceable, or is likely to become enforceable within the period of twelve months after the end of the financial year which, in the opinion of the Directors, will or may substantially affect the ability of the Company to meet its obligations as and when they fall due.

In the opinion of the Directors, the financial performance of the Group and of the Company for the financial year ended 31 December 2009 have not been substantially affected by any item, transaction or event of a material and unusual nature nor has any such item, transaction or event occurred in the interval between the end of that financial year and the date of this report.

Company No. 691431-D

## **Auditors**

The auditors, Messrs KPMG Desa Megat & Co., have indicated their willingness to accept re-appointment.

Signed on behalf of the Board of Directors in accordance with a resolution of the Directors:



.....  
Tan Sri Datuk Dr Ahmad Zaharudin Bin Idrus



.....  
Dato' Iskandar Mizal Bin Mahmood

Kuala Lumpur,

Date: 25 March 2010

## Malaysian Biotechnology Corporation Sdn. Bhd.

(Company No. 691431-D)

(Incorporated in Malaysia)

### and its subsidiaries

## Balance sheets at 31 December 2009

	Note	Group 2009 RM	Company 2009 RM	2008 RM
<b>Non-current assets</b>				
Property, plant and equipment	2	7,614,802	7,614,802	5,546,525
Intangible asset	3	23,274,566	23,274,566	8,654,462
Investment in a subsidiary	4	-	2	-
<b>Current assets</b>				
Other receivables, deposits and prepayments	5	2,666,474	2,847,472	2,194,598
Cash and cash equivalents	6	367,516,710	367,414,745	184,700,423
Tax recoverable		-	-	262,500
		<u>370,183,184</u>	<u>370,262,217</u>	<u>187,157,521</u>
<b>Current liabilities</b>				
Other payables and accruals	7	80,018,309	80,016,309	40,284,778
Hire purchase liabilities	8	119,963	119,963	119,963
		<u>80,138,272</u>	<u>80,136,272</u>	<u>40,404,741</u>
<b>Net current assets</b>				
		290,044,912	290,125,945	146,752,780
		<u>320,934,280</u>	<u>321,015,315</u>	<u>160,953,767</u>
<b>Financed by:</b>				
<b>Capital and reserves</b>				
Share capital	9	95,000,002	95,000,002	70,000,002
Accumulated losses		(26,088,385)	(25,991,556)	(30,367,548)
		<u>68,911,617</u>	<u>69,008,446</u>	<u>39,632,454</u>
Minority interests		15,794	-	-
<b>Total equity</b>		<u>68,927,411</u>	<u>69,008,446</u>	<u>39,632,454</u>
<b>Deferred and non-current liabilities</b>				
Hire purchase liabilities	8	65,655	65,655	185,618
Deferred income	10	251,941,214	251,941,214	121,135,695
		<u>320,934,280</u>	<u>321,015,315</u>	<u>160,953,767</u>

The notes on pages 90 to 106 are an integral part of these financial statements.

## Malaysian Biotechnology Corporation Sdn. Bhd.

(Company No. 691431-D)

(Incorporated in Malaysia)

### and its subsidiaries

## Income statements for the year ended 31 December 2009

	Note	Group 2009 RM	Company 2009 RM	2008 RM
Other operating income		44,556,954	44,556,954	36,962,491
Staff costs	12	(18,222,236)	(18,222,236)	(14,298,252)
Promotion and corporate communication expenses		(7,622,205)	(7,622,205)	(8,830,987)
Administrative expenses		(9,825,114)	(9,704,114)	(9,440,682)
Other operating expenses		(1,730,086)	(1,730,051)	(1,714,289)
Profit before depreciation and interest expense		7,157,313	7,278,348	2,678,281
Depreciation		(2,882,915)	(2,882,915)	(2,130,162)
<b>Operating profit</b>		4,274,398	4,395,433	548,119
Interest expense		(19,441)	(19,441)	(18,127)
<b>Profit before tax</b>	13	4,254,957	4,375,992	529,992
Tax expense		-	-	-
<b>Net profit for the year</b>		4,254,957	4,375,992	529,992
<b>Attributable to:</b>				
Shareholders of the Company		4,279,163	4,375,992	529,992
Minority interest		(24,206)	-	-
<b>Net profit for the year</b>		4,254,957	4,375,992	529,992

The notes on pages 90 to 106 are an integral part of these financial statements.

## Malaysian Biotechnology Corporation Sdn. Bhd.

(Company No. 691431-D)

(Incorporated in Malaysia)

### and its subsidiaries

## Statements of changes in equity for the year ended 2009

Group	<i>Attributable to shareholders of the Company</i>				
	Share capital RM	Accumulated losses RM	Total RM	Minority interest RM	Total equity RM
At 1 January 2009	70,000,002	(30,367,548)	39,632,454	-	39,632,454
Issue of share capital	25,000,000	-	25,000,000	-	25,000,000
Subscription of shares by minority shareholder	-	-	-	40,000	40,000
Net profit for the year	-	4,279,163	4,279,163	(24,206)	4,254,957
At 31 December 2009	95,000,002	(26,088,385)	68,911,617	15,794	68,927,411

Note 9

Company	<i>Non-distributable</i>		
	Share capital RM	Accumulated losses RM	Total RM
At 1 January 2009	70,000,002	(30,897,540)	39,102,462
Net profit for the year	-	529,992	529,992
At 31 December 2008/1 January 2009	70,000,002	(30,367,548)	39,632,454
Issue of share capital	25,000,000	-	25,000,000
Net profit for the year	-	4,375,992	4,375,992
At 31 December 2009	95,000,002	(25,991,556)	69,008,446

Note 9

The notes on pages 90 to 106 are an integral part of these financial statements.

## Malaysian Biotechnology Corporation Sdn. Bhd.

(Company No. 691431-D)

(Incorporated in Malaysia)

### and its subsidiaries

## Cash flow statements for the year ended 31 December 2009

	Group 2009 RM	Company 2009 RM	2008 RM
<b>Cash flows from operating activities</b>			
Net profit for the year	4,254,957	4,375,992	529,992
Adjustments for:			
Amortisation of government grants	(54,628,545)	(54,628,545)	(46,960,757)
Amortisation of intangible assets	112,843	112,843	-
Depreciation	2,882,915	2,882,915	2,130,162
Interest income	(6,692,972)	(6,692,972)	(1,627,057)
Interest expense	19,441	19,441	18,127
Loss from equipment written off	-	-	4,268
Provision for accumulating compensated expenses	47,252	47,252	8,042
Provision for doubtful debts	268,861	268,861	902,402
	<hr/>	<hr/>	<hr/>
Operating loss before working capital changes	(53,735,248)	(53,614,213)	(44,994,821)
Changes in working capital:			
Other receivables, deposits and prepayments	(740,737)	(740,737)	1,953,734
Other payables and accruals	2,022,162	2,020,162	(1,159,451)
Tax refunded	262,500	262,500	-
	<hr/>	<hr/>	<hr/>
<b>Net cash used in operating activities</b>	<b>(52,191,323)</b>	<b>(52,072,288)</b>	<b>(44,200,538)</b>
	-----	-----	-----
<b>Cash flows from investing activities</b>			
Purchase of property, plant and equipment	(4,951,192)	(4,951,192)	(1,805,531)
Acquisition of technology licenses	(14,732,947)	(14,732,947)	(5,412,537)
Interest received	6,692,972	6,692,972	5,483,384
Acquisition of shares in a subsidiary	-	(2)	-
Advances to subsidiaries	-	(180,998)	-
	<hr/>	<hr/>	<hr/>
<b>Net cash used in investing activities</b>	<b>(12,991,167)</b>	<b>(13,172,167)</b>	<b>(1,734,684)</b>
	-----	-----	-----

**Cash flow statements for the year ended 31 December 2009 (continued)**

	<b>Group 2009 RM</b>	<b>Company 2009 RM</b>	<b>2008 RM</b>
<b>Cash flows from financing activities</b>			
Developmental government grants received	223,573,000	223,573,000	48,000,000
Non-developmental government grants received	38,850,000	38,850,000	38,000,000
Developmental grants disbursed	(39,324,819)	(39,324,819)	(15,169,560)
Hire purchase repayments	(119,963)	(119,963)	(108,880)
Interest paid	(19,441)	(19,441)	(18,127)
Proceed from issuance of share capital	25,000,000	25,000,000	-
Subscription of share by minority shareholder	40,000	-	-
	<hr/>	<hr/>	<hr/>
<b>Net cash generated from financing activities</b>	<b>247,998,777</b>	<b>247,958,777</b>	<b>70,703,433</b>
	-----	-----	-----
<b>Net increase in cash and cash equivalents</b>	<b>182,816,287</b>	<b>182,714,322</b>	<b>24,768,211</b>
<b>Cash and cash equivalents at beginning of year</b>	<b>184,700,423</b>	<b>184,700,423</b>	<b>159,932,212</b>
	<hr/>	<hr/>	<hr/>
<b>Cash and cash equivalents at end of year</b>	<b>367,516,710</b>	<b>367,414,745</b>	<b>184,700,423</b>
	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>
 <b>(i) Cash and cash equivalents comprise:</b>			
Cash and bank balances	4,660,710	4,558,745	4,900,423
Deposits placed with licensed financial institutions	362,856,000	362,856,000	179,800,000
	<hr/>	<hr/>	<hr/>
	<b>367,516,710</b>	<b>367,414,745</b>	<b>184,700,423</b>
	<hr/> <hr/>	<hr/> <hr/>	<hr/> <hr/>

The notes on pages 90 to 106 are an integral part of these financial statements.

## **Malaysian Biotechnology Corporation Sdn. Bhd.**

(Company No. 691431-D)

(Incorporated in Malaysia)

### **and its subsidiaries**

## **Notes to the financial statements**

Malaysian Biotechnology Corporation Sdn. Bhd. is a private limited liability company, incorporated and domiciled in Malaysia. The address of its registered office and principal place of business is as follows:

### **Registered office and principal place of business:**

Level 23, Menara Atlan

161B, Jalan Ampang

50450 Kuala Lumpur

The Company is principally engaged to act as a dedicated and professional one-stop agency for the government in developing biotechnology industry in the country whilst the principal activities of the subsidiaries are as stated in Note 4 to the financial statement.

The financial statements were authorised for issue by the Board of Directors on 25 March 2010.

## **1. Significant accounting policies**

The following accounting policies are adopted by the Group and by the Company consistently in all periods presented in these financial statements.

### **(a) Basis of accounting**

The financial statements of the Group and the Company have been prepared under the historical cost basis except as disclosed in the notes to the financial statements and in accordance with Private Entity Reporting Standards, accounting principles generally accepted and the provisions of the Companies Act, 1965 in Malaysia.

### **(b) Basis of consolidation**

#### ***(i) Subsidiaries***

Subsidiaries are entities, including unincorporated entities, controlled by the Group. Control exists when the Group has the ability to exercise its power to govern the financial and operating policies of an entity so as to obtain benefits from its activities. In assessing control, potential voting rights that presently are exercisable are taken into account. Subsidiaries are consolidated using the purchase method of accounting.

## 1. Significant accounting policies (continued)

### (b) Basis of consolidation (continued)

#### *(i) Subsidiaries (continued)*

Under the purchase method of accounting, the financial statements of subsidiaries are included in the consolidated financial statements from the date that control commences until the date that control ceases.

Investments in subsidiaries are stated in the Company's balance sheet at cost less any impairment losses, unless the investment is classified as held for sale (or included in a disposal group that is classified as held for sale).

#### *(ii) Minority interest*

Minority interest at the balance sheet date, being the portion of the net identifiable assets (excluding goodwill) of subsidiaries attributable to equity interests that are not owned by the Company, whether directly or indirectly through subsidiaries, are presented in the consolidated balance sheet and statement of changes in equity within equity, separately from equity attributable to the equity shareholders of the Company. Minority interest in the results of the Group are presented on the face of the consolidated income statement as an allocation of the total profit or loss for the year between minority interest and the equity shareholders of the Company.

Where losses applicable to the minority exceed the minority's interest in the equity of a subsidiary, the excess, and any further losses applicable to the minority, are charged against the Group's interest except to the extent that the minority has a binding obligation to, and is able to, make additional investment to cover the losses. If the subsidiary subsequently reports profits, the Group's interest is allocated with all such profits until the minority's share of losses previously absorbed by the Group has been recovered.

#### *(iii) Transactions eliminated on consolidation*

Intra-group balances and transactions, and any unrealised income and expenses arising from intra-group transactions, are eliminated in preparing the consolidated financial statements.

### (c) Property, plant and equipment

Property, plant and equipment are stated at cost less accumulated depreciation and accumulated impairment losses.

Upon the disposal of an item of property, plant and equipment, the difference between the net disposal proceeds and the net carrying amount is recognised in the income statement.

## 1. Significant accounting policies (continued)

### (c) Property, plant and equipment (continued)

#### **Depreciation**

Work-in-progress is not depreciated. Depreciation of other property, plant and equipment is provided for on a straight line basis to write off the cost of each asset to its residual value over the estimated useful life at the following annual rates:

Office equipment	20%
Computer equipment	33 1/3%
Furniture and fittings	20%
Motor vehicles	20%

Property, plant and equipment acquired under hire purchase arrangements are capitalised at their purchase costs and depreciated on the same basis as owned assets. The total amount payables under hire purchase arrangements are included as hire purchase liabilities.

The interest component of hire purchase payments is recognised in the income statement so as to give a constant periodic rate of interest on the outstanding liability at the end of each accounting period.

### (d) Intangible asset

#### **Patent and licenses**

Patent, licenses and other similar purchased rights of technology platform are recognized as intangible assets if it is probable that the future economic benefits that are attributable to such assets will flow to the Company and the cost of such assets can be reliably measured.

Intangible asset is stated at cost less accumulated amortisation and impairment losses.

Subsequent expenditure on capitalised intangible assets is capitalised only when it increases the future economic benefits embodied in the specific asset to which it relates. All other expenditures are expensed as incurred.

Amortisation is charged to the income statement on a straight line basis over the estimated useful lives of intangible assets unless such lives are indefinite. Intangible assets with indefinite useful lives are tested for impairment annually and whenever there is an indication that they may be impaired. Intangible assets are amortised from the date that they are available for use. The estimated useful lives of the intangible assets are determined based on the estimated life span of the patent, licences or rights of the technology platform. The estimated useful lives for the current financial year is between 20 to 25 years.

## 1. Significant accounting policies (continued)

### (d) Intangible asset (continued)

Amortisation methods, useful lives and residual values are reviewed at the end of each reporting period and adjusted, if appropriate.

### (e) Other receivables, deposits and prepayments

Other receivables, deposits and prepayments are stated at cost net of allowance for doubtful debts.

### (f) Cash and cash equivalents

Cash and cash equivalents consist of cash in hand, balances and deposits with licensed financial institutions.

### (g) Liabilities

Other payables and accruals are stated at cost.

Provision for liabilities are recognised when the Company has a present obligation as a result of a past event and it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation, and a reliable estimate of the amount can be made. Provisions are reviewed at each balance sheet date and adjusted to reflect the current best estimate.

### (h) Impairment of assets

The carrying amount of assets, other than financial assets, are reviewed at each balance sheet date to determine whether there is any indication of impairment. If any such indication exists, the asset's recoverable amount is estimated. An impairment loss is recognised whenever the carrying amount of an asset or the cash-generating unit to which it belongs exceeds its recoverable amount. Impairment losses are recognised in the income statement.

The recoverable amount is the greater of the asset's net selling price and its value in use. In assessing value in use, estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. For an asset that does not generate largely independent cash inflows, the recoverable amount is determined for the cash-generating unit to which the asset belongs.

An impairment loss is reversed if there has been a change in the estimates used to determine the recoverable amount and is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised. The reversal is recognised in the income statement.

## 1. Significant accounting policies (continued)

### (i) Income tax

Tax on the profit or loss for the year comprises current and deferred tax. Income tax is recognised in the income statement except to the extent that it relates to items recognised directly in equity, in which case it is recognised in equity.

Current tax expense is the expected tax payable on the taxable income for the year, using tax rates enacted or substantially enacted at the balance sheet date, and any adjustments to tax payable in respect of previous years.

Deferred tax is provided, using the balance sheet liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the financial statements. Temporary differences are not recognised for the initial recognition of assets or liabilities that at the time of the transaction affects neither accounting nor taxable profit. The amount of deferred tax provided is based on the expected manner of realisation or settlement of the carrying amount of assets and liabilities, using tax rates enacted or substantially enacted at the balance sheet date.

A deferred tax asset is recognised only to the extent that it is probable that future taxable profits will be available against which the asset can be utilised.

### (j) Employee benefits

#### (i) Short term employee benefits

Wages, salaries, bonuses and social security contributions are recognised as an expense in the year in which the associated services are rendered by employees of the Company. Short term accumulating compensated absences such as paid annual leaves are recognised when services are rendered by employees that increase their entitlement to future compensated absences.

#### (ii) Defined contribution plan

As required by law, companies in Malaysia make contributions to the Employees Provident Fund ("EPF"). Such contributions are recognised as an expense in the income statement as incurred.

## 1. Significant accounting policies (continued)

### (k) Foreign currency

#### ***Foreign currency transactions***

Transactions in foreign currencies are translated to Ringgit Malaysia at rates of exchange ruling at the date of the transactions.

Monetary assets and liabilities denominated in foreign currencies at the balance sheet date are translated to Ringgit Malaysia at the foreign exchange rates ruling at that date. Foreign exchange differences arising on translation are recognised in the income statement.

The closing rate used in the translation of foreign currency monetary assets and liabilities is as follows:

1 USD	:	RM3.42 (2008: RM3.57)
1 SGD	:	RM2.44 (2008: RM2.41)

### (l) Income

#### ***(i) Services***

Income from services rendered is recognised net of discounts in the income statement as and when services are performed.

#### ***(ii) Interest income***

Interest income is recognised in the income statement as and when there is reasonable assurance that it will be received.

### (m) Expenses

#### ***Operating lease payments***

Payments made under operating leases are recognised in the income statement on a straight line basis over the term of the lease. Lease incentives received are recognised in the income statement as an integral part of the total lease payments made.

### (n) Government grants

Government grant is recognised initially as deferred income when there is reasonable assurance that it will be received and that the Company will comply with the conditions associated with the grant. Grants that compensate the Company for expenses incurred are recognised in the income statement over the period necessary to match them with the related costs that they are intended to compensate. Grants that compensate the Company for the cost of an asset are recognised in the income statements on a systematic basis over the useful life of the asset.

## 2. Property, plant and equipment

Group	Office equipment RM	Computer equipment RM	Furniture and fittings RM	Motor vehicles RM	Work-in progress RM	Total RM
<b>Cost</b>						
At 1 January 2009	902,388	6,403,824	1,252,750	667,243	162,000	9,388,205
Additions	16,700	1,438,803	26,634	146,646	3,322,409	4,951,192
Transfer	-	162,000	-	-	(162,000)	-
At 31 December 2009	919,088	8,004,627	1,279,384	813,889	3,322,409	14,339,397
<b>Depreciation</b>						
At 1 January 2009	404,106	2,436,944	667,878	332,752	-	3,841,680
Charge for the year	183,104	2,306,162	254,949	138,700	-	2,882,915
At 31 December 2009	587,210	4,743,106	922,827	471,452	-	6,724,595
<b>Net book value</b>						
At 31 December 2009	331,878	3,261,521	356,557	342,437	3,322,409	7,614,802
<b>Company</b>						
<b>Cost</b>						
At 1 January 2009	902,388	6,403,824	1,252,750	667,243	162,000	9,388,205
Additions	16,700	1,438,803	26,634	146,646	3,322,409	4,951,192
Transfer	-	162,000	-	-	(162,000)	-
At 31 December 2009	919,088	8,004,627	1,279,384	813,889	3,322,409	14,339,397
<b>Depreciation</b>						
At 1 January 2009	404,106	2,436,944	667,878	332,752	-	3,841,680
Charge for the year	183,104	2,306,162	254,949	138,700	-	2,882,915
At 31 December 2009	587,210	4,743,106	922,827	471,452	-	6,724,595
<b>Net book value</b>						
At 31 December 2009	331,878	3,261,521	356,557	342,437	3,322,409	7,614,802
At 31 December 2008	498,282	3,966,880	584,872	334,491	162,000	5,546,525
Depreciation charged for the year ended 31 December 2008	162,934	1,598,260	245,076	123,892	-	2,130,162

## 2. Property, plant and equipment (continued)

### *Assets under hire purchase*

As at 31 December 2009, the net book value of motor vehicle of the Group and the Company that were acquired by means of hire purchase arrangements is RM200,678 (2008: RM334,491).

## 3. Intangible asset

	Group	Company	
	2009 RM	2009 RM	2008 RM
Technology patent and licenses, at cost	23,387,409	23,387,409	8,654,462
At 1 January	8,654,462	8,654,462	3,241,925
Additional	14,732,947	14,732,947	5,412,537
Less: Amortisation to Income Statement	23,387,409 (112,843)	23,387,409 (112,843)	8,654,462 -
At 31 December	23,274,566	23,274,566	8,654,462

The acquisitions of technology patent and licenses are part of the 9th Malaysia Plan ("RMK-9") program under the Biotechnology Acquisition Program. Completion of the various technologies is based on the fulfillment of specific terms and conditions as stated under the individual agreement. Intangible asset is amortised on a straight line basis over its estimated useful lives when the asset is available for use.

## 4. Investment in a subsidiary

	Company	
	2009 RM	2008 RM
At cost:		
Unquoted shares in Malaysia	2	-

#### 4. Investment in a subsidiary (continued)

Details of the subsidiaries are as follows:

Name of subsidiary	Country of incorporation	Principal activities	Effective equity interest	
			2009 %	2008 %
BiotechCorp Investment Holdings Sdn. Bhd	Malaysia	Investment holding	100	-
<b>Subsidiary of BiotechCorp Investment Holdings Sdn. Bhd.</b>				
Malaysian Bio-XCell Sdn. Bhd.	Malaysia	Development and operation of biotechnology park	60	-

All the subsidiaries are audited by the firm of KPMG International.

#### 5. Other receivables, deposits and prepayments

	Group 2009 RM	Company 2009 RM	2008 RM
Other receivables and prepayments	2,925,295	2,925,295	2,179,558
Less : Provision for doubtful debts	(1,171,263)	(1,171,263)	(902,402)
	<hr/>	<hr/>	<hr/>
Sundry deposits	1,754,032	1,754,032	1,277,156
Amount due from subsidiaries	912,442	912,442	917,442
	-	180,998	-
	<hr/>	<hr/>	<hr/>
	<u>2,666,474</u>	<u>2,847,472</u>	<u>2,194,598</u>

The amount due from subsidiaries are non-trade in nature, unsecured, interest free and repayable on demand.

## 6. Cash and cash equivalents

	Group 2009 RM	Company 2009 RM	2008 RM
Cash and bank balances	4,660,710	4,558,745	4,900,423
Deposits placed with licensed financial institutions	362,856,000	362,856,000	179,800,000
	<u>367,516,710</u>	<u>367,414,745</u>	<u>184,700,423</u>

Included under cash and cash equivalents of the Group and of the Company are amounts restricted for the purposes of developmental projects amounting to RM191,268,510 (2008 : RM137,647,208).

## 7. Other payables and accruals

	Group 2009 RM	Company 2009 RM	2008 RM
Developmental grants awarded payables	73,601,772	73,601,772	35,937,655
Other payables	5,883,986	5,883,986	3,732,592
Accruals	532,551	530,551	614,531
	<u>80,018,309</u>	<u>80,016,309</u>	<u>40,284,778</u>

The developmental grants awarded payables cover for periods up to 2 years.

## 8. Hire purchase liabilities

Hire purchase liabilities are payable as follows:

	Group and Company					
	Payments 2009 RM	Interest 2009 RM	Principal 2009 RM	Payments 2008 RM	Interest 2008 RM	Principal 2008 RM
Less than one year	130,334	18,287	112,047	139,404	19,441	119,963
Between one and five years	83,799	10,228	73,571	214,133	28,515	185,618
	<u>214,133</u>	<u>28,515</u>	<u>185,618</u>	<u>353,537</u>	<u>47,956</u>	<u>305,581</u>

**9. Share capital**

	Group and Company			
	2009 Amount RM	2009 Number of shares	2008 Amount RM	2008 Number of shares
Ordinary shares of RM1 each:				
Authorised share capital	100,000,000	100,000,000	100,000,000	100,000,000
At 1 January	70,000,002	70,000,002	70,000,002	70,000,002
Issued and paid up during the year	25,000,000	25,000,000	-	-
At 31 December	95,000,002	95,000,002	70,000,002	70,000,002

**10. Deferred income**

	Group and Company	
	2009 RM	2008 RM
<b>Non-current</b>		
<b>A) Developmental Grants</b>		
At 1 January	109,801,871	118,395,132
Received during the year:		
IP Research and Management Program ("IPRM")	13,277,000	400,000
Biotechnology Acquisition Grant ("BAP")	14,430,000	-
Biotechnology Commercialisation Grant ("BCG")	58,591,000	39,600,000
Biotechnology Entrepreneur Program ("BEP")	11,096,250	-
Biotechnology Entrepreneurship Training Program ("BeST")	19,830,000	-
BioNexus Partners Program ("BNP")	6,348,750	8,000,000
Biotechnology Park ("Bio-XCell")	100,000,000	-
	333,374,871	166,395,132
Add: Interest income from placement of deposits	-	3,856,327
	333,374,871	170,251,459
Less: Commercialisation grants awarded	(67,250,272)	(48,756,576)
BNP grants awarded	(9,738,664)	-
	256,385,935	121,494,883
Less: Amortisation to Income Statement	(17,005,449)	(11,693,012)
At 31 December	239,380,486	109,801,871

**10. Deferred income (continued)**

	Group and Company	
	2009 RM	2008 RM
<b>B) Non-developmental Grants</b>		
At 1 January	11,333,824	8,601,569
Received during the year	38,850,000	38,500,000
Less: Amortisation to Income Statement	(37,623,096)	(35,267,745)
	<hr/>	<hr/>
At 31 December	12,560,728	11,333,824
	<hr/>	<hr/>
<b>Total deferred income</b>	<b>251,941,214</b>	<b>121,135,695</b>
	<hr/> <hr/>	<hr/> <hr/>

The Company was awarded with government grants for the following purposes:

**A) Developmental Grants**

Intellectual Property Research and Management Program comprises a series of programs that are targeted to enhance the efficiency and effectiveness of intellectual property management and protection in Malaysia.

Biotechnology Acquisition Grant provides funding for the acquisition of enabling and platform technologies within the biotechnology industry.

Biotechnology Commercialisation Grant provides funding to facilitate the establishment of biotechnology start-ups. The Biotechnology Commercialisation Grant comprises Seed Funding, R&D Matching Funding and International Business Development Matching Funding.

Biotechnology Entrepreneur Program seeks to develop biotechnology entrepreneurs by providing the necessary skill sets and knowledge to commence, develop and manage new biotechnology ventures.

Biotechnology Entrepreneurship Training Program ("BeST") is an intensive and structured training program for biotechnology graduates to equip themselves with the necessary knowledge and skills with the aim to provide a competent workforce in the industry.

BioNexus Partner Program ("BNP") seeks to promote active collaboration between biotechnology companies and universities, research institutes, technology parks and incubators in the country by leveraging the facilities, infrastructure and capabilities available.

Biotechnology Park project is an initiative approved under the Government's Second Economic Stimulus Package to develop and operate a biotechnology park in Iskandar Malaysia, Johor known as 'Bio-XCell'.

## 10. Deferred income (continued)

### B) Non-developmental Grants

The non-developmental grant received from the government is to finance the Company's day-to-day operating activities.

## 11. Deferred taxation

No deferred tax has been recognised for the following items:

	<b>Group</b>	<b>Company</b>	
	<b>2009</b>	<b>2009</b>	<b>2008</b>
	<b>RM</b>	<b>RM</b>	<b>RM</b>
Unutilised tax losses	30,362,673	30,362,673	30,362,673
Temporary differences	2,789,943	2,789,943	2,720,102
	<u>33,152,616</u>	<u>33,152,616</u>	<u>33,082,775</u>

The unutilised tax losses and deductible temporary differences do not expire under current tax legislation. Deferred tax assets have not been recognised in respect of these items because it is not probable that future taxable profit will be available against which the Company can utilise the benefits.

## 12. Staff costs

	<b>Group</b>	<b>Company</b>	
	<b>2009</b>	<b>2009</b>	<b>2008</b>
	<b>RM</b>	<b>RM</b>	<b>RM</b>
Directors' remunerations	1,298,486	1,298,486	1,059,121
Employee Provident Fund	1,939,955	1,939,955	1,152,763
Salaries and other staff costs	14,936,543	14,936,543	12,078,326
Provision for accumulating compensated absences	47,252	47,252	8,042
	<u>18,222,236</u>	<u>18,222,236</u>	<u>14,298,252</u>

The number of employees of the Company at the end of the year is 160 (2008 : 131).

**13. Net profit before tax**

	Note	Group 2009 RM	Company 2009 RM	Company 2008 RM
Net profit before tax is arrived at after charging:				
Audit fee		22,000	20,000	20,000
Depreciation		2,882,915	2,882,915	2,130,162
Amortisation of intangible assets	3	112,843	112,843	-
Rental - Office		3,343,770	3,343,770	3,268,666
Interest expense		19,441	19,441	18,127
Lease rental		261,296	261,296	229,549
Loss from equipment written-off		-	-	4,268
Provision for doubtful debts		268,861	268,861	902,402
		<u>          </u>	<u>          </u>	<u>          </u>
and crediting:				
Interest income		6,692,972	6,692,972	1,627,057
Realised gain on foreign exchange		3,454	3,454	17,220
Amortisation of developmental grants	10	17,005,449	17,005,449	11,693,012
Amortisation of non-developmental grants	10	37,623,096	37,623,096	35,267,745
		<u>          </u>	<u>          </u>	<u>          </u>

**14. Tax expense**

	Group 2009 RM	Company 2009 RM	Company 2008 RM
Profit before tax	4,254,957	4,375,992	529,992
	<u>          </u>	<u>          </u>	<u>          </u>
Income tax using Malaysian tax rates	1,063,739	1,093,998	137,798
Non deductible expenses	30,259	-	-
Tax exemptions	(1,093,998)	(1,093,998)	(137,798)
	<u>          </u>	<u>          </u>	<u>          </u>
Tax expense	-	-	-
	<u>          </u>	<u>          </u>	<u>          </u>

The Company has been granted a tax exemption on its statutory income under subsection 127 (3A) Income Tax Act 1967 (for all sources of income except for dividend income) for the period of 5 years commencing from year of assessment 2006 to 2010.

## 15. Operating leases

### *Leases as lessee*

Total future minimum lease payments under non-cancellable operating leases are as follows:

	Group and Company	
	2009 RM	2008 RM
Less than one year	185,473	100,782
Between one and five years	398,509	74,745
	<u>583,982</u>	<u>175,527</u>

The Company leases a number of computer equipment under operating leases. The leases run for a period of three years. None of the leases include contingent rentals.

## 16. Capital commitments

	Group	Company	
	2009 RM	2009 RM	2008 RM
Approved and contracted for:			
Property, plant and equipment	897,745	897,745	378,000
Patent and licenses	27,061,104	27,061,104	9,488,998
Land for development	69,063,508	-	-
	<u>97,022,357</u>	<u>27,958,849</u>	<u>9,866,998</u>

## 17. Financial instruments

### **Financial risk management objectives and policies**

Exposure to credit, liquidity and foreign currency risk arises in the normal course of the Group's business. The Board of Directors reviews and agrees policies for managing these risks and the risks are summarised as below:

### **Credit risk**

The Group's exposure to credit risk arises through its other receivables. At balance sheet date, there was no significant exposure of credit risk. The maximum exposure to credit risk is represented by the carrying amount of the other receivables presented in the balance sheet.

## 17. Financial instruments (continued)

### Liquidity risk

The Group monitors and maintains a level of cash and cash equivalents deemed adequate by management to finance the Group's operations and to mitigate the effects of fluctuations in cash flows.

### Foreign currency risk

The Group incurs foreign currency risk on expenses that are denominated in a currency other than Ringgit Malaysia. The currency giving rise to this risk is primarily US Dollars, EURO and Canadian Dollars that are restricted to operational transactions. Hence, foreign currency risk is minimal.

### Effective interest rates and repricing analysis

The following table indicates the effective interest rates at the balance sheet date and the year in which they reprice or mature, whichever is earlier.

Group and Company	Effective interest rates %	Total RM	Within 1 year RM
<b>2009</b>			
<b>Financial asset</b>			
Deposits placed with licensed financial institutions	2.05 to 3.54	362,856,000	362,856,000
<b>2008</b>			
<b>Financial asset</b>			
Deposits placed with licensed financial institutions	3.24 to 3.68	179,800,000	179,800,000

### Fair values

#### *Recognised financial instruments*

At the balance sheet date, the carrying amount of cash and cash equivalents, other receivables, deposits and prepayments, other payables and accruals approximate their fair value due to the relatively short term nature of these financial instruments.

## **17. Financial instruments (continued)**

### *Unrecognised financial instruments*

There are no unrecognised financial instruments at the balance sheet date.

## **18. Comparative figures**

There are no comparative figures for the consolidated financial statements as this is the first set of consolidated financial statements prepared by the Group.

## **Malaysian Biotechnology Corporation Sdn. Bhd.**

(Company No. 691431-D)

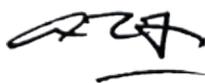
(Incorporated in Malaysia)

### **and its subsidiaries**

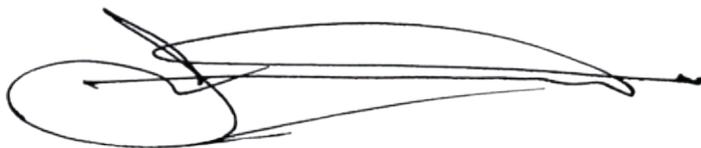
### **Statement by Directors pursuant to Section 169(15) of the Companies Act, 1965**

In the opinion of the Directors, the financial statements set out on pages 85 to 106 are drawn up in accordance with Private Entity Reporting Standards and the Companies Act, 1965 in Malaysia so as to give a true and fair view of the financial position of the Group and of the Company as of 31 December 2009 and of its financial performance and cash flows for the year then ended.

Signed on behalf of the Board of Directors in accordance with a resolution of the Directors:



.....  
**Tan Sri Datuk Dr Ahmad Zaharudin Bin Idrus**



.....  
**Dato' Iskandar Mizal Bin Mahmood**

Kuala Lumpur,

Date: 25 March 2010

## Malaysian Biotechnology Corporation Sdn. Bhd.

(Company No. 691431-D)

(Incorporated in Malaysia)

### and its subsidiaries

### Statutory declaration pursuant to Section 169(16) of the Companies Act, 1965

I, **Syed Agil Bin Syed Hashim**, the officer primarily responsible for the financial management of Malaysian Biotechnology Corporation Sdn. Bhd., do solemnly and sincerely declare that the financial statements set out on pages 85 to 106 are, to the best of my knowledge and belief, correct and I make this solemn declaration conscientiously believing the same to be true, and by virtue of the provisions of the Statutory Declarations Act, 1960.

Subscribed and solemnly declared by the above named in Kuala Lumpur on 25 March 2010.



.....  
**Syed Agil Bin Syed Hashim**

Before me:



NO. 656, TINGKAT 2,  
BATU 4, JALAN IPOH,  
51200 KUALA LUMPUR.

## **Independent auditors' report to the members of Malaysian Biotechnology Corporation Sdn. Bhd.**

(Company No. 691431-D)  
(Incorporated in Malaysia)

### **Report on the Financial Statements**

We have audited the financial statements of Malaysian Biotechnology Corporation Sdn. Bhd., which comprise the balance sheets as at 31 December 2009 of the Group and of the Company, and the income statements, statements of changes in equity and cash flow statements of the Group and of the Company for the year then ended, and a summary of significant accounting policies and other explanatory notes, as set out on pages 85 to 106.

#### *Directors' Responsibility for the Financial Statements*

The Directors of the Company are responsible for the preparation and fair presentation of these financial statements in accordance with Private Entity Reporting Standards and the Companies Act, 1965 in Malaysia. This responsibility includes: designing, implementing and maintaining internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances.

#### *Auditors' Responsibility*

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with approved standards on auditing in Malaysia. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on our judgment, including the assessment of risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, we consider internal control relevant to the Company's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by the Directors, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

*Opinion*

In our opinion, the financial statements have been properly drawn up in accordance with Private Entity Reporting Standards and the Companies Act, 1965 in Malaysia so as to give a true and fair view of the financial position of the Group and of the Company as of 31 December 2009 and of their financial performance and cash flows for the year then ended.

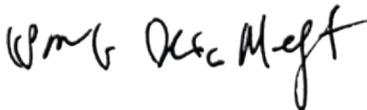
**Report on Other Legal and Regulatory Requirements**

In accordance with the requirements of the Companies Act, 1965 in Malaysia, we also report the following:

- a) In our opinion, the accounting and other records and the registers required by the Act to be kept by the Company and its subsidiaries have been properly kept in accordance with the provisions of the Act.
- b) We are satisfied that the accounts of the subsidiaries that have been consolidated with the Company's financial statements are in form and content appropriate and proper for the purposes of the preparation of the financial statements of the Group and we have received satisfactory information and explanations required by us for those purposes.
- c) Our audit reports on the accounts of the subsidiaries did not contain any qualification or any adverse comment made under Section 174(3) of the Act.

**Other Matters**

This report is made solely to the members of the Company, as a body, in accordance with Section 174 of the Companies Act, 1965 in Malaysia and for no other purpose. We do not assume responsibility to any other person for the content of this report.



**KPMG Desa Megat & Co.**  
Firm Number: AF 0759  
Chartered Accountants



**Abdullah Abu Samah**  
Approval Number: 2013/06/10(J)  
Chartered Accountant

Petaling Jaya

Date: 25 March 2010

# Editorial Team for Annual Report 2009



## **Standing (from left) :**

1. Shahreen Abdul Hakim – Economist, Strategy & Planning Division
2. Syed Agil Syed Hashim – Acting Senior Vice President, Corporate Services Division
3. Zainal Md Tahir – Business Analyst, Agriculture
4. Ahmad Fazil Ellias – Manager, CWG Industrial, Industrial

## **Sitting (from left) :**

1. Syed Arnez Amdan Syed Khalil – Business Analyst, Healthcare
2. Nora Mohamed - Vice President, Advisory & Processing, Client Support Services Division
3. Shahrul Hasry Abd Rahim – Project Executive, Corporate Affairs Division
4. Kanimoli Ramaiah - Vice President, Facilitation, Client Support Services Division
5. Sharifah Hanifah Syed Abdul Aziz - Vice President, Legal & Secretarial, CEO's Office
6. Nurdita Fadzlinda Ahmad Rasidi - Manager, Corporate Planning, Corporate Services Division
7. Yap Sook Yee - Manager, Secretarial, CEO's Office
8. Raja Taufik Ahmad - Lead Business Analyst, Healthcare

## **Other contributors :**

1. Mohamad Azam Ali – Senior Vice President, Corporate Affairs Division
2. Adrian Abd Ghani - Vice President, Legal & Regulatory, Strategy & Planning Division
3. Mohammad Jaafar Ahmad - Vice President, Industrial
4. Dr. Harcharan Singh - Vice President, Agriculture





**BIOTECHCORP**  
MALAYSIAN BIOTECHNOLOGY  
CORPORATION

[www.biotechcorp.com.my](http://www.biotechcorp.com.my)  
[www.biomalaysia.com.my](http://www.biomalaysia.com.my)

Malaysian Biotechnology Corporation (BiotechCorp) is a central contact point for biotechnology and life science companies in Malaysia. BiotechCorp is the industry's one-stop-centre providing support, facilitation and advisory services.

**MALAYSIAN BIOTECHNOLOGY CORPORATION SDN BHD  
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