



# Biotech keeps up amazing growth



Biotech is behind many of the leading edge therapies in healthcare, such as stem cell research.

## Importance of biotech sector

Biotechnology is a difficult area to define, encompassing all aspects of the industrial application of living organisms and/or biological techniques. Put another way, it is a collection of technologies that capitalize on the attributes of cells and biological molecules, such as DNA, to work for us.

Although it still seems like a very new area, biotech has actually been around for over 30 years. However, it is in recent years that the sector has really begun to thrive. According to consultants Ernst & Young, publicly traded biotech companies generated revenues of over \$60 billion in 2005, an 18% increase over 2004.

The vast potential for the industry can be seen in the fact that, according to the same Ernst & Young report, it raised more than \$19 billion in capital in 2005. What is more, biotech is now a truly global business, with Asia-Pacific showing the fastest growth rates.

## Key trends in biotech

The most obvious application for biotech is in healthcare. Healthcare spending already consumes vast amounts of money, with US spending standing at around 16% of Gross Domestic Product. Yet, there are still many diseases for which reliable treatments do not exist today. The healthcare industry sees biotech as the key to creating this next generation of vaccines and medicines. Biotech is behind many of the leading edge therapies in healthcare, such as stem cell research.

However, the usage of biotech is much broader than healthcare. Examples of where biotech could be used in other areas include using biotech enzymes for the production of ethanol (with one gallon of ethanol potentially as efficient as 30 gallons of oil), biodegradable bioplastics which can reduce plastic waste by up to 80%, and using biotech processes to reduce carbon dioxide emissions in the manufacture of vitamins.

## Biotech in Ireland

Ireland's biotechnology industry is primed for growth. This success is due in part to the significant R&D investment in the sector in recent years. Irish bioscience will benefit from a combined funding of more \$1.3 billion.

Ireland is now a global competitor for R&D investment from multinational companies and leading research institutions. This is a result of a concerted effort in government policy to build a substantial foundation of world-class science and technology in Ireland's academic institutions and, in particular, the encouragement of strong business and academic collaborations.

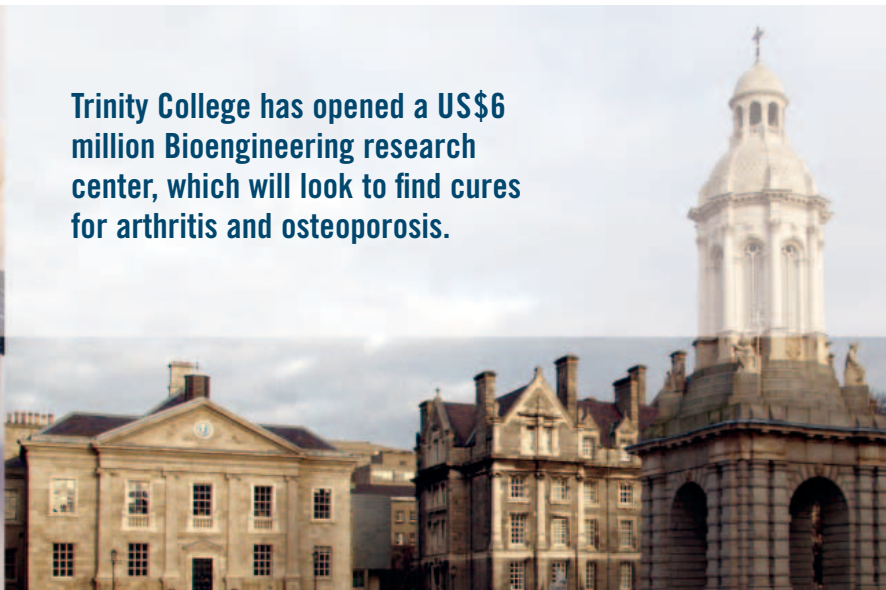
The leadership of the Irish biotech industry will be reinforced by the decision, in 2005, of the Irish Government to approve IDA Ireland funding for the establishment of a National Institute for Bioprocessing Research and Training (NIBRT). This will provide a state-of-the-art, industry focused, institute aimed at giving Ireland a competitive advantage in serving the global biopharmaceutical industry.



*13 of top 15 pharma companies have operations in Ireland*



**Trinity College has opened a US\$6 million Bioengineering research center, which will look to find cures for arthritis and osteoporosis.**



Ireland, knowledge is in our nature™

**IDA IRELAND**

Some of the other biotechnology research centers that have been established in Ireland include the Alimentary Pharmabiotic Centre in Cork, the Biomedical Diagnostics Institute in Dublin and the Regenerative Medicine Institute in Galway.

The broader pharmaceutical industry in Ireland has seen significant growth in recent years. Seventeen thousand people are directly employed in the industry and it accounts for over \$35 billion of exports. Thirteen of the top fifteen companies have operations in Ireland and six of the top ten drugs in the world are manufactured here.

Over the last number of years, Ireland has secured over \$5 billion of investment in biopharmaceuticals from companies such as Amgen, Centocor (J&J), Wyeth, Pfizer and Genzyme.

The breadth of operations of these companies in Ireland is well illustrated by Pfizer, which operates six manufacturing sites plus a corporate bank and a European financial center. Novartis has its global procurement center for API in Ireland and Merck operates a Centre of Excellence in originating, designing and managing European clinical trials in Ireland.

The Irish biotechnology sector is likely to grow rapidly, as the world's largest biotech company, Amgen, will invest more than \$1 billion in a new facility in Cork. Wyeth has built a \$1.8 billion BioPharma campus in Dublin, making this one of the largest biopharmaceutical manufacturing plants in the world.

IDA Ireland has also recently gained a planning permit for a fully integrated biotechnology facility in Galway. This blueprint will accelerate the process of moving from concept to full production by about around a year. The planning permit specifically provides sufficient design and layout flexibility for the needs of any biotech or pharmaceutical company.

### **Irish companies at the forefront of innovation**

Elan Corporation is the granddaddy of the Irish biotech sector, despite originating in a garden shed in Dublin over thirty years ago. Elan has grown to a point where

it is a leader in drug delivery technology and pharmaceutical research. It operates globally, employing almost 2,000 people in ten offices on three continents, with a focus on multiple sclerosis and Alzheimer's disease. Elan is also studying other neurodegenerative diseases, such as Parkinson's disease.

Trinity Biotech has recently been expanding in Asia and Africa, where it holds almost one third of the HIV testing market. The company has manufacturing plants in the US and mainland Europe, as well as Ireland. Their wide lines of test kits are used to detect infectious diseases, sexually transmitted diseases, blood coagulation disorders and autoimmune diseases.

Biotrin is divided into two areas; infectious diseases, which provides tests for the detection of new and emerging viruses; and biomarkers, which are used to assess organ and tissue damage. A key focus is on detecting a viral infection that can cause miscarriage in pregnant women.

**Wyeth Biotech in Ireland is one of the largest integrated biopharmaceutical campuses in the world and is the only facility in Europe to manufacture biopharmaceuticals, pharmaceuticals and vaccines within the same facility.**



# IRELAND'S GLOBAL RATING

## INTERNATIONAL RANKINGS PLACE IRELAND IN THE TOP FIVE

According to internationally recognised sources such as the Economist Intelligence Unit, the OECD, the Wall Street Journal and the World Competitiveness Report, Ireland has a very strong position in a wide range of global rankings in areas such as quality of life, economic freedom, education and open-mindedness.

### Ireland ranks **first** in the 2005 EIU Quality of Life Index

That's according to the Economist Intelligence Unit – Quality of Life Index 2005 which links the results of subjective life-satisfaction surveys to the objective determinants of quality of life across 111 countries.

### Ireland is the **second** most globalized country

According to A T Kearney Globalization Index 2005, which ranks political, economic, personal and technological globalization in 62 countries.

### Ireland is rated **second** in the number of science graduates per 100,000 25-34 year olds in employment

According to the OECD – EDUCATION AT A GLANCE 2005 edition. The OECD's annual compendium of comparative statistics provides the basis for policy debate and decisions in the world's most developed countries.

### Ireland is the **third** freest economy in the world

The Heritage Foundation & the Wall Street Journal – The 2006 Index of Economic Freedom measures 161 countries against a list of 50 independent variables divided into 10 broad factors of economic freedom.

### Ireland ranks **fourth** for the Educational system meeting the needs of a competitive Economy

IMD World Competitiveness Report 2006

### Ireland ranks **fifth** for university education meeting the needs of a competitive economy

IMD World Competitiveness Report 2006



### Irish universities at the forefront of research activity

There is strong emphasis on biotech research projects between Irish universities and industrial groups, as well as spin-off biotech firms being created from university research.

Dublin City University is working with pharmaceutical giant, Wyeth, on a four year project on the production of biopharmaceuticals. Other recent biopharmaceutical research projects with corporate links have seen investment by Medtronic, Procter & Gamble and Servier in research programs at Irish Universities.

Trinity College has opened a \$6 million Bioengineering research center, which will look to find cures for arthritis and osteoporosis. Spin-off firms from Trinity include Opsona Therapeutics, which is focused on identifying and developing new drugs and vaccines to treat and prevent autoimmune and inflammatory diseases. The company is working with Wyeth on multiple sclerosis and rheumatoid arthritis.

Other university spin-offs include Diabetica, Biancamed and Alimentary Health.

Diabetica was created to commercialize work from the Diabetes Research Group in the University of Ulster. It is believed that there are over 150 million reported cases worldwide and potentially an equal number undiagnosed.

Biancamed, which emerged from University College Dublin, focuses on sleep disorders. The company is also working on a 'Health Phone' which monitors fitness and activity, sleep analysis and heart rate.

Alimentary Health was formed from the work done at the Alimentary Pharmabiotic Centre based at University College Cork. It is focused on the discovery, development and commercialization of proprietary treatments for gastro-intestinal disorders and other inflammatory conditions. The company is particular focused on the development of probiotic technologies and products.

### Why invest in Ireland

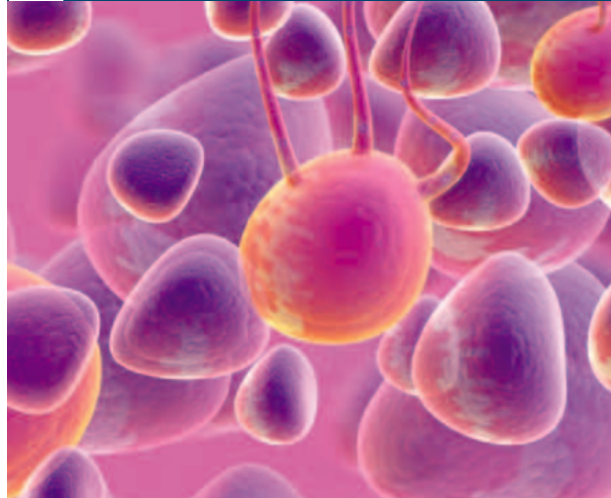
Ireland has established itself an enviable reputation globally as a location for advanced manufacturing, sophisticated business services and, increasingly, for leading research and innovation.

A significant number of leading multinational companies are drawing on Ireland's strengths to establish and expand complex integrated manufacturing operations, efficient supply chain management, R&D, advanced enterprise technical support and centralized European and global marketing functions. This includes companies such as Wyeth, J&J, Amgen, Genzyme to name a few.

Ireland provides these companies with a highly skilled and flexible workforce, top class management talent with international experience, and a pro-business environment.

WRITTEN BY STEVE WALLAGE

Trinity Biotech has recently been expanding in Asia and Africa, where it holds almost one third of the HIV testing market.





**The Irish mind.  
The key component in many of the world's  
leading life science companies.**

The Irish. Creative. Imaginative. And flexible. Agile minds with an almost unique capacity to initiate, and innovate, without being directed. Always thinking on their feet. Adapting and improving. Generating new knowledge and new ideas.

Naturally, this innate flexibility pervades the ecosystem. Nowhere else will you find such close and frequently informal links between enterprise, education and research facilities, and a pro-business Government. Connected by a dynamic information infrastructure.

It's this unique set of competitive advantages that has made Ireland one of the most attractive locations for investment by the world's leading life science companies.

The Irish mind, with its innate knowledge and flexibility, can be the pathway to profit for your business.

**To learn more, contact Eamonn Ryan, IDA Ireland, 345 Park Avenue, New York on 212 750 4300, e-mail [idaireland@ida.ie](mailto:idaireland@ida.ie) or log on to [www.idaireland.com](http://www.idaireland.com)**