



Introducing WuXi Biologics Ireland

WuXi Biologics, China's leading biologics medicine manufacturer, is to invest €325 million in a new biopharmaceuticals contract manufacturing facility in Dundalk, Co. Louth. Located mid-way between Dublin and Belfast, the facility will be less than an hour's drive from Ireland's two largest cities.

This highly significant investment will provide a valuable employment boost for the region, leading to the creation of 400 jobs when in full production. The jobs at the facility will range from manufacturing to technical and quality assurance roles as well as associated administration positions.

This represents WuXi Biologics' first ever manufacturing investment in Europe and marks the company's first investment of this scale anywhere outside of China.

When complete, WuXi Biologics Ireland will be the world's largest facility using single-use bioreactor technology. As the Site Head, I am intensely proud that WuXi Biologics has chosen Ireland for such a major investment.

This is a huge vote of confidence in this country. Among the reasons for the decision were the availability of a highly educated and talented workforce, the existence of an established cluster of world-leading biopharmaceutical companies, a world-class research base and the availability of a shovel-ready greenfield site in Dundalk, which will enable the facility to be ready for production during 2021.

All of us at WuXi Biologics eagerly await the challenge of developing this highly advanced new facility over the coming years. We look forward to becoming active members of the local business community and to making a positive contribution to the local and national economy in the years ahead.

Over the following pages you will learn more about WuXi Biologics and its investment in Ireland. However, should you require any further information please do not hesitate to contact us at Dundalk@wuxibiologics.com

Yours sincerely,

Brendan McGrath

Ireland Site Head and VP Manufacturing at WuXi Biologics

WuXi Biologics joins Ireland's life sciences community

World-class research facilities, a supportive business environment and a rich talent pool are just some of the factors that attracted WuXi Biologics to Ireland.

Why Ireland?

WuXi Biologics' Dundalk project is the company's first European manufacturing investment, representing a major vote of confidence in Ireland as a global hub for the fast-growing biotechnology industry.

To date, capital investment in Ireland by the global biopharmaceutical sector exceeds \$10 billion, most of which has been committed in the last 10 years. This is among the biggest concentrations of investment in biotechnology facilities anywhere in the world.

These investments have been attracted by Ireland's world-class research facilities and supportive business environment which are well-recognised for fostering innovation and growth. Alongside this, Ireland supports a thriving ecosystem of activity generated by the expansive clusters of multinational and indigenous biopharmaceuticals businesses operating around country.

Ireland's National Institute for Bioprocessing Research and Training (NIBRT) provides a global centre of excellence for training and research in bioprocessing. It offers world-class facilities and expertise to ensure the industry has a sustainable supply of suitable trained staff.

In addition, Ireland's population is one of the youngest and most highly educated in Europe, providing a rich pool of talent for the sector. Ireland's universities have strong cooperative links with the industry and work hard to ensure that skills needs are met.

Ireland's exemplary record in working with both national and international regulators - the US Food and Drug Administration (FDA) and the European Medicines Agency (EMA) among others - is another key element of what makes Ireland an ideal location for global pharmaceutical manufacturing.

The existence of a strategic site with pre-approved planning permission was key to the selection of Dundalk for this world-class facility. Its existence is the result of great foresight on the part of IDA Ireland which secured planning permission for a biologics facility on a strategic greenfield site outside of Dundalk some ten years ago.

Speaking at the announcement of the WuXi Biologics investment in Dundalk in April 2018, Dr. Ge Li, Chairman of WuXi Biologics said, "Over the course of many years, Ireland has built a very strong base for biologics manufacturing. We see talent here as well and that's why we chose Ireland."





I'm looking forward to growing our future together; 400 exciting jobs is just the start. Our goal is to make this facility one of our biggest biologics manufacturing sites globally. We are very committed to Ireland and we will make this facility a showcase for the global biotechnology community.

Dr. Chris Chen, CEO, WuXi Biologics

Why Dundalk?

Dundalk's location was an important factor in its selection for this exciting new investment. Its strategic location on the M1 motorway links it directly to Ireland's two largest cities, Dublin and Belfast, which are both less than 90 kilometres away. In addition, some of Ireland's largest towns, including Swords, Drogheda, Dundalk, Newry and Armagh, are within easy reach.

The key requirements of the international biopharma manufacturing industry include the availability of a highly-skilled workforce, a stable industrial and business environment, access to markets and suppliers through a sophisticated transport and logistics infrastructure, proximity to leading higher education institutions and the availability of a suitable site with the right support infrastructure.

Companies located in Dundalk are within easy reach of ten universities and higher education colleges, three international airports serving 290 destinations, an intercity rail service, an uncongested motorway, deep sea ports, a strong bio-pharma ecosystem and 35% of Ireland's young and highly educated workforce.

Employment opportunities

WuXi Biologics' €325 million investment is set to offer a host of employment opportunities. We anticipate that hiring for these roles will begin in 2020, to accommodate operations and production by 2021. As we begin to hire for WuXi Biologics in Dundalk, we will advertise positions through the appropriate channels to ensure that we attract well-qualified candidates with the skill-sets required by the various disciplines. As positions become available they will also be listed on www.wuxibiologics.com/careers/. The new jobs will include roles in:

- Project management
- Process sciences
- Technical services
- Commercial manufacturing
- Quality assurance
- Science and chemistry functions
- Administration and logistics functions
- Regulatory functions

WuXi Biologics

Headquartered in Wuxi, Jiangsu, China, with three sites located in Wuxi, Shanghai and Suzhou, WuXi Biologics is the main player in China's biologics services market. The company also holds leading market positions globally and is quoted on the Hong Kong Stock Exchange. WuXi Biologics works with 200 partners worldwide, including 13 of the 20 largest global pharma companies.

Ireland's 'Factory of the Future'

WuXi Biologics provides the only open-access biologics technology platform in the world offering an end-to-end biologics medicine production service. The Irish facility will be the company's first site to address the needs of biologics development in Europe and beyond.

Biotechnology is at the forefront in the development of a new wave of innovative diagnostics and therapies which are changing how diseases are prevented and treated. Innovation and new developments in the production of medicine have the potential to benefit millions of people worldwide, offering patients greatly improved, personally-tailored healthcare options.

With the advent of personalised medicine, manufacturing quantities for individual drugs are getting smaller and smaller. It is neither practical nor economic to manufacture small volumes of specialist medicines in traditional large-scale biotechnology facilities. Instead, the single-use technology pioneered by WuXi Biologics allows for small-scale and cost-efficient production of these important medicines.

WuXi Biologics is unique in that it operates the world's only open-access biologics technology production platform. This offers end-to-end solutions to partner organisations who use it to discover, develop and manufacture biologics medicines from initial concept through to commercial manufacturing. As a fully-integrated contract manufacturing platform company, WuXi Biologics provides its partners with the advanced capabilities, cutting-edge technologies and comprehensive solutions to enable them to develop innovative biologics medicine. WuXi Biologics' services are designed to accelerate the discovery and development process for biopharmaceutical drugs, while reducing the cost of production.

Development services

Utilising a wide variety of in vitro, in vivo, molecular and analytical methodologies, WuXi Biologics provides a full range of services to help clients take their products from development to commercialisation.

The company also offers assistance in the design of testing programs for regulatory acceptance worldwide.



WuXi Biologics offers the full spectrum of discovery services for the generation, characterisation and selection of high-potency, novel antibody therapeutics. The company's discovery platforms include systems for producing large numbers of identical antibodies, technology to connect proteins with the genetic information that encodes them and full analytical and assay development capabilities. With world-class research expertise, state-of-the-art technologies and access to proprietary methodology, WuXi Biologics can generate antibodies for a multitude of target conditions and help partner companies identify candidate drugs for the full spectrum of disease areas.



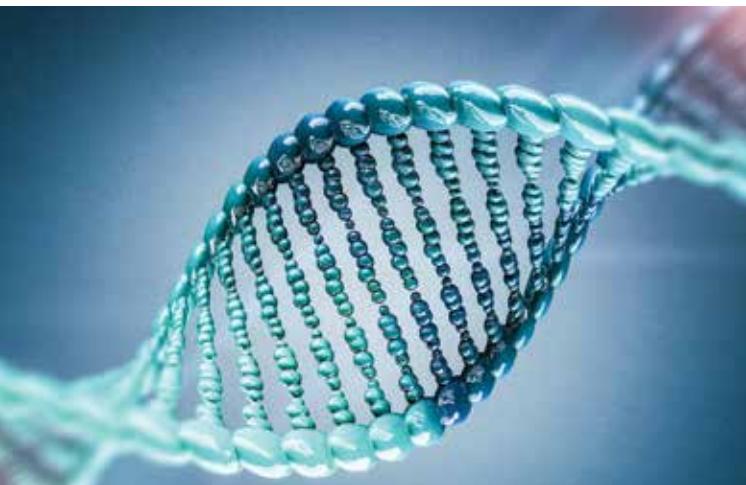


On a global scale, WuXi Biologics has built a biologics team of over 2,000 scientists and engineers. The company has also constructed the world's largest disposable bioreactor-based biologics commercial manufacturing facilities as well as one of the world's largest cell culture development laboratories. WuXi Biologics uses disposable bioreactors for batch-fed and perfusion.

WuXi Biologics offers comprehensive, integrated and highly customisable services to pharmaceutical and biotechnology companies through its teams of scientists, proprietary technology platforms and knowledge, state-of-the-art laboratories and world-class manufacturing facilities. The company's mission is to accelerate and transform biologics discovery, development and manufacturing to benefit patients worldwide.

The Irish facility will use bioreactors to manufacture biologics drug substances on a round-the-clock basis, with the ability to quickly switch product lines in response to customer requirements. By establishing a new facility in Ireland, WuXi Biologics will ensure that its innovative manufacturing technology is accessible to users around the world.

WuXi Biologics Ireland will be a critical component of the company's global biomanufacturing network and will ensure that biologics are contract-manufactured at the highest quality to benefit patients around the world.



What is Biotechnology?

Biotechnology has been with us through natural and cultivated processes since pre-historic times.

The main difference between traditional drugs and biopharmaceuticals is the method by which they are manufactured. Traditional medicines are produced through a process known as chemical synthesis, while biopharmaceuticals are manufactured in living organisms such as bacteria, yeast and mammalian cells.

Our ancestors discovered millennia ago that fruit juices could ferment into wine, that milk could be converted into cheese and that fermented solutions containing malt and hops could produce beer.

A bioreactor is a highly advanced version of the vessels used in the brewing process. The bioreactor acts like a fermenter by simulating a natural biochemical environment for the optimum growth of cells in a microbial or cell culture.

When applied to life sciences, biotechnology is used to duplicate or change the function of a living cell to make it work in a more predictable and controllable way.

Innovative biopharmaceutical medicines are now increasingly being used to treat a range of medical conditions including cancer and autoimmune diseases. Biotechnologists use this natural capability to develop innovative and effective medicines to treat illnesses and improve the provision of healthcare.

This approach is increasingly favoured over traditional chemistry methodologies because it is capable of producing more complex molecules for medicinal applications and it is also more efficient in terms of productivity, poses lower safety risks and leaves a lower environmental impact.

This new application of an ancient technology is helping millions of people around the world by enabling the development of new, innovative diagnostics and therapies that are changing how many human diseases are treated and prevented. Everyday, biopharmaceuticals are leading to improved treatments for millions of people worldwide.

Single-use technology and the ‘Factory of the Future’

The proposed design of the new facility reflects best-in-class industry practice and represents a step change towards the ‘Factory of the Future’ concept. The project will use innovative technology optimised for the flexible production of multiple biologic drugs for multiple customers, using single-use disposable reactors, scale-up and scale-out systems and perfusion technology.

Single-use bioreactors are widely used in the biotechnology field. Instead of culture vessels made from stainless steel or glass, a single-use bioreactor involves a permanent structure which holds a highly specialised disposable bag. The bags are safely disposed of following each manufacturing run, thereby greatly reducing the use of chemicals for the cleaning of traditional stainless steel or glass vessels, speeding up the rate at which different products can be produced by the same facility.

This is expected to result in higher productivity and significantly lower costs for cell culture-based biopharmaceuticals manufacturing.

WuXi - the city

Wuxi (Chinese: 无锡) (pronounced Wooshie), from which the WuXi Biologics business took its name, is a city in southern Jiangsu province, China, approximately 130km from Shanghai. The city has a population of 8 million and a rich heritage going back over 2,000 years.

The system delivers performance comparable to stainless-steel bioreactors of similar scale and can be fully customised for different products. This results in higher cell-culture productivity and faster process transfer and scale-up.

Using large volume, single-use bioreactors greatly enhances commercial manufacturing potential by allowing not only scale-out of capacity but also scale-up and flexibility for supplying multiple products and customers. In addition to the flexibility and time to market benefits of single-use manufacturing, clients gain economies of scale which can address their full range of biologics supply needs, from kilograms to tons.



Clinical and commercial manufacture

WuXi Biologics currently supports over 200 companies worldwide, including 13 of the global top 20 pharmaceutical companies. The company continues to forge strong relationships with customers, from start-ups and small to mid-sized biotech businesses to global pharmaceutical companies.

The results of these partnerships have paved the way for many drug candidates which are now undergoing clinical trials to treat various diseases, including many previously unmet medical needs.



Welcome



"The WuXi Biologics investment represents the start of something very special for Ireland and Dundalk. The significance of this project cannot be overstated. It is the first ever sizeable greenfield project from China in the pharma sector and it will hopefully pave the way for many more. It is also provides further evidence of Dundalk's emergence as a hub for knowledge based industry."

An Taoiseach, Leo Varadkar



"This WuXi Biologics investment is a great vote of confidence in Ireland and the North East Region in particular. This new, world-class biologics manufacturing facility will be a tremendous boost to the town of Dundalk and to our fast growing biopharma industry. It will also deepen the growing partnership between China and Ireland."

Heather Humphreys TD, Minister for Business, Enterprise and Innovation



"Having announced this project in April, I'm delighted to see the progress being made by WuXi Biologics to bring this project to fruition. As I've said, this investment is a significant win for Ireland and for the BMW (Border, Midland and Western) Region particularly as it is WuXi Biologics' first manufacturing facility outside of China. It also shows that our strategy of market diversification is working. WuXi Biologics is a strong addition to Ireland's growing cluster of next-generation biopharmaceutical companies and it will be an excellent reference seller for new greenfield Asia Pacific Investment into Ireland. IDA Ireland is delighted to support this project and I wish the company every success in Ireland."

Martin Shanahan, CEO, IDA Ireland



"The decision to locate this facility in Ireland is further evidence of Ireland's key position within the global biopharmaceutical sector. WuXi Biologics, China's leading biopharma firm is developing a rapidly growing global footprint. The fact that the company chose Ireland for its first European investment is a very strong signal to other Asian biopharma companies considering expansion into Europe."

Matt Moran, Director, BioPharmaChem Ireland



"This is fantastic news for Dundalk and Co Louth. The development of this new state-of-the-art facility will put Dundalk at the heart of Ireland's biopharma industry and will position us well to attract further investments from the sector."

Pat McCormick, President, Dundalk Chamber of Commerce



"WuXi Biologics' decision to locate its factory of the future in Dundalk is a vote of confidence in this country's ability to compete with the very best in the global biopharmaceutical sector. The availability of a highly qualified and highly skilled workforce and strong skills-training capability through our education system, through NIBRT and others is a key component in that competitive offering. We look forward to working with WuXi Biologics to meet its skills needs in the coming years."

Dominic Carolan, CEO, NIBRT

Local Leadership



Brendan McGrath has been chosen to lead the WuXi Biologics facility. A native of Mullingar, Brendan is an accomplished pharmaceutical

executive with extensive senior leadership experience in the global pharmaceutical industry.

A graduate of NUI Galway and Dublin Business School, Brendan began his career in the electronics sector with Motorola before moving into aviation with Aerospace Technologies. His pharmaceutical career began in 2002 when he moved to Organon in Swords which later became MSD. He worked in MSD until 2017, most recently as plant manager.

"This is a very exciting opportunity and a great achievement for Ireland because WuXi Biologics is one of, if not the leading, biologics contract manufacturing organisations in the world", he says. "The fact that WuXi Biologics chose Ireland is recognition of where Ireland is seen in the global pharmaceutical sector."



Questions Answered



What is WuXi Biologics?

WuXi Biologics is China's leading biologics medicine manufacturer. Headquartered in the city of WuXi, just under two hours from Shanghai, the company is listed on the Hong Kong stock exchange and is a global biologics services provider that offers comprehensive, integrated and highly customisable services. The company offers multinational pharmaceutical and biotechnological companies end-to-end solutions, empowering them to discover, develop and manufacture biologics from concept to commercial manufacturing.

What is being proposed for Dundalk?

WuXi Biologics plans to construct a new €325 million biopharmaceuticals contract manufacturing facility in Dundalk. The facility will manufacture the latest generation of biologics medicines on contract for pharmaceutical companies from around the world.

Why is the investment so significant?

This represents WuXi Biologics' first manufacturing investment in Europe and only its second outside of China. This development places Ireland in a good position for attracting future investment from both WuXi Biologics and other major Chinese companies seeking a gateway to the European market.

Why was Dundalk chosen for the investment?

IDA Ireland is committed to bringing foreign direct investment to the regions and its success in bringing WuXi Biologics to Dundalk reflects this policy. Located on the M1, halfway between Dublin and Belfast, Dundalk has easy access to ten leading higher education institutes, a highly qualified and skilled talent pool and is close to major international connections via Dublin Airport, Dublin Port and other ports along the east coast. In addition, the Dundalk site also had planning permission in place for a biologics facility.

What will it mean for Dundalk?

In the short term it will mean the creation of several hundred construction jobs and a high local spend arising from the overall investment. In the medium to longer term it will mean the creation of 400 high value jobs. It will also place Dundalk in a good position to attract further investments to the region.

Where can I apply for a position with WuXi Biologics?

It is anticipated that hiring will commence in 2020. As positions become available, they will be listed on www.wuxibiologics.com/careers/ as well as on other Irish recruitment channels and in the media.

Thank you for your interest in WuXi Biologics. We look forward to working with our Irish and international stakeholders to build a world-class contract manufacturing biopharma campus in Dundalk to produce medicines for international markets.

WuXi Biologics
Global Solution Provider