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A hothouse of medical research

Our writer reports on the fruits of the North West region's successful campaign to woo biotech firms

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More than 50 years of biotech history have left their mark in the North West. The region recently set out to become as hospitable as possible to high-tech and biotech companies, which is now paying off.

One high-tech facility, the National Biomanufacturing Centre (NBC) at Speke, near Liverpool, has attracted many small companies and start-ups. It opened last year to help scientists with bright ideas to make the transition to new medicines. "There has been much interest from countries such as Canada and Australia that want to emulate what the UK has done to get a similar service," says Dr Derek Ellison, business development director for Eden Biodesign, the centre's operator.

For most young companies funding is the number one hurdle to commercial exploitation. Venture capitalists are reluctant to invest without proof that the product works. Ellison says: "Small companies face a chicken-and-egg situation. Investors want data but there is no data without investment." Now they can apply to the North West Regional Development Agency for grants of up to £68,000 to use Speke's facilities.

The NBC project is the result of £34 million of public money. A £3 million investment of government money helped to spearhead the development. Dr Linda Magee, who leads Bionow, the North West Regional Development Agency's biotechnology programme, says: "That the DTI committed at an early stage was pivotal for the rest of the project." Eden BioDesign has contributed £2 million to the upkeep.

Building work started in 2004 on a 60,000sq ft plot on the Estuary Commerce Estate near Liverpool. Its state-of-the-art facilities are designed to tackle many biopharmaceutical products from molecules to whole cells, mammalian, microbial or viral. By last summer the equipment was installed and validated to comply with EU and US quality guidelines for clinical material. The NBC was ready to go.

Onyx Ltd was first to take advantage of the NBC services to pursue a new vaccine to treat ovarian cancer. The London company, with financial support from the Access Fund, approached the centre to grow cells for use in its tests.

Dr Stephen Ward, head of process development, says: "The cells that are given to the patients stimulate their immune systems to control the spread of cancer. Companies like ours need access to specialist manufacturing services to produce this material."

At the University of Liverpool, Dr Roger Barraclough and collaborator Professor Philip Rudland have identified a protein that prompts cancer cells to spread to other parts of the body. This is an important discovery because this protein might, in the long-term, prove a suitable target for therapy, to halt the metastatic spread of breast tumour cells.

Barraclough also foresees more immediate clinical applications for this key protein. "It could become a marker for disease, to allow doctors to diagnose cancer more accurately."

To study the protein in more detail, the researchers needed large quantities of a specialised molecule. He says: "We gave the NBC the biological materials it needed and it scaled up the production."

As conventional antibiotic drugs lose the fight against infections, bioprospectors are trawling the oceans in search of useful new compounds. The Biotech firm Aquapharm, from Oban, Scotland, is now developing one of the first marine pharmaceuticals to fight drug-resistant microorganisms, including the notorious hospital "superbug".

Dr Dorothee Gotz, R&D manager at Aquapharm, says: "We are running out of antibiotic agents for hospital-acquired pathogens, so the need for new anti-infectives is urgent." The biotech firm harvests antibiotic-producing bacteria from open waters, marine sediment, seaweed, or by scraping off surface slime from rocks.

A highly promising marine antibacterial protein has entered development at the NBC. "Eden Biodesign has taken over the job of growing cells and isolating the enzyme. They are supplying us with big amounts to test to see if it is a viable product," says Gotz.

Sugar therapeutics could advance the fight against Alzheimer's disease, says Dr Bill Primrose, chief executive of IntelliHep.

With Eden Biodesign's strong manufacturing expertise, the Liverpool start-up is tweaking heparin, a blood-thinning sugar, into a new therapy for Alzheimer's disease.

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