

Britain / Quotient Therapeutics

## What a buzzy startup reveals about Britain's biotech sector

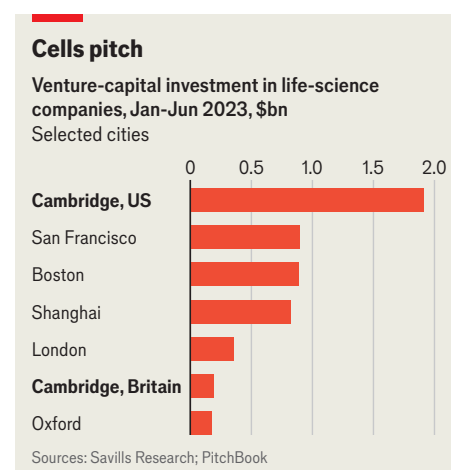
### Lots of clever scientists, not enough business nous

Over the past century, two breakthroughs have changed the course of biology most. Both were Anglo-American efforts, propelled by Cambridge laboratories. First came the unravelling of the double helix by scientists including James Watson (an American) and Francis Crick (a Brit). Then came the Human Genome Project, which mapped the genetic code that acts as an instruction manual for human beings. That project was led by Americans, but the largest contribution came from Cambridge's Sanger Institute, which sequenced a third of the billions of letters of code. These advances transformed the way scientists understand disease.

Quotient Therapeutics, a biotech company founded in 2022, hopes to take this transatlantic model and commercialise it. Its main research lab is in Great Chesterford, a village just outside Cambridge, England. Its commercial headquarters is in Cambridge, Massachusetts. The company is among dozens spun out by Flagship Pioneering, an American venture-capital firm which also incubated Moderna, a trailblazer in covid-19 vaccines based on mRNA technology. Its aims—to revolutionise treatment for a spectrum of diseases—are no less ambitious. The company also neatly illustrates the strengths and weaknesses of Britain's biotech sector.

The country's strengths in scientific research remain obvious. Quotient is a pioneer in the study of the genetic changes that occur within the trillions of cells in the human body over a person's lifetime, a field known as somatic genomics. One of its co-founders is Professor Sir Mike Stratton, who led the Sanger Institute's Cancer Genome Project. Sir Mike's team discovered that melanoma,

a type of skin cancer, could be caused by mutation in a gene known as BRAF. By inhibiting the protein that this mutated gene produces, says Sir Mike, an "untreatable cancer was turned into a manageable one". Now, using the latest technology, the team hopes to do the same with mutations in normal tissues which may drive other diseases.



The findings of this kind of analysis could be hugely valuable to pharmaceutical firms. Drugs generally work best when they have a specific molecule within the body to target. In clinical trials only about one in ten drugs are ever approved by regulators. But a recent paper by Eric Minikel of the Broad Institute, a genomics-research centre, and his colleagues found that they are 2.6 times more likely to succeed when there is genetic evidence underpinning how they might work.

Yet the involvement of Flagship speaks to a commercial savvy that is missing in Britain. Much comes down to the deeper and more educated capital pools and

greater appetite for risk in America. The two Cambridges are similarly matched for research output, but life-sciences firms in the American city raised nearly ten times as much venture-capital investment as their British counterparts in the first half of 2023 (see chart). Flagship, which raised \$3.6bn in a funding round that concluded in July, is now looking for more opportunities abroad. The incubator recently opened offices in London and Singapore; Quotient was its first foreign venture. "We're bringing Cambridge MA to Cambridge UK," says Jake Rubens, Quotient's boss.

Flagship approached the Sanger scientists after scouring the literature for promising ideas. "If we'd had to develop a company ourselves, we would never have done it," says Iñigo Martincorena, a researcher at Sanger. Helped by the American incubator's connections, Quotient has already secured a deal to supply Pfizer, a pharma giant, with drug targets for renal and cardiovascular diseases. Dr Rubens expects the firm to create its own pipeline of new therapies.

Somatic genomics is not the only new kind of analysis with potential. On January 10th UK Biobank, a research body, announced the largest-ever study to use proteins to find new drug targets, backed by a consortium of 14 pharma firms. Most biotech firms fail before producing a drug. Yet so far Quotient has managed to mix British scientific ingenuity with American commercial nous. In the next two years Dr Rubens hopes to launch a host of new drug programmes, including for autoimmune diseases, cancer and respiratory illnesses. "There's no realm of human health and disease that somatic genomics won't be able to touch," he says. ■