The race to unravel the human genome

Emma Whitelaw

The Common Thread

by John Sulston and Georgina Ferry

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The Common Thread is the story of the race to sequence the human genome. John Sulston, director of the Sanger Centre in Cambridge and the Human Genome Project in the UK, and science journalist Georgina Ferry have produced a book with all the elements required to keep a reader happy: a good story, goodies and baddies, big money and big politics.

The book retraces the decision by a few individuals to start such a bold project, the ensuing battles to obtain funding from governments throughout the world and the panic caused by the sudden announcement that a private company was entering the race. 'As they gathered at Cold Spring Harbor on 12th May, 1998 for the annual symposium on genome

mapping and sequencing, the leaders of the Human Genome Project were in various stages of shock, anger and despair,' Sulston states in the book. Why did it matter so much? Because the private company, Celera, wanted to patent some of the sequences, which would mean that advances arising from the work, such as diagnostic tests and possibly even cures for certain inherited diseases, would be under their control. Their stated aim was to become 'the definitive source of genomic and associated medical information.' Jim Watson, coordinating the US government-funded sequencing effort, believed that Craig Venter, the head of Celera, 'wanted to own the human genome the way Hitler wanted to own the world.' Despite attempts by Celera to persuade the US government to pull the plug on the publicly funded projects, the latter continued and at a faster pace. The scientists running these projects had agreed some years earlier that any sequence obtained that was believed to be reliable would be made available to anyone via the Internet. They felt that this was the best way to avoid any attempt to patent some of the sequences, a concept loathed by Sulston.

The financial cost of the project was going to be high. In 1986, when the idea was first mooted, it was estimated that it would cost US\$3 billion. Many scientists were horrified since this would essentially use up all the public funds normally allocated to biological research over the next 4 or 5 years. Those pushing for the project realised that separate funds were going to have to be found. Fortunately, the idea appealed to the US Congress and they agreed to set up a National Center for Human Genome Research with an annual budget of US\$60 million. The governments of other countries, in particular the UK, followed suit. In the end, it was the Wellcome Trust that funded the majority of the British effort. The cost, so far, has

been considerably less than the initial estimates. Nevertheless, it was the first time that really large sums of money were being channelled into biology out of the public purse.

And biology had finally become politically important too; both the US President, Bill Clinton, and the British Prime Minister, Tony Blair, spoke at the press conferences held in Washington and London to announce that the draft sequence was complete. On that day in June 2000, Celera published its findings in *Science* and the publicly funded consortium published its findings in *Nature*. Most of us somehow got the impression that Celera had won the race, but it is made clear in the book that this is far from the truth. First, neither side at that stage was even claiming that they had more than 90% of the sequence and with Celera not even releasing their data, despite publication in *Science*, it was pretty hard to know how much they really had. What the authors conclude is that Celera was better at issuing press releases than the government-funded consortium.

This is a perfect book to give to anyone working in the science or health industry. No matter how detailed or how scanty their knowledge is of the Human Genome Project, they will find it interesting and readable. I thoroughly enjoyed it. The chatty, personal style in combination with the importance of the issues raised made it hard to put down. It is also a book worth adding to the reading list for undergraduates studying molecular biology and medicine. It leaves you with the feeling that molecular biology is a field that really matters, and that those who have paved the way were basically men of honour.

Emma Whitelaw is at the University of Sydney, Australia.

E-mail: e.whitelaw@biochem.usyd.edu.au

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