

HEALTH CARE

Drug firm seeks genome bounty

AstraZeneca aims to scan two million genomes in hunt for rare sequences linked to disease.

BY HEIDI LEDFORD

One of the world's largest pharmaceutical companies has launched a massive effort to compile genome sequences and health records from two million people over the next decade. In doing so, AstraZeneca and its collaborators hope to unearth rare genetic sequences that are associated with disease and with responses to treatment.

It's an unprecedented number of participants for this type of study, says Ruth March, vice-president and head of personalized health care and biomarkers at AstraZeneca, which is headquartered in London. "That's necessary because we're going to be looking for very rare differences among individuals."

To achieve that, AstraZeneca will partner with institutions including the Wellcome Trust Sanger Institute in Hinxton, UK, the Institute for Molecular Medicine Finland in Helsinki and Human Longevity, a biotechnology company

founded in San Diego, California, by genomics pioneer Craig Venter. AstraZeneca also expects to draw on data from 500,000 participants in its own clinical trials.

In doing so, AstraZeneca will be following a burgeoning trend in genetics research. For years, geneticists pursued common variations in human DNA sequences that are linked to complex diseases such as diabetes and heart disease. The approach yielded some important insights, but these common variations often accounted for only a small percentage of the genetic contribution to individual diseases.

Researchers are now increasingly focusing on the contribution of unusual genetic variants to disease. Combinations of these variants can hold the key to an individual's traits, says Venter.

AstraZeneca did not disclose exactly how much it would be investing — "hundreds of millions of dollars" over the course of ten years was all that Menelas Pangelos, executive vice-president of the company's innovative medicines

programme, would say. The company intends to use the data to inform drug development in all of its major disease areas, from diabetes to inflammation and cancer, says March.

Genomicists have long promised that their field would revolutionize drug development, says David Goldstein, a geneticist at Columbia University in New York City who advises AstraZeneca. Now, he says, "we finally have really turned a corner and genomics really will now become central in drug development". ■

CORRECTION

The News Feature 'Monkey Kingdom' (*Nature* **532**, 300–302; 2016) wrongly affiliated Erwan Bezard with INSERM — he is actually director of the Institute of Neurodegenerative Diseases at the University of Bordeaux. It also referred to Liping Zhang instead of Liping Wang.