Low-cost DNA test to pinpoint risk of inherited diseases

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An inexpensive, fast, accurate DNA test that reveals a person's risk of developing certain diseases is expected to become a reality, thanks to technology developed at the University of Edinburgh.

Scientists have developed a method of pinpointing variations in a person's genetic code at critical points along the DNA chain. The technique could be used to analyse DNA in a drop of saliva.

Tiny differences or omissions in DNA code can determine whether or not a person is healthy, susceptible to disease, or has a serious or life-threatening condition, such as cystic fibrosis. The technology seeks to enable improved personal diagnosis, allowing prompt, appropriate treatment for patients.

The method, based on chemical analysis, delivers reliable results without the need for expensive enzymes used in conventional DNA testing. Researchers behind the technology will soon test whether it can decode entire human genomes. The study, published in the journal Angewandte Chemie, was funded by Scottish Enterprise.

Dr Juan Diaz-Mochon of the University's School of Chemistry, who led the research, said: "This technology offers a speedy, cost-efficient alternative to existing methods of DNA analysis. The market for DNA testing is quickly expanding as it becomes more affordable. Our method could help reach the goal of complete genome analysis in a few hours for less than $1000."

Professor Mark Bradley of the University's School of Chemistry, who also took part in the study, said: "We plan to test the technology further, extend our collaborations with leading researchers and companies in the DNA sequencing field and establish our first commercial operations within the next six months."

Provided by University of Edinburgh

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