New European Research Council grant for Max Planck Researcher

The European Research Council is funding a large-scale proof-of-concept study on a new genome sequencing method called “Haplotagging”. Haplotagging is a new method for sequencing our genome with superior quality and faster speed, developed by group leader Frank Chan and his team at the Friedrich Miescher Laboratory at the Max Planck Campus, Tübingen, Germany. With the ERC's 150,000 euros "Proof of Concept” grant, high-quality genome datasets from 2,000 patients will be generated to help move the idea from academic research to market. The expected results have the potential to revolutionize the booming DNA testing industry.

Every European born today may have their genome sequenced at some point in their lifetime. One day, getting your DNA tested could be part of your routine check-up and might radically improve individual healthcare and our understanding of our own bodies.

Haplotagging may revolutionize genome sequencing

With the help of modern sequencing methods, it is now possible to determine the entirety of all genes in an organism within a single day. The problem is the resulting puzzle of millions of short gene segments that are initially scrambled in the output of the sequencing. They first have to be ordered, which takes money and time, and is a big source of errors. This problem could be solved in the future with the help of the haplotagging method, which the research team led by Frank Chan developed in 2020 with support from the ERC.
Chan's method can trace genomic data quickly and accurately with superior quality. “With this new technique, the configuration of the DNA is marked and preserved before it is broken up for genome sequencing. This is like numbering puzzle pieces on the back before breaking up the puzzle,” explains Chan. “Its importance cannot be overstated because it addresses a key shortcoming of the currently dominant sequencing technology,” he adds.

An enormously complex project for a single research group

In a pair of pilot studies published in 2021, Frank Chan and his team were already able to show that haplotagging can deliver excellent results at a fraction of the current effort and costs. “We have already solved a series of molecular engineering and computational challenges that have stumped far larger parties,” Chan states. With the "ERC Proof of Concept" funding, he and his team will now conduct a major, ambitious study which will generate high-quality datasets from 2,000 human genomes. For a single research group, this is an enormously large-scale and complex project. The study should lead to further insights into the method in order to make it marketable for industry and research, in the hope of soon establishing it as the new gold standard for genome sequencing.

Proof-of-concept funding from the European Research Council

The "ERC Proof of Concept" provides seeding funding to open up a path for new ideas towards the market. The grant applies to ideas that have been developed within a previous ERC-funded project and are now to be further evaluated for potential application in industry and research. The funding amounts to 150,000 euros for a duration of 12 to 18 months.

Press release

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