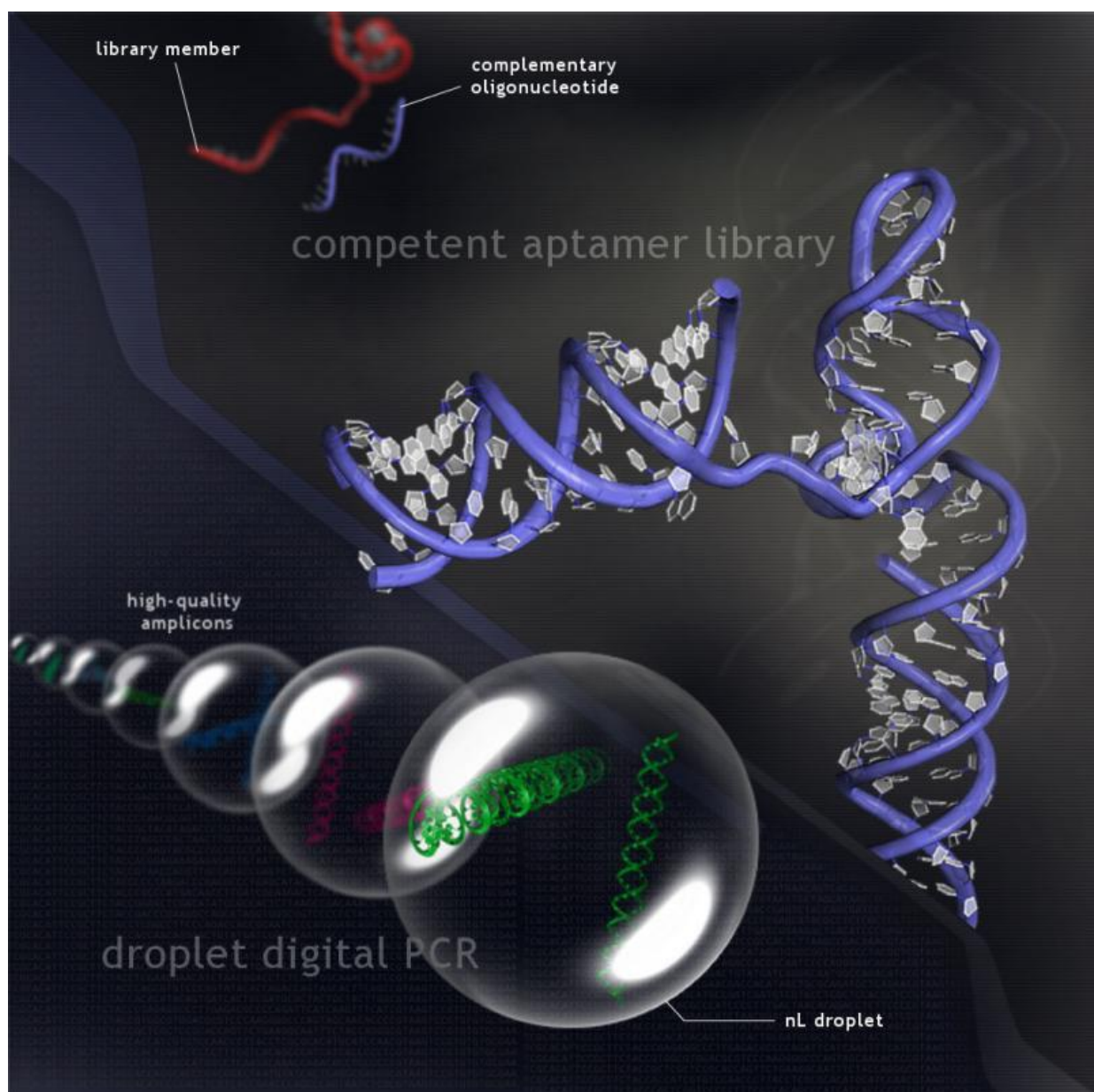


New clinical platform may accelerate discovery of diagnostic and therapeutic agents

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Credit: Julius Csotonyi

Researchers at University of British Columbia have developed a new technology that enables rapid discovery of aptamers, one of the fastest growing classes of diagnostic and therapeutic agents. Aptamers are short sequences of genetic material that fold into precise 3-D structures that bind target molecules and inhibit their biological functions.

In a recent *Biotechnology and Bioengineering* article, the investigators describe their aptamer selection platform, called high-fidelity systematic evolution of ligands by exponential enrichment (Hi-Fi SELEX), that accelerates and improves selection of DNA aptamers by ameliorating several limitations of current methods used for aptamer [discovery](#). The platform is engineered to greatly enhance the diversity of the starting collection of aptamers and the ability to rapidly enrich aptamers of therapeutic relevance, while also enabling their high-fidelity amplification and regeneration.

"As a technology development lab, we looked under-the-hood of available aptamer discovery platforms to determine precisely why they often do not yield functionally or therapeutically useful reagents. Through that effort we identified a number of issues that greatly limit performance and then worked to ameliorate those impediments using a combination of chemical modification methods and advanced enzymatic and processing strategies available in our labs," said senior author Dr. Charles Haynes. "One of the great strengths of the resulting Hi-Fi SELEX platform is its ability to enhance the functional diversity of the library, which greatly improves the odds of discovering useful molecules."

More information: Ouellet, E., Foley, J. H., Conway, E. M. and Haynes, C. (2015), Hi-Fi SELEX: A high-fidelity digital-PCR based therapeutic aptamer discovery platform. *Biotechnol. Bioeng.*. [DOI: 10.1002/bit.25581](https://doi.org/10.1002/bit.25581)

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