DISPENDIX
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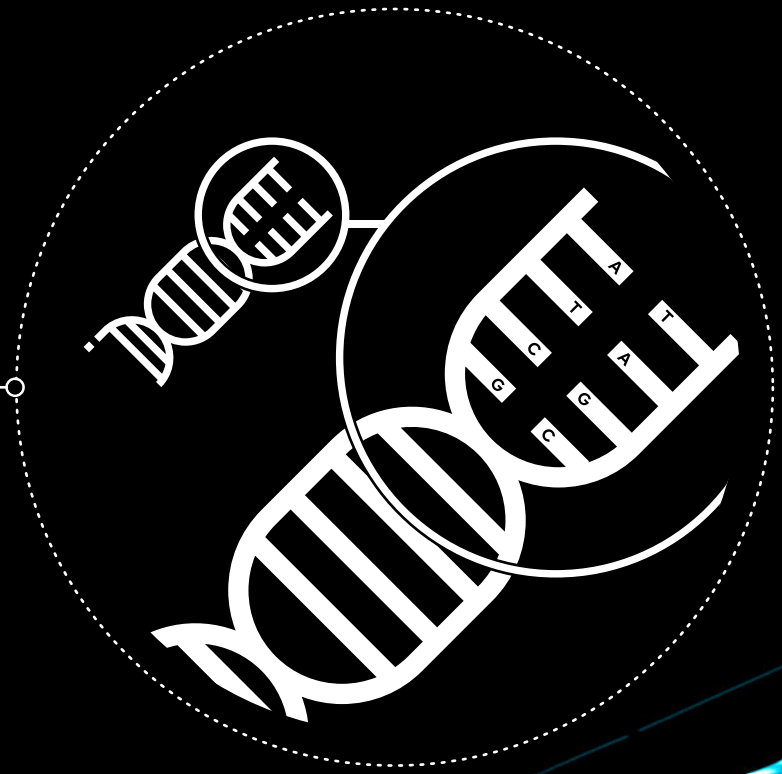
Tips to Improve NGS Library Preparation



Tips to Improve

NGS Library Preparation

A high-quality DNA fragment library is essential for next-generation sequencing (NGS). A smart effort to improve the former is time and energy well spent, as it yields better sequencing results than NGS libraries. With PCR-based library prep kits, the process of creating excellent libraries is simplified. Different kits are optimized for different situations, such as sample types or levels of automation. First, navigating around the potential pitfalls that necessitate the inevitable "re-do's" can be frustrating. These tips to improve your NGS library prep and which speed your way to better libraries and NGS data.

1.

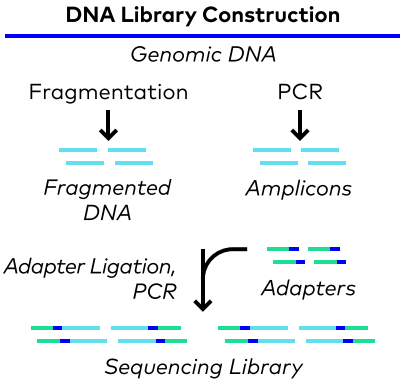
High quality DNA/RNA in

To create an NGS library, you need to start with a pure and concentrated DNA sample. Make sure that your library prep kit can handle the type of sample, the input amounts, and the conditions of your experiment.

2.

Concentration and cycle optimization of PCR adapters

To use the library as a starting sample for NGS, the library needs to be amplified sufficiently. Over-cycling can lead to PCR bias, duplicates, and dimers. Optimize adapter concentrations to reduce adapter-dimer formation during PCR. As a result of additional cleaning steps, the library prep process becomes less efficient and samples are at risk of loss.

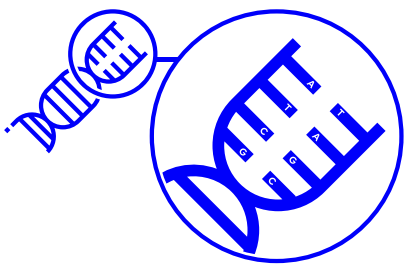


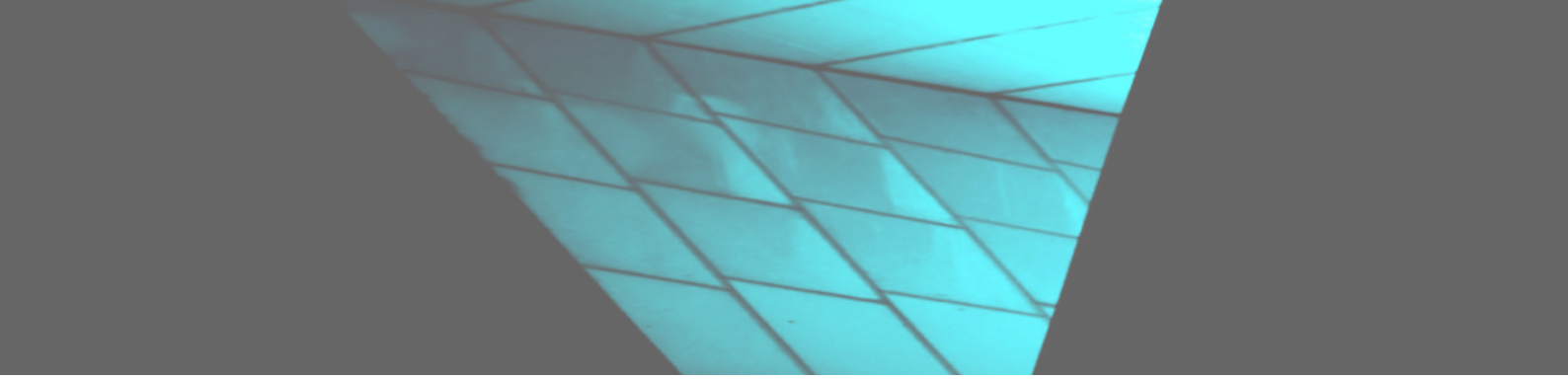
3.

Library QC and quantification

Data quality can be directly improved by assessing the quantity and quality of your NGS library. Quantification methods include qPCR, fluorometry, and electrophoresis.

The term library quality control refers to measurable parameters that influence the quality of NGS data. In addition to detecting, identifying, and measuring impurities, QC analyses measure library size distribution, complexity, and GC bias, verify insert size, and check for adapter dimer contaminants before sequencing.

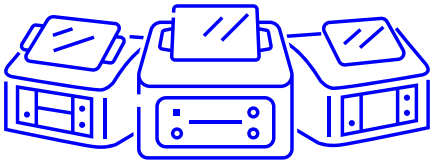




4.

G.STATION - Bring Accessible NGS Automation to Your Lab

G.STATION automates NGS library prep kit workflows and minimizes reagent waste and contamination, improves consistency, decreases manual time, and increases throughput. With an automated liquid handler with on-deck thermal cycling, shaking and temperature control coupled via novel bead-based clean up solution and enzyme dispenser will change the way you approach NGS library construction.

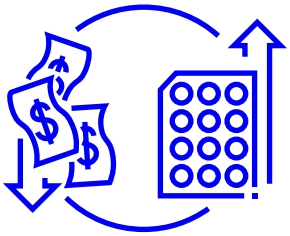


The G.STATION includes cloud-based software that allows users to simply choose a protocol, select samples, and runs a simulation before dispensing to reduce errors.

5.

Run More Samples for Less

The G.STATION uses a fraction of the pipette tip consumables required by traditional NGS automation decreasing you effective costs per library. With an optional 384 configuration, allows you to miniaturize library prep reactions driving down the cost of sequencing sample prep, so you can run more samples.



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