

RainDance Sequence Enrichment Service

General Information

Despite the ever-increasing capacities of Next-Generation Sequencing technologies, focusing on specific genomic regions is essential in order to address many scientific projects in a reasonable and cost-effective way.

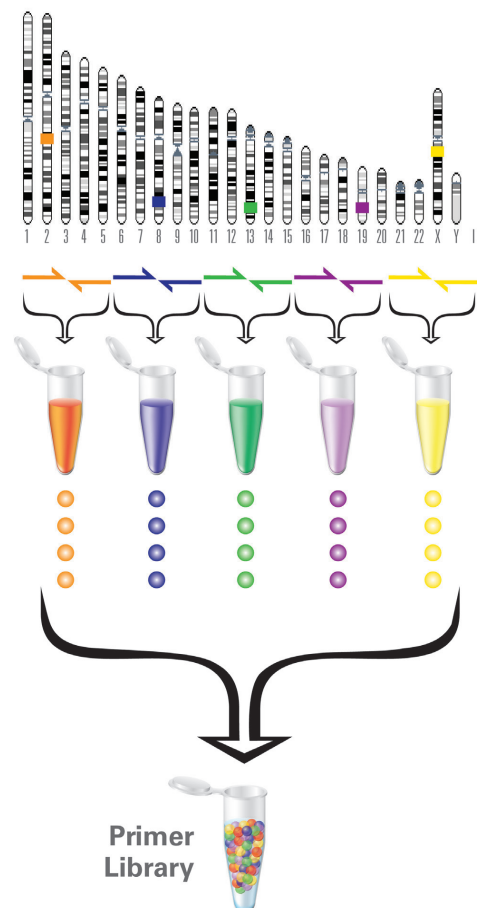
RainDance Droplet Technology (RDT) combines the simplicity, specificity and robustness of polymerase chain reaction (PCR) with a highly innovative microfluidic device. A library of up to 4,000 primer pairs is produced by generating microdroplets for each primer pair, which are subsequently pooled into a single droplet library emulsion. The primer pair droplets are then fused with droplets containing the genomic DNA template plus PCR reagents. One million microdroplets are produced in a single run, with each droplet serving as a reaction vessel for an individual PCR reaction. Up to 1.5 Mb of genomic sequence can be specifically enriched starting from just 2 micrograms of genomic DNA with very low sequence-generated bias.

Advantages of RainDance Droplet Technology

- Very high percentage of target bases covered by the design: up to 100%
- Very high percentage of target amplicons covered by sequencing: $\geq 95\%$
- Excellent uniformity of coverage: $>80\%$ of targets have less than 5-fold difference in Target representation

Service Range

- RainDance Sequence Enrichment Service is available for batches of 24/48/96 samples.
- ATLAS Biolabs covers the complete process from library design to the generation of enriched samples. The customer just needs to send genomic coordinates, RefSeq IDs, or Gene IDs, in order to start the design process. Design and library generation are adapted to the sequencing platform preferred by the customer.
- If requested, ATLAS Biolabs will also perform Next-Generation Sequencing of the enriched sample.





Quality control

ATLAS Biolabs is certified according to the international standard DIN EN ISO 9001:2008. Our processes are subject to rigorous quality control at all steps:

- Quality and quantity of each DNA sample sent to ATLAS Biolabs will be determined by agarose gel analysis and by photometric analysis. Samples which do not pass QC will not be processed.
- Numerous control steps are executed during library preparation, e.g. QC of successful DNA fragmentation, QC of successful linker ligation, etc.
- All quality assurance procedures are electronically documented and available for our customers on demand.

Sample Delivery

- The customer will receive a sufficient amount of enriched DNA to perform Next-Generation Sequencing on his platform of choice.
- The customer will be provided with a documentation of successful enrichment.

Timeline

- Library design: 1 week
- Production of PCR primer library: 6 weeks. Sequence enrichment: 2-3 weeks

Related ATLAS Biolabs Service

- Next-Generation Sequencing Service

