

On-Array DNA Capture

Services using Agilent's SureSelect™ technology
Any Organism, Any Next Gen Sequencing platform



Introduction

DNA Capture methods are simple, cost effective and highly robust alternatives to tedious and expensive multiple PCRs for enriching targeted genomic regions prior to Next Generation Sequencing (NGS).

Such capture methods complement massively parallel NGS technologies and enable researchers to sequence and analyze variations in specific genomic regions in a focussed manner across large number of samples in a very short period of time.

Genotypic offers On-Array DNA Capture Service using Agilent's Microarray based DNA Capture method (SureSelect™) and modifications successfully tested at Genotypic's Agilent certified microarray lab.

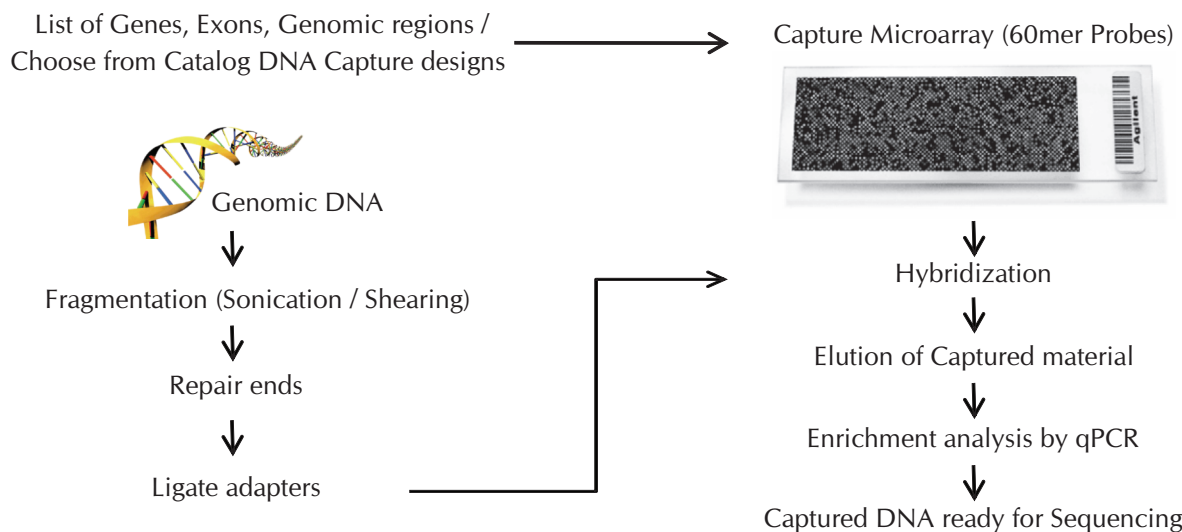
Sequence the regions that matter...

Targeted resequencing: SNP / Mutation discovery and screening, deep sequencing of genes, exons, promoters and genomic regions of interest.

Genotypic's On-Array Capture service

- Capture design and full service for any organism, any sequence (including capture of homologous genes and repeated sequences)
- Cost effective and compatible with Multiplexing, Indexing, Barcoding and Tagging
- Compatible with all major Next Generation Sequencing platforms (Illumina - Solexa, Applied Biosystems - SOLiD and Roche - 454)
- Catalog DNA Capture designs available for human and other organisms

On-Array DNA Capture Workflow



Catalog DNA Capture microarrays

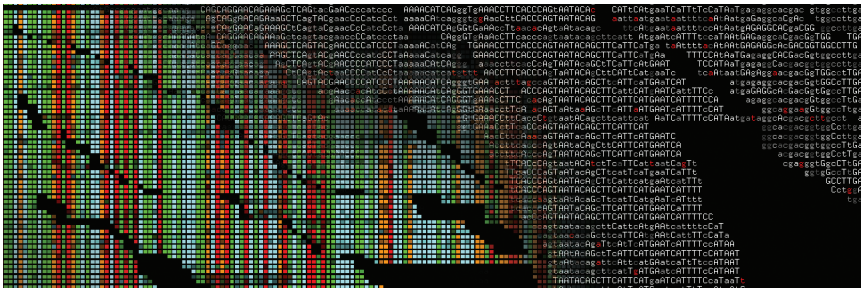
- ✓ Human Whole Exome (Covering > 250000 Exons)
- ✓ Human mi-RNA, Hepatic drug metabolism genes and cancer genes
- ✓ Designs for Mouse, Rat, Arabidopsis, selected mammalian and plant species

Send to Genotypic

Option1 : Genomic DNA

Option2 : Adapter Ligated Library

Optional - Next Gen Sequencing Services and Analysis



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About Genotypic

We provide high quality cutting edge genomics solutions to the global scientific community (academia and industry). R&D teams, partners, distributors and clients worldwide make use of Genotypic's services for a range of services from protocol optimization, probe design and project design to in-depth analysis.

We specialize in **pre and post-sequencing applications of microarrays** including On-Array DNA Capture, Genome-Genome Comparisons, Scan large genomic regions for similarities and dissimilarities, Confirm insertions and deletions(InDels) Contig Validations, ORF orientation and validations.

Genotypic for DNA Capture projects

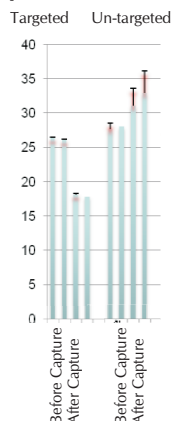
- Bioinformatics experts help design best probes for custom capture microarrays for any organism at any level of complexity
- Agilent Certified Service provider - First in the world to be certified for all major microarray platforms
- Complete ownership with the client and confidentiality of data
- Simplified sample shipping and data transfer procedures
- End to end service option: from Capture array design to sequence analysis.

Performance: SureSelect™ at Genotypic	
Enrichment of targeted regions by qPCR	~ 1000 Fold
Depletion of un-targeted regions by qPCR	~ 400 Fold
Sequence Reads mapping to targeted regions	58%
Targeted regions enriched	99.5%

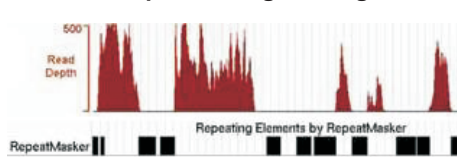
Deliverables
Capture microarray design file (.bed file loadable to genome browsers), probe coverage and quality control report
Report: Enrichment of targeted regions and depletion of un-targeted regions (qPCR)
Captured DNA ready for sequencing
Sequencing and Data Analysis (optional)

Enrichment Overview

qPCR- Ct values



Read depths at targeted regions



Read depth was computed by counting the number of reads at each individual base in the targeted region. Data visualized using genome browser.

References

- Bhattacharjee, A. et al. (2009) **Complementing Next Generation Sequencing Technologies with the Agilent Microarray-Based DNA Capture Method** - Application note: 5989-8700EN, Agilent Technologies
- **Array based Enrichment of Specific Genomic Regions** (2008) Application Note: SOLiD™ System, Applied Biosystems
- Garber K F et al. (2008) **Fixing the front end.** Nature Biotechnology 26, 1101 - 1104



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Agilent

Certified

Services Provider
Microarray-Based
Genomic Analysis

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Released 15 Feb 2009