The Archer™ Solution

The rapid decline in sequencing costs is creating a wealth of new opportunities for molecular detection in disease diagnosis, biomarker detection, drug discovery, and biomedical research. However, existing molecular detection technologies have not been sufficiently robust, scalable or cost effective to support broader adoption.

Archer’s Targeted Sequencing Technology, based on Anchored Multiplex PCR (AMP™), generates a highly enriched library of the targets of interest for downstream sequencing. The subsequent sequence data is analyzed by proprietary Archer™ software and presented in a final, readily accessible report. By capturing and amplifying only targets of interest, the technology enables dramatic enhancements in mutation detection speed, complex mutation identification and discovery, and reduced costs.

PRODUCT HIGHLIGHTS

- Identify gene fusions without prior knowledge of breakpoints or fusion partners
- Sensitive assay requires only 20ng of nucleic acid
- Simplified workflow minimizes hands-on time
- Compatible with Ion Torrent™ and Illumina® sequencing

APPLICATIONS

- Clinical research
- Mutation discovery and detection
- Companion diagnostics
- Biomarker discovery

www.enzymatics.com/archer
AMP™ Assay Workflow

The Archer™ workflow minimizes hands-on time. The total hands-on time for 8 samples is less than 70 minutes.

<table>
<thead>
<tr>
<th>Step</th>
<th>Hands-on Time</th>
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<tbody>
<tr>
<td>Random Priming</td>
<td>5 minutes</td>
</tr>
<tr>
<td>First Stand cDNA Synthesis</td>
<td>5 minutes</td>
</tr>
<tr>
<td>Second Stand cDNA Synthesis</td>
<td>5 minutes</td>
</tr>
<tr>
<td>End Repair/dA-Tailing</td>
<td>10 minutes</td>
</tr>
<tr>
<td>Adapter Ligation</td>
<td>15 minutes</td>
</tr>
<tr>
<td>First PCR</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Second PCR</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Quantitate and Sequence</td>
<td></td>
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</tbody>
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Instrument Compatibility

Archer™ assays and the Analysis Pipeline are 100% compatible with both Ion Torrent™ or Illumina® instruments, providing user flexibility for either platform.

Easy, Automated Analysis

Select FASTQ Files for Analysis  Name the Analysis  Select the Assay Type  Run Analysis

Multitiered Report

The Archer™ Analysis Pipeline generates a report of all mutations in the target sequences, and does not require any programming expertise.

Multiple levels of detail are provided, providing an overview of the mutations and readily allows the user to do a deep dive to review the sequence down to the single nucleotide level. Learn more about the Archer™ Analysis Pipeline at www.enzymatics.com/archer.
Inside AMP™

**AMP™ ADVANTAGE**

- Requires only tens of nanograms of total nucleic acid isolated from FFPE, fresh frozen tissue or blood

- Sample indexing enables samples to be analyzed simultaneously on a single MiSeq or PGM sequencing run

- Molecular indexing measures number of unique fusion events and eliminates systematic sequencing error

- Up to 600 amplicons can be multiplexed in a single tube; DNA or RNA targets

- Thermal cycling is performed in a manner to maintain linearity during amplification enabling quantitation

- Uni-directional priming enables full exon coverage and exon tiling in a single tube

- Compatible with Ion Torrent™ or Illumina® sequencing systems; random sequencing start sites improves data quality
Available Products

**ALK/RET/ROS1 Gene Fusion Panel**

Fusions of these genes are of high interest, as they represent an important class of genomic rearrangements in cancer. Archer’s technology is uniquely suited to detecting these mutations because they involve many potential breakpoints and multiple possible fusion partners. Prior knowledge of the breakpoints or fusion partner are not needed for detection with the Archer™ technology.

**Custom Panels**

Archer™ invites users to develop their own custom content for a variety of applications including:

- RNA gene fusion detection
- RNA abundance
- Copy number variation (CNV)
- Single nucleotide variants (SNV)
- Indel detection

Our proprietary primer design software will select the appropriate primers, avoiding cross-priming and choosing the optimal Tm ranges. The user has the option to verify the choice of primers visually and make final adjustments.

The primers will be created and the custom kit will be sent to the user within a week to ten days, allowing for rapid development of your custom assay.

Learn more at: www.enzymatics.com/archer

ABOUT ENZYMATICs

Enzymatics is a leading producer of sample preparation reagents, assays, kits and software for life science research and applied science customers worldwide.

Our passion for quality, responsiveness, and flexibility is catalyzing the genomic healthcare revolution.

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