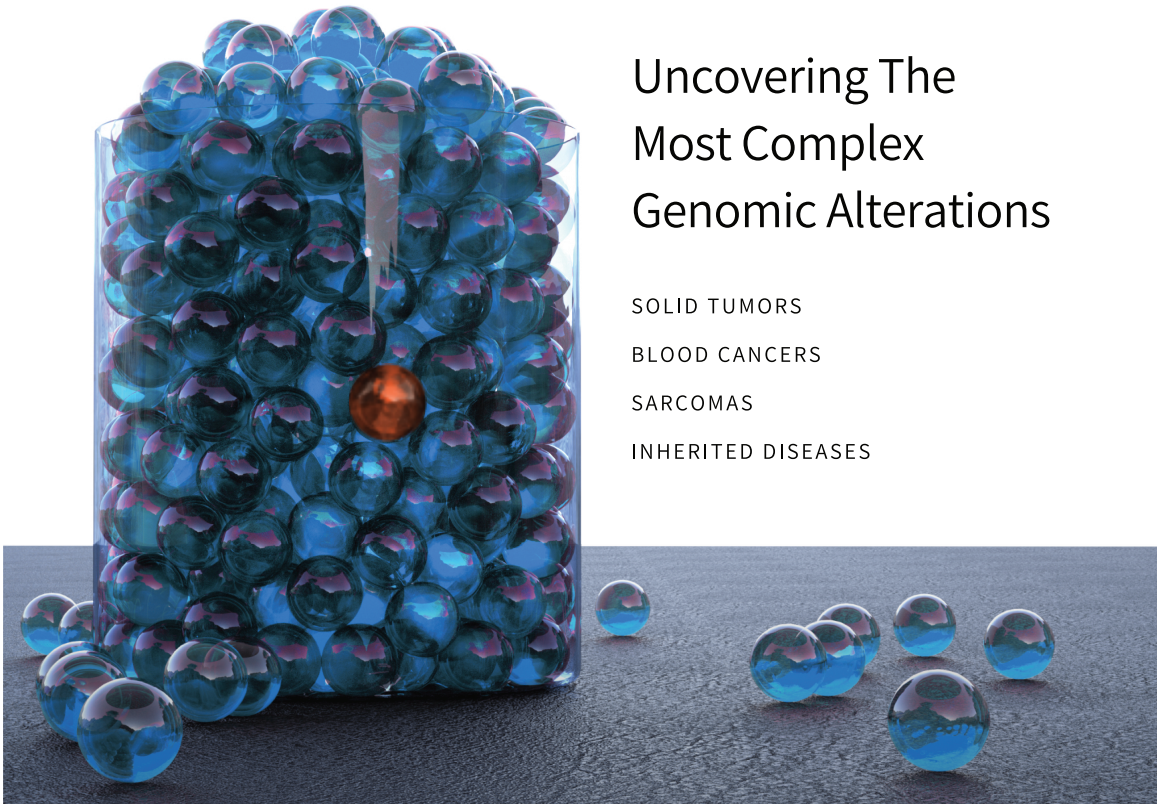
ARCHER®



Uncovering The Most Complex Genomic Alterations

SOLID TUMORS

BLOOD CANCERS

SARCOMAS

INHERITED DISEASES

FUSIONPlex®

RNA-BASED FUSION, EXPRESSION AND VARIANT DETECTION

VARIANTPlex®

DNA-BASED VARIANT AND CNV DETECTION

LIQUIDPlex™

VARIANT DETECTION FROM LIQUID BIOPSIES

Immunoverse™

RNA-BASED IMMUNE REPERTOIRE ANALYSIS

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ARCHER®

A single platform for reliable genomic profiling.

ANCHORED MULTIPLEX PCR (AMP™)

AMP is a robust technology for DNA and RNA sequencing that enables sensitive and specific detection of multiple mutation types.

BUILT FOR MAXIMUM GENE FUSION DETECTION

TARGETS BOTH KNOWN AND EMERGING GENOMIC ALTERATIONS

MOLECULAR BARCODES ENABLE ADVANCED ERROR CORRECTION

STANDARD NGS	ARCHER®
Liquid workflows can be complex and require master mixes	Simple, lyophilized reagents reduce the risk of contamination and save time
Can miss rare or unknown fusions	Detects fusions regardless of partner
Cannot discern starting molecule from PCR duplicates	Uniquely tracks starting molecules prior to amplification
PCR duplicates introduce errors, inflate true coverage and mask library complexity	PCR duplicates are utilized for error correction to increase sensitivity and specificity

ROBUST DETECTION CAPABILITIES FOR ALL MUTATION TYPES

FUSIONS SPLICING SNVs InDELs CNVs EXPRESSION

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Simplified workflow for reliable and fast genomic profiling.

~1 week

Turn around

Lyophilized reagents ensure consistent results

x 8

8-tube strip format for run size flexibility

CONSISTENT AND FAST WORKFLOWS

- SIMILAR WORKFLOW ACROSS ALL PRODUCT LINES
- 2.5 HOURS HANDS-ON TIME
- SINGLE DAY LIBRARY PREPARATION*

SINGLE-USE, LYOPHILIZED REAGENTS

- NO MASTER MIXES
- MINIMIZED USER ERROR AND CONTAMINATION
- LONGER HALF-LIFE VS. LIQUID REAGENTS

FLEXIBLE

- VARIABLE INPUT AMOUNTS STARTING FROM 10ng
- FFPE OPTIMIZED
- COMPATIBLE WITH AUTOMATION
- 8-TUBE STRIP FORMAT

*RNA panels up to 1.5 days

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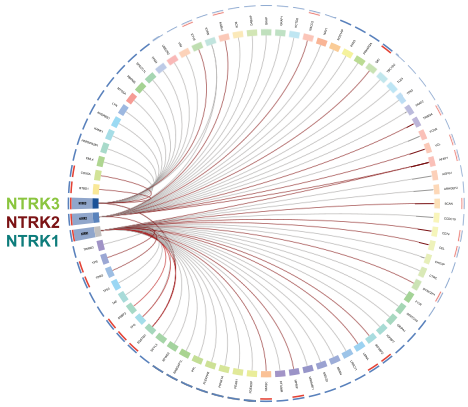
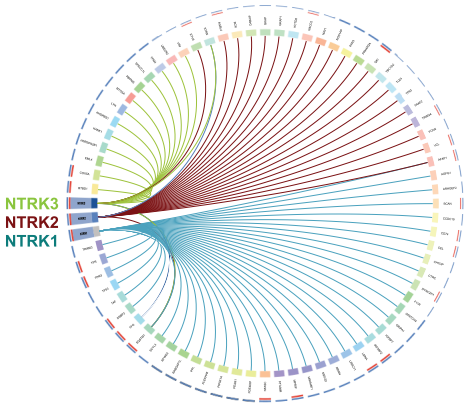
Sensitive fusion detection without prior knowledge of fusion partners.

Standard NGS assays detect a limited number of NTRK1/2/3 fusion partners



Archer AMP™ chemistry can dectect all NTRK1/2/3 fusion partners

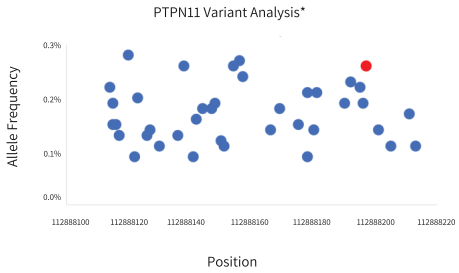


Wheels show known NTRK1/2/3 fusion partners*

Better Detection of Low Allele Frequency Mutations vs. Standard NGS

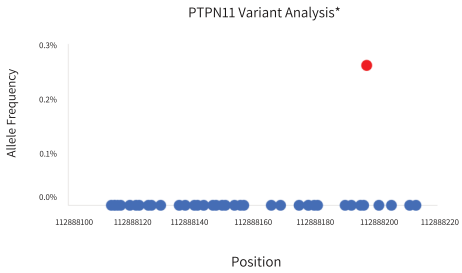
STANDARD NGS

PCR duplicates contribute to noise in data



ARCHER®

The same mutations are readily apparent due to error correction



*Data on file

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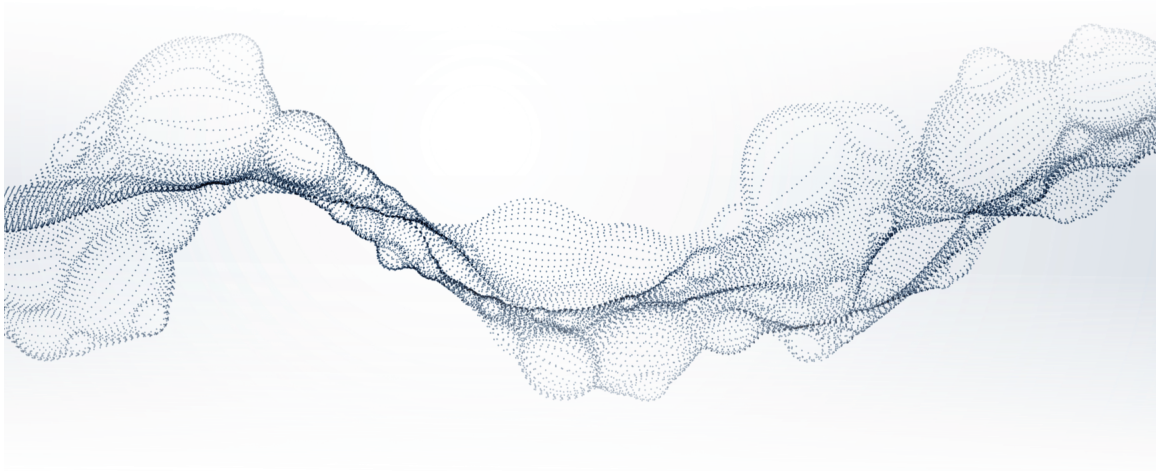
ARCHER®

Not all NGS assays detect FLT3-ITDs the same.

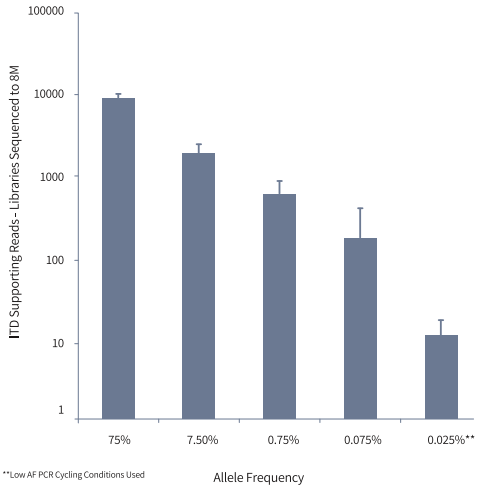
- Internal tandem duplications (ITDs) in FLT3 are actionable mutations but challenging to identify
- Archer® Blood Cancer NGS panels combine AMP™ chemistry with powerful bioinformatics to detect FLT3-ITDs
- Detect ITDs across a wide range of sizes and insertion points with Archer assays



Detect FLT3-ITDs with AMP Technology

- Archer assays can detect ITDs ranging in size from **3bp to 300bp+** at low allele frequencies
- Can readily customize to meet your needs without sacrificing performance
- Compatible with blood, bone marrow, PBL and FFPE sample types

VariantPlex® 30bp FLT3-ITD Detection*



**Low AF PCR Cycling Conditions Used

*Data on file

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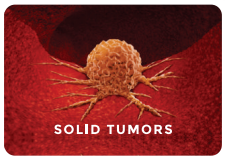
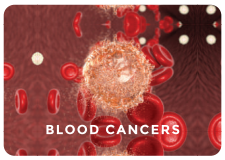
FUSIONPlex®

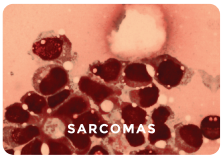
RNA-BASED FUSION, EXPRESSION AND VARIANT DETECTION

ARCHER®

Comprehensive coverage of recurrent, rare and novel fusions

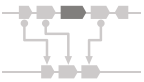






FUSIONS

SNVs & InDELs



SPLICING

EXPRESSION

NOVEL FUSIONS

AMP™ chemistry utilizes open-ended targeted amplification to identify gene fusions whether or not the partner is known.

LOW INPUT

AMP chemistry was purpose-built for library prep from low-input and degraded samples such as FFPE tissue.

EXPRESSION

Molecular barcoded fragments enable accurate RNA abundance calculations.

SPLICE VARIANTS & ISOFORMS OF INTEREST

Detect cancer-associated events such as METex14 skipping, EGFRvIII or kinase domain duplications.

QUIVER® FUSION DATABASE

Powerful fusion analysis combined with a curated database of relevant known translocations.

CUSTOMIZATION

Create from scratch or modify any panel to keep up with the pace of discovery.

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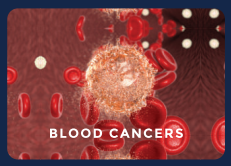
VARIANTPlex®

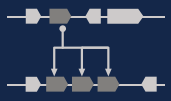
DNA-BASED VARIANT AND
CNV DETECTION

ARCHER®

Confident variant detection powered by error-corrected sequencing



SNVs



CNVs

InDELs

LOW INPUT

AMP™ chemistry was purpose-built for library prep from low-input and degraded samples such as FFPE tissue. Compatible with blood and bone marrow input types.

SENSITIVE & SPECIFIC VARIANT DETECTION

Error correction features within Archer Analysis reduce sequencer noise to reveal mutations below standard NGS-based detection thresholds.

QUANTITATIVE CNV DETECTION

Molecular barcoded fragment counting provides robust copy number analysis.

COMPREHENSIVE COVERAGE

AMP chemistry provides complete, strand-specific and bi-directional coverage of target exons to maximize variant detection.

COMPLEX MUTATION DETECTION

Coverage combined with powerful bioinformatics enables mutation detection in traditionally difficult regions like CEBPA & FLT3.

CUSTOMIZATION

Create from scratch or modify any panel to keep up with the pace of discovery.

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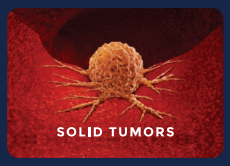
LIQUIDPlex™

VARIANT DETECTION FROM
LIQUID BIOPSIES

ARCHER®

Efficient Target Capture for Cell-Free Mutation Detection



SNVs

InDELs

CNVs

RELEVANT FRAGMENT CAPTURE

AMP™-based target enrichment preferentially enriches for highly fragmented ctDNA over genomic cell-free DNA (cfDNA) to reduce background noise and increase detection sensitivity of low allelic frequency (AF) mutations.

SINGLE-DAY LIBRARY PREP

NGS-ready libraries can be prepared in under 8 hours with less than 1 hour of hands-on time, providing sequencing results in as little as 3 days.

ERROR CORRECTION & QUANTITATIVE ANALYSIS

Molecular barcode adapters ligated prior to amplification enable duplicate read binning and advanced error correction for confident variant calls.

SENSITIVE & ROBUST VARIANT DETECTION

Reliably detect high AF (5%) variants using as little as 5ng total ctDNA input and low AF (1%) variants from as little as 10ng.

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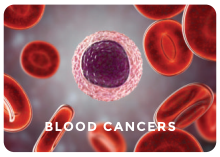
ARCHER® Immunoverse™
RNA-BASED IMMUNE REPERTOIRE ANALYSIS

ARCHER®

T- and B-Cell Receptor Panels for Clone Tracking



IMMUNE REPERTOIRE CHARACTERIZATION

Unbiased amplification for a true and reproducible measure of diversity.

SENSITIVE CLONOTYPE IDENTIFICATION

AMP™-powered error correction provides a true measure of sample complexity and enables rare clone identification.

COMPREHENSIVE COVERAGE

Archer molecular barcode adapters contain universal primer binding sites allowing for open-ended amplification and sequencing throughout the entire V(D)J region, resulting in increased coverage of CDR3.

FLEXIBLE INPUT

Input amounts range from 25ng to 2µg of RNA from PBMC, FFPE or fresh frozen tissue sample types.

MULTIPLE APPLICATIONS

Archer Immunoverse™ can be used for disease tracking, repertoire profiling and immune reconstitution.

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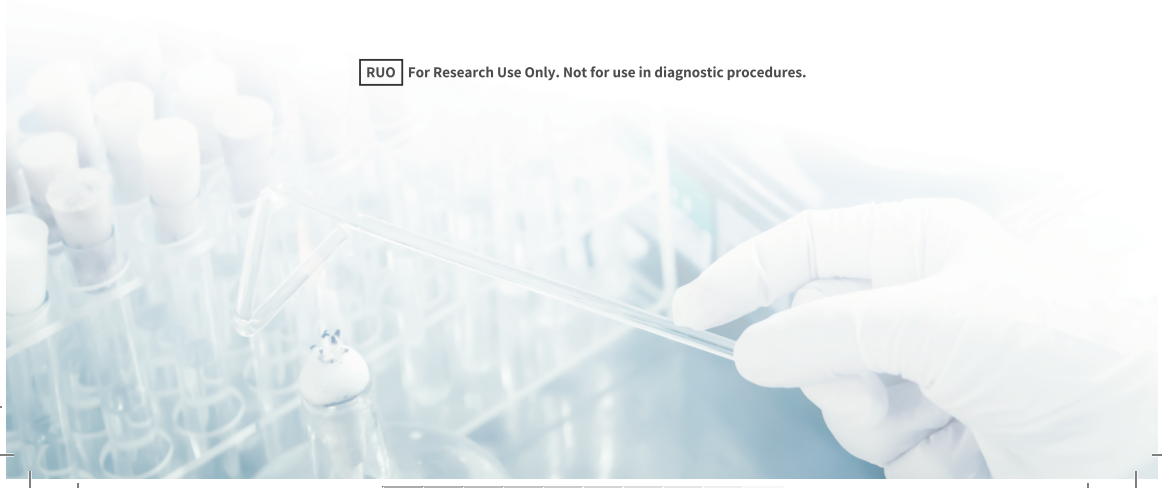

ARCHER® Analysis

ARCHER™ Analysis Unlimited

Archer Analysis provides deep analytical metrics in an easy to interpret interface.

Powerful Bioinformatics

Ultimate Adaptability

User-Friendly Analysis

Secure Platform

Available for *local* or private *cloud-based* installation

Analyze

- Simple, Intuitive Web-Based Interface
- Integrate LIMS Data
- Automate Sample Processing
- Customize Outputs

Interpret

- Comprehensive Sample and Fusion QC Metrics
- Visualize Fusions, Variants, Expression
- Dynamic Post-Processing Filtering Sets
- Third-Party or Locally Curated Annotations

Report

- Assignment and Tracking
- Customize PDF Reports
- Automate With Third-Party Software
- Easy to Interpret Reporting

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ARCHER® AssayDesigner

FLEXIBLE

- CREATE A CUSTOM ASSAY OR MODIFY AN EXISTING PANEL
- ENABLES FUTURE CONTENT ADDITIONS
- COMPATIBLE FOR ALL INPUT TYPES
- SCALABLE FOR HIGH-THROUGHPUT LABS

RELIABLE

- EXPANDABLE WITHOUT COMPROMISING ASSAY PERFORMANCE
- LEVERAGE A SIMPLE WORKFLOW
- REPRODUCIBLE IN ALL SAMPLE TYPES

EFFICIENT & FOCUSED

- DELIVERED IN AS FEW AS 4 - 5 WEEKS
- INTERNAL TEAM OF EXPERTS SUPPORTING INDIVIDUAL LABORATORY NEEDS

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ARCHER®

ArcherDX is Your Comprehensive Genomic Sequencing Partner

ONE SOURCE

Comprehensive suite of assays across a broad range of disease states

PRECISE

Proven accuracy in detecting existing and novel fusions through enhanced technology

SIMPLIFIED WORKFLOW

Simplified workflow using lyophilized reagents, ensuring minimal errors

FAST

Fast turn-around time (~1 week)

USER-FRIENDLY

Integrated analytics in an easy to interpret, actionable report

FLEXIBLE

Easily create custom assays from scratch or modify an existing panel

To learn more about ArcherDX, go to:
www.archerdx.com

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