Liquid P5 MBC + P7 Adapter Kits for Illumina®

Intended Use

The Archer Liquid P5 MBC + P7 Adapter Kits for Illumina® are intended for research applications in conjunction with Archer reagent kits and corresponding target-enrichment panels to produce high-complexity libraries for use with Illumina next-generation sequencing (NGS) platforms.

Sequencing data produced by Archer products should be processed using Archer™ Analysis software — a complete bioinformatics suite that leverages Anchored Multiplex PCR (AMP™) chemistry to detect unique sequence fragments, thus enabling error correction, read deduplication, and ultimately high-confidence alignment and mutation calling. Archer Analysis takes demultiplexed FASTQ files straight from the sequencer as input, and produces both high-level and detailed mutation reporting, as well as raw text and BAM outputs for full transparency of the pipeline.

Before Getting Started

Important Precautions

- Read through the entire product insert before beginning library preparation.
- Use good laboratory practices to prevent index contamination across samples.
- Use nuclease-free PCR tubes, microcentrifuge tubes and aerosol-barrier pipette tips.
- Wipe down workstation and pipettes with nuclease and nucleic acid cleaning products (such as RNase AWAY, Thermo Fisher Scientific).
- **Review the "Molecular barcoding, sample indexing, and multiplexed sequencing" section of the respective Archer Protocol for Illumina.**

Working With Liquid Indexing Reagents

- Archer Liquid P5 MBC + P7 Adapter Kits are provided in 96-well skirted plates with either a single reaction per well (SK0186 and SK0187) or 24-reactions per well (SK0180 and SK0181). When using the 24-reaction per well plates it is recommended that the plate contents be aliquoted into single use reactions to limit freeze thaw cycles.

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Store at -30°C to -10°C

Kit Description	Kit Part Number	Plate Description	Part Number
Liquid P5 MBC + P7 Adapter Kit Set A for Illumina® - 2304 reactions	*SK0180*	*Liquid Adapter Plate A (Indexes 1-96) – 24 reactions per well*	*SA0691*
		Liquid P7 Indexes Plate A (Indexes 1-96) - 24 reactions per well	*SA0692*
Liquid P5 MBC + P7 Adapter Kit Set B for Illumina® - 2304 reactions	*SK0181*	*Liquid Adapter Plate B (Indexes 97-192) – 24 reactions per well*	*SA0693*
		Liquid P7 Indexes Plate B (Indexes 97-192) - 24 reactions per well	*SA0694*
Liquid P5 MBC + P7 Adapter Kit Set A for Illumina® - 96 reactions	*SK0186*	*Liquid Adapter Plate A (Indexes 1-96) – 1 reaction per well*	*SA0800*
		Liquid P7 Indexes Plate A (Indexes 1-96) - 1 reaction per well	*SA0801*
Liquid P5 MBC + P7 Adapter Kit Set B for Illumina® - 96 reactions	*SK0187*	*Liquid Adapter Plate B (Indexes 97-192) – 1 reaction per well*	*SA0802*
		Liquid P7 Indexes Plate B (Indexes 97-192) - 1 reaction per well	*SA0803*

- Ensure plates are fully thawed and thoroughly mixed prior to each use.
- Always centrifuge plates before opening to pull contents down and reduce the risk of index contamination.
- It is best practice to pair the P5 MBC and P7 Adapters using the same well index from each of the respective reagent plates when generating Archer libraries.
- The Illumina sequencers will work best when index diversity within a run is high. Therefore, it is recommended that P5 MBC and P7 Adapters be used in order from top to bottom left to right, this will ensure to maximize complexity during sequencing and reduce the amount of PhiX required.
- **IMPORTANT**: If running only a few samples on a sequencer, do not select P5 MBC adapters at random without ensuring all samples utilize a different CR ID.
- Select samples in order and in groups of 4 where possible, this will ensure the Illumina channel constraints are met.

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- If using more than 192 MBCs, contact archer-tech@idtdna.com for adapter compatibility.

Sequencing Setup & Data Analysis

Index Read Setup
- Set the Index 1 Read to 8 cycles.
- Set the Index 2 Read to 10 cycles.

PhiX Loading
- It is recommended that PhiX be used for all sequencing runs, typically no less than 1%.
- The final fraction of PhiX for a sequencing run should be optimized for the specific purpose intended.

Data Analysis
Analyze data with Archer Analysis using either a local software installation or Archer Unlimited. Visit our website or contact archer-tech@idtdna.com for more information.

Archer Analysis Job Settings
Within Section 3 "Settings" make the following changes:
- Change the "Barcode Length" from 8 to 12.
- Change the "Common Region Set" from "Dynamic Search" to "Illumina Expanded Set Option 1".

For additional sequencer loading information, please refer to the separate Quantify, Normalize, and Sequence Protocol for Illumina (RA-DOC-54).

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Specifications

Refer to part specific plate maps (RA-DOC-042 to RA-DOC-045) for index sequences or contact archer-tech@idtdna.com for more information.

Part Description	Index Length	MBC Length	Minimum Hamming Distance
P5 MBC Adapter	10	12	4
P7 Adapter	8	-	3

Limitations of use

For research use only. Not for use in diagnostic procedures. Unless otherwise agreed to in writing, IDT does not intend these products to be used in clinical applications and does not warrant their fitness or suitability for any clinical diagnostic use. Purchaser is solely responsible for all decisions regarding the use of these products and any associated regulatory or legal obligations.

Safety data sheets pertaining to this product are available upon request.

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Revision History

Document Number	Date	Description of change
RA-DOC-001/REV01	June 2023	Initial release.
RA-DOC-001/REV02	August 2023	Updated typos in reagent table.
RA-DOC-001/REV03	November 2023	Updated part number typo under section "Working with Liquid Indexing Reagents". Updated branding.

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