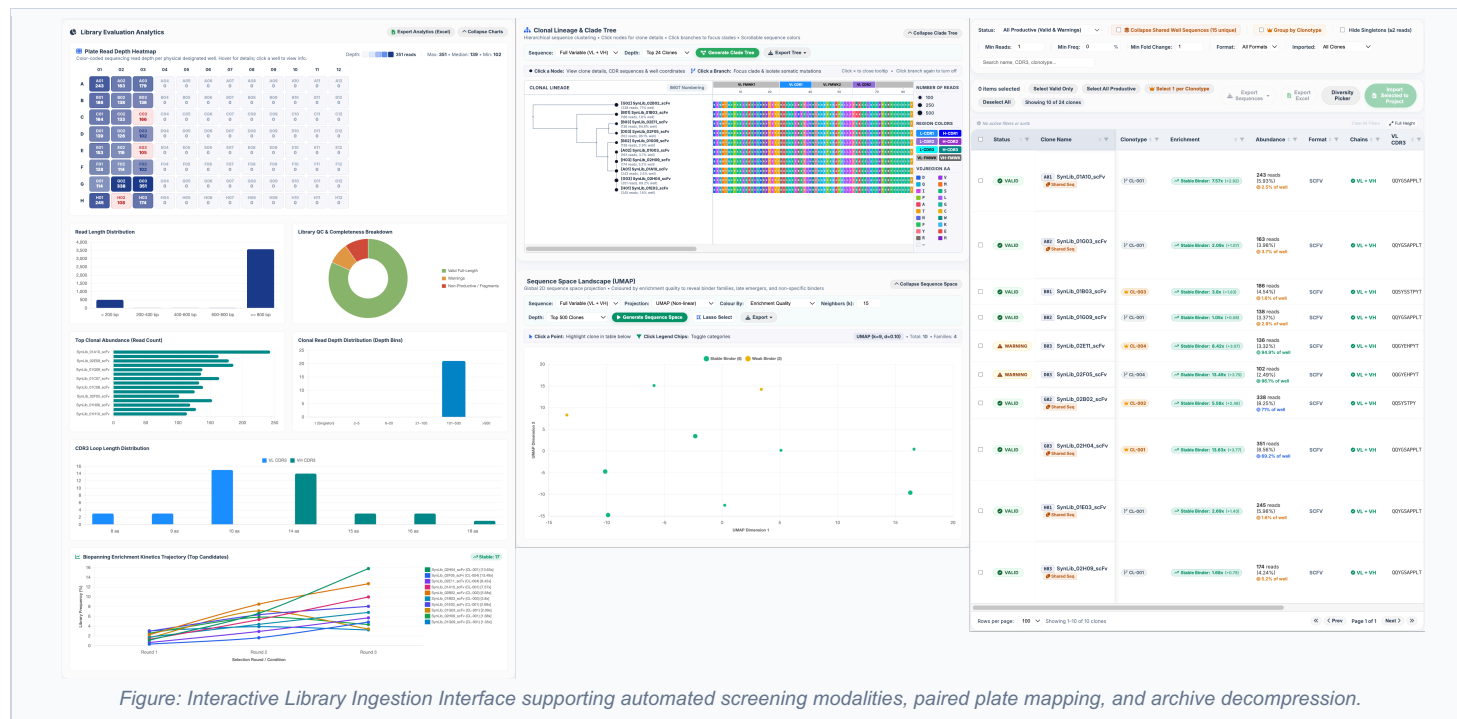


Library Evaluation and Ingestion

High-Throughput NGS Quality Control, Clonal Deduplication, and Kinetic Selection

Transform massive, noisy NGS datasets (FASTQ, FASTA, multi-file ZIP) and multi-round screening libraries directly into curated lead candidates. AbLead automatically validates 7-region IMGT completeness, checks Phred quality scores, detects molecular formats, and computes biopanning enrichment kinetics—eliminating custom bioinformatic scripting bottlenecks.



CORE CAPABILITIES

- **Universal Archive Ingestion:** Parses FASTQ (.gz), FASTA, GenBank, TSV, and nested ZIP archives directly in memory with zero manual pre-formatting.
- **Screening Workflows:** Optimized for Hit Picking (with/without plate maps), Biopanning Kinetics, Cross-Reactivity, DMS, FACS Sort-Seq, and Single-Cell AIRR.
- **Architecture Auto-Detect:** Automatically identifies scFv, single-domain VHH, and paired Fv/Fab constructs from raw read length and domain landmarks.
- **Rigorous Sequencing QC:** Translates per-base Phred ASCII scores to numeric quality, flags frameshifts and premature stop codons, and decodes dual barcodes.

DEVELOPABILITY ADVANTAGE and IMPACT

- **Longitudinal Kinetics:** Calculates log2(Fold-Change) enrichment and depletion trajectories across panning rounds to isolate true high-affinity binders.
- **Eliminate Sequencing Noise:** Filters out non-productive amplicons, primer-dimers, and aberrant clones before committing costly wet-lab resources.
- **Pre-Flight Plate Validation:** Automatically reconciles well coordinates, barcode adapters, and clone IDs to prevent expensive tracking errors.
- **Platform Handoff:** Promotes prioritized clones directly into AbLead for rank ordering, liability triage, and optimization design.

The AbLead Advantage: By unifying high-throughput sequencing QC, multi-round selection kinetics, and automated architecture validation into a single pipeline, AbLead bridges the gap between raw sequencing reads and prioritized lead molecules.

Accelerate Your Antibody Lead Optimization and De-Risk Development

Request a Live Demo: ablead@ketchemconsulting.com | Explore Platform: ablead.ketchemconsulting.com

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