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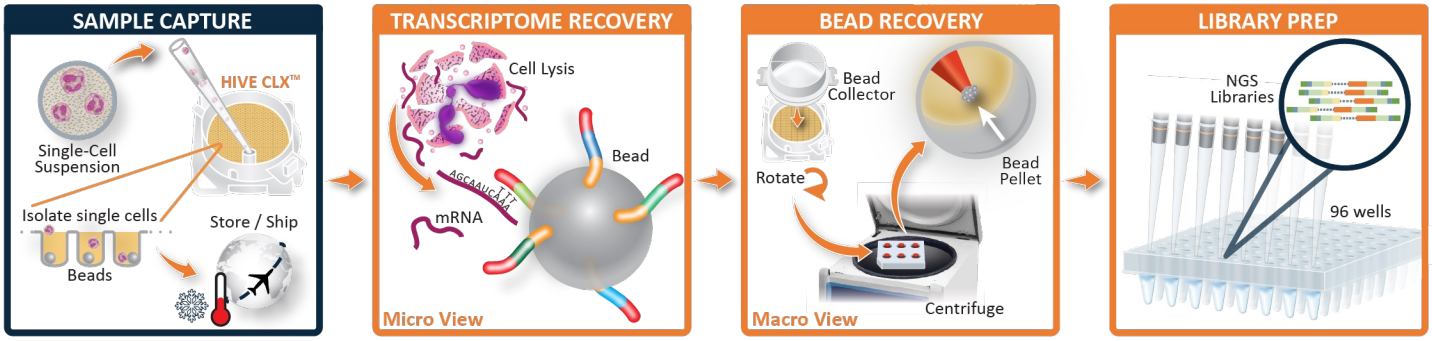
PRODUCT NOTE
HIVE CLX™ Single-Cell Solution

HIVE CLX: AN END-TO-END SOLUTION FOR SINGLE-CELL RNAseq

Gently capture and stabilize single-cells in your sample for RNAseq with the HIVE CLX single-cell solution. Use handheld HIVE devices to process minimally invasive biopsies without any specialized instrumentation then ship the loaded devices to a central lab for processing, greatly simplifying your collection logistics.

Unlock access to single-cell RNAseq for new people, places, and projects across your institution's footprint to resolve biological diversity in your clinical samples, uncover rare cell-types, and discover new biomarkers.



ACCESS TO NEW FRONTIERS IN SINGLE-CELL BIOLOGY

Recover any cell-type and gain new clinical insights with complete access to your sample biology

- Access more cell-types, including rare and fragile cells: neutrophils, eosinophils, basophils, mast cells
- Example applications: inflammation, autoimmune diseases, asthma and allergies, dermatitis, rheumatoid arthritis (RA), eosinophilic esophagitis, leukemia (AML/CML), and other cancers

Collect samples in any setting with the instrument-free workflow

- Support your longitudinal studies, time-courses, end-of-day collections, and sporadic samples
- Blood, bone marrow, swabs, fine needle aspirates, freshly dissociated tissues, and other biopsies

Reach remote and low resource locations with built-in storage and global shipping

- Emerging and evolving infectious diseases: HBV/HCV, HIV, malaria, tuberculosis, and SARS-CoV-2

Any cell. Any where. Any time.™

Talk to a HIVE™ expert
sales@honeycomb.bio

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FEATURES AND BENEFITS OF THE HIVE CLX SINGLE-CELL SOLUTION

Detect rare cells

- High single-cell capacity with ~160,000 picowells in every device
- Load 500–60,000 cells per device and pool devices if needed

Recover fragile cells

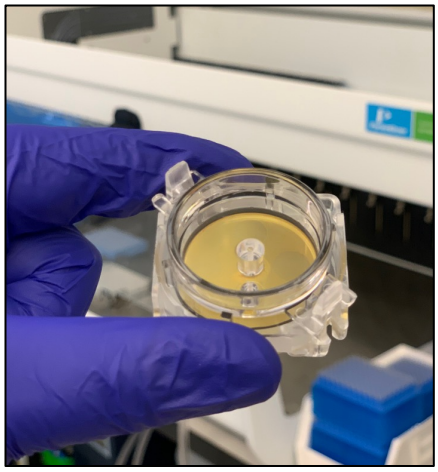
- Use gravity or a brief spin to load single-cells into the HIVE
- No microfluidic systems that expose your samples to stress

Process single-cell samples at the collection site

- No specialized instruments needed
- No sample damage from cryopreservation

Stabilize single-cells in the HIVE

- Cell and RNA preservation included with every device
- 9-month stability for V1 technology; CLX expected to match

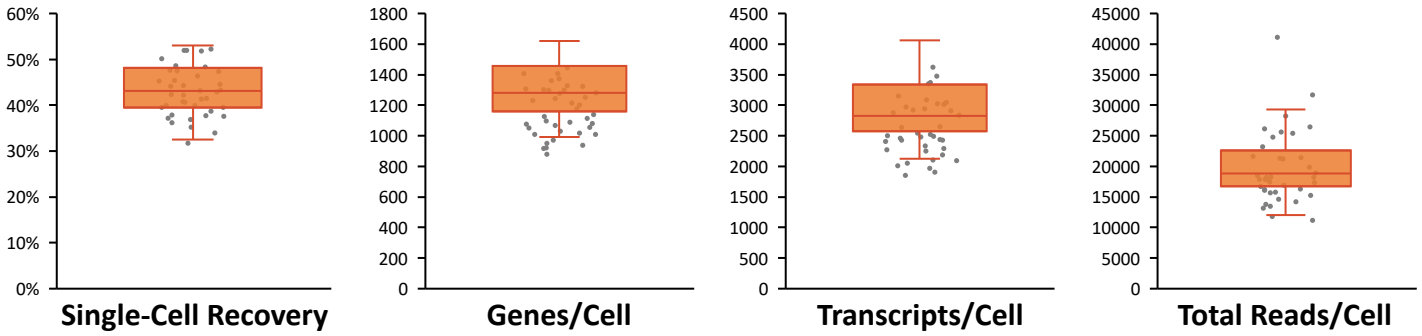


Recover single-cells in a handheld device

PERFORMANCE OF THE HIVE CLX SINGLE-CELL SOLUTION

Reproducible performance across all test conditions

- Loaded 500–60,000 human PBMCs (peripheral blood mononuclear cells) with 90% viability
- Processed all samples with the standardized HIVE CLX workflow



TECHNICAL SPECIFICATIONS

Metric	Performance
HIVE CLX Picowells	55 µm size, ~160,000 per device
Sample Type	Single-cell suspensions
Cell Loading Range	500–60,000 cells
Sample Volume	1–4 mL
Cell Recovery	~44%
Genes/Cell	~1,300
Transcripts/Cell	~3,000

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HIVE CLX SINGLE-CELL SEQUENCING FOR HUMAN PBMCs

Cell input	Doublet rate†	Single-cell recovery†	Reads/sample‡	# HIVEs per NovaSeq SP flow cell*
500	0%	220	7 M	>>8
2,000	2%	850	27 M	>8
7,500	5%	3,000	100 M	8
15,000	**9%**	**6,000**	**200 M**	**4**
30,000	14%	11,000	400 M	2
60,000	36%	17,000	800 M	1

†Performance metrics estimated from experimental data using human PBMCs.
‡Recommendations for reads/sample balance the amount of biological information gathered with sequencing costs and should achieve 80% recovery of cells, genes, and transcripts. These are recommended starting points for most applications, but you may need to tailor sequencing depths for your specific experiments.
**The nominal NovaSeq SP flow cell offers 800 M reads.*

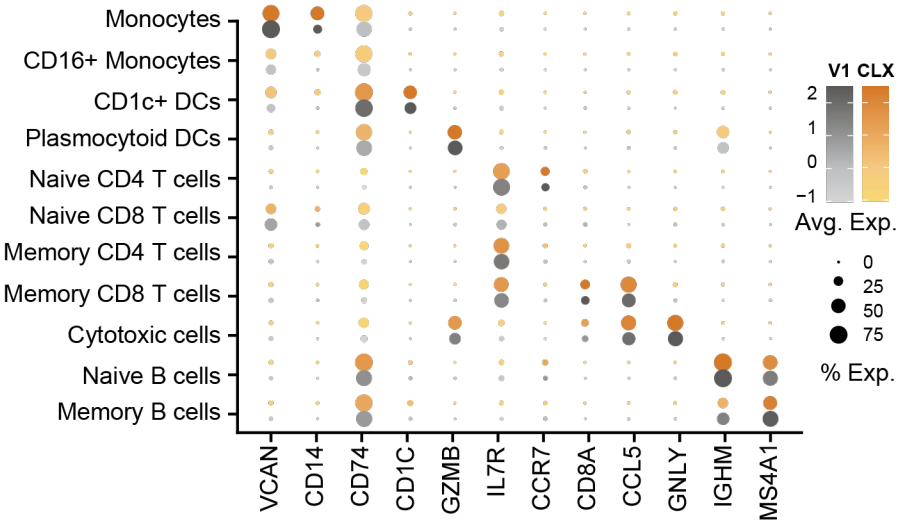
Experimental design

- Processed the same human PBMC sample with multiple devices for the first-generation HIVE V1 and HIVE CLX single cell solutions
- Loaded 8,000 cells with ≥90% viability and followed the standardized HIVE protocol in all cases
- Filtered lower quality data from cells with <300 genes and <600 transcripts

REPRODUCIBLE GENE EXPRESSION PROFILING

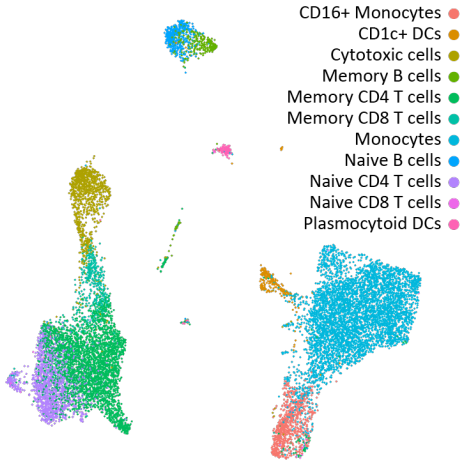
Reliably combine data with the established HIVE V1 technology

- Seamlessly combine RNAseq data with standard integration tools
- The HIVE CLX single-cell solution accommodates 2× more sample, recovers 4× more cells, and detects 20% more genes/transcripts per cell with improved usability and chemistry

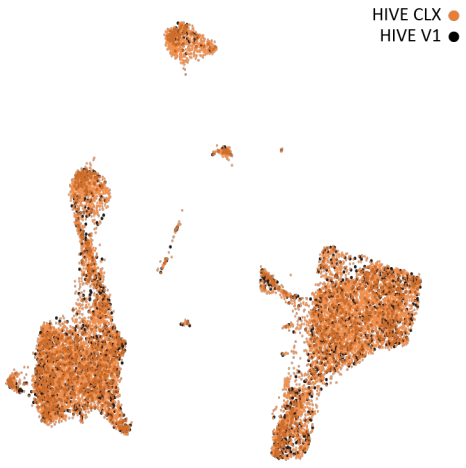


Gene expression profiles gathered with the HIVE CLX single cell solution are nearly identical to the HIVE V1 technology.

Single-cell transcriptomes



HIVE sequencing offers unbiased biological coverage and preserves rare and fragile cells.



Transcriptomes derived from both HIVE configurations show nearly complete overlap.

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MORE INFORMATION

Download protocols & example data: www.honeycomb.bio

Speak with a HIVE™ expert: sales@honeycomb.bio

Ready for quotes & ordering: NGS@perkinelmer.com

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