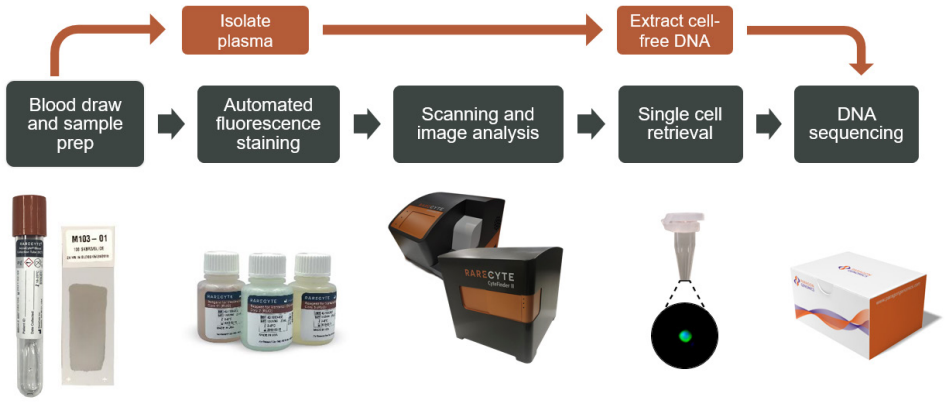
RARECYTE

PARAGON GENOMICS

The Complete Picture: Cell free and single CTC sequencing from a single tube

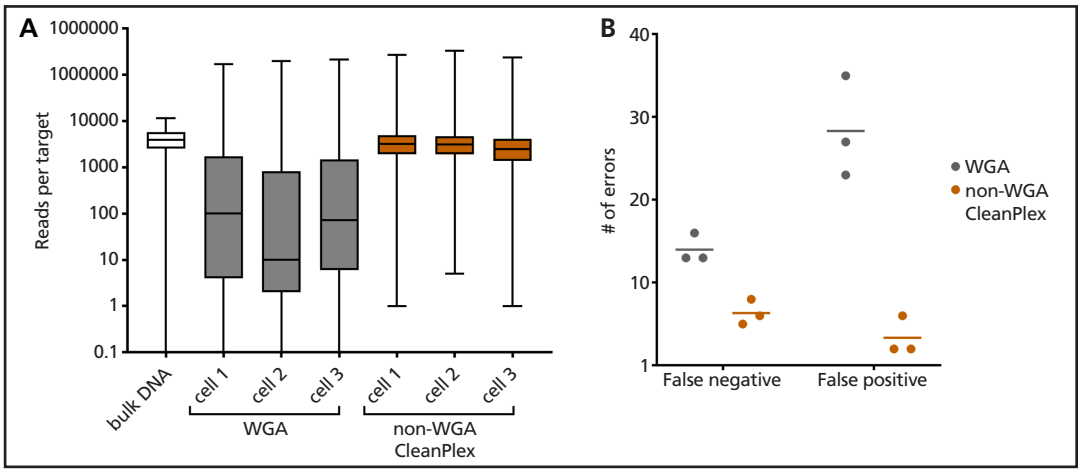
Use RareCyte's CTC assays and CyteFinder Instrument paired with Paragon's CleanPlex NGS Technology to reliably measure somatic mutations from single circulating tumor cells (CTCs) and plasma.



RareCyte assays deliver repeatable and accurate CTC counts, biomarker expression, and plasma – all from a single tube of blood. Single cells can be retrieved from the slides and deposited into PCR tubes using the CytePicker Retrieval Module. CleanPlex Panels deliver consistent sequencing results from plasma and single cell inputs.

Sensitive, low input sequencing without the need for whole genome amplification

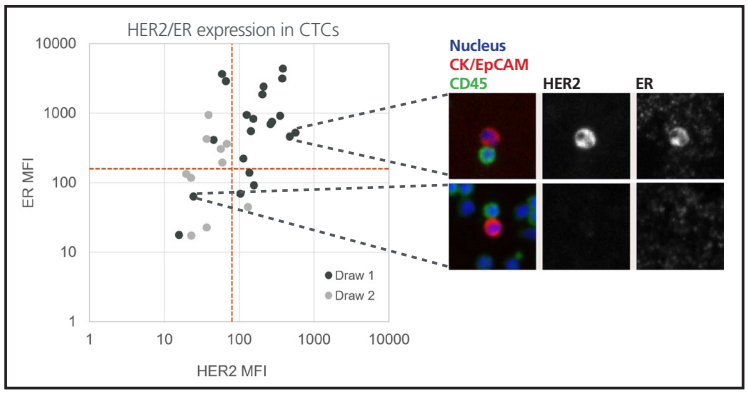
The low DNA input capability of CleanPlex technology from Paragon Genomics enables accurate single cell sequencing results by eliminating error-prone whole genome amplification (WGA). CleanPlex provides increased coverage uniformity, which reduces target dropout and improves the ability to multiplex samples, thus decreasing sequencing costs.



Single cell targeted DNA sequencing with CleanPlex OncoZoom. Single cell lysate is input as template into Paragon's CleanPlex OncoZoom, with modified primer concentration, PCR cycle number, and clean-up steps to compensate for low input DNA concentration. Using this non-WGA method vastly improves: (A) coverage uniformity, and incidence of (B) false negative and false positive errors, when compared to single cell WGA products.

Case study: HER2 genetic heterogeneity in metastatic breast cancer patient

Here we present data from a metastatic breast cancer patient with differential HER2 expression in mixed invasive ductal (HER2+) and lobular (HER2-) carcinoma diagnosed by tissue biopsy. Two tubes of the patient's blood were processed with RareCyte's HER2/ER assay and then sequenced using Paragon Genomics' CleanPlex OncoZoom Cancer Hotspot Panel.



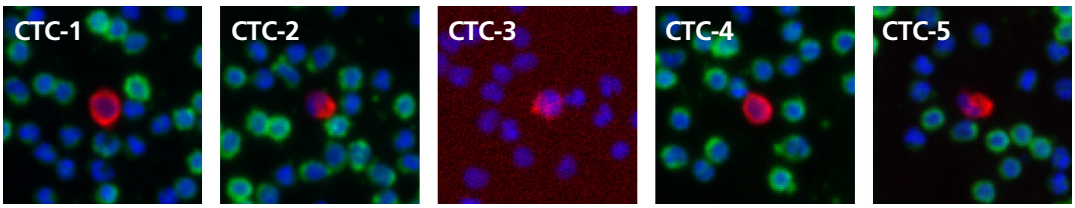
CTCs were identified and characterized by HER2 and ER expression.

Single CTC sequencing analysis with CleanPlex OncoZoom Cancer Hotspot Panel

Sample	Co-retrieved WBCs	ERBB2 L755S VAF*
cfDNA-1	N/A	21%
cfDNA-2	N/A	25%
WBC-1	N/A	0%
WBC-2	N/A	0%
CTC-1	2	7%
CTC-2	4	19%
CTC-3	3	0%
CTC-4	5	0%
CTC-5	6	13%

*VAF = variant allele frequency, i.e. % of reads containing the variant

ERBB2 (HER2) L755S was detected in both cell-free DNA replicates, as well as in 3 of 5 CTCs, suggesting that there are two genetically distinct populations of CTCs disseminating from the two tumors.



Nucleus CK/EpCAM CD45

For Research Use Only. Not for use in diagnostic procedures.

RareCyte, Inc
2601 Fourth Ave, Seattle, WA 98121

855.727.3298 | 206.455.9092

www.rarecyte.com

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Paragon Genomics, Inc.
3521 Investment Boulevard Suite 1, Hayward, CA 94545

510.363.9918

www.paragongenomics.com