



Twine **Exome** Capture Kit 1.0

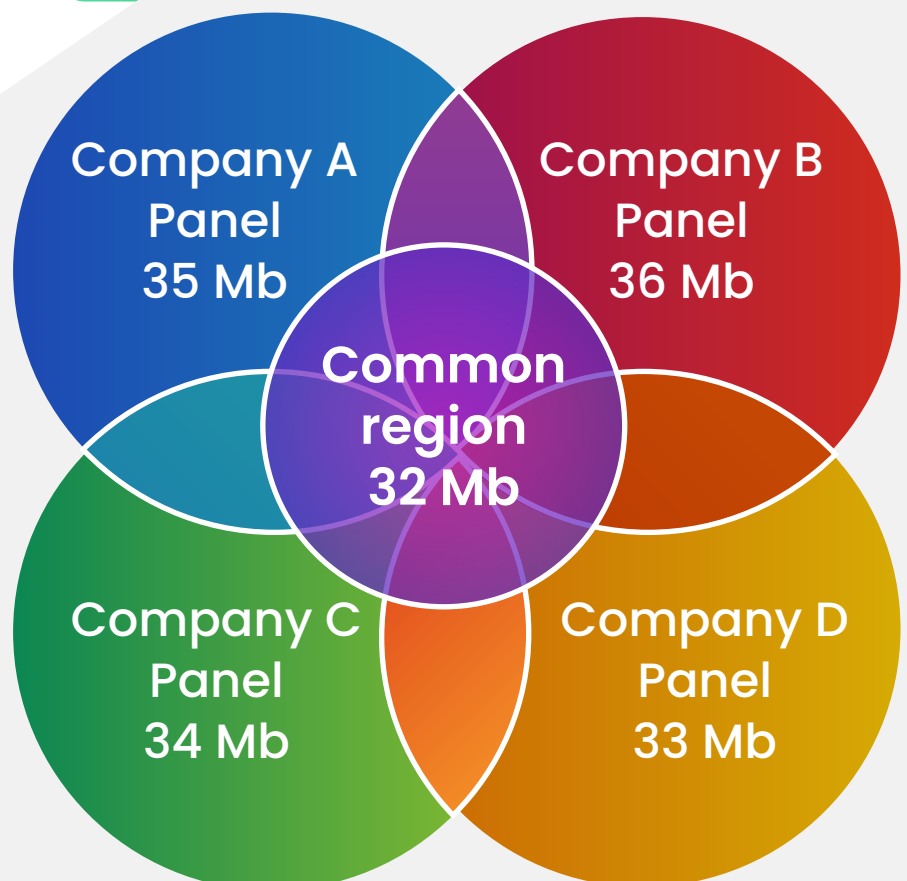
Complete exonic coverage for research
and diagnostics

Bencos' Twine Exome Capture Panel is a state-of-the-art solution for high-quality, cost-effective whole exome sequencing. Designed with a focus on comprehensive coverage, exceptional uniformity, and streamlined workflow, this Exome Capture Panel sets a gold standard for genomic research and clinical diagnostics.

Optimum Exome Coverage

Twine Exome Capture 1.0 is a comprehensive whole exome sequencing panel with total target coverage size of 37.1 Mb, which is the maximum coverage for exome as compared to other panels available in the market. The panel consolidates the utility of various clinical panels into a single solution offering comprehensive coverage of major genetic databases (RefSeq, CCDS, GenCode, Clinvar, ACMG73).

The Twine Exome panel also allows for customized target capture of clinically significant non-coding pathogenic or likely pathogenic variants. This powerful tool ensures accurate analysis of all mutation types, including SNVs, CNVs, and InDels.

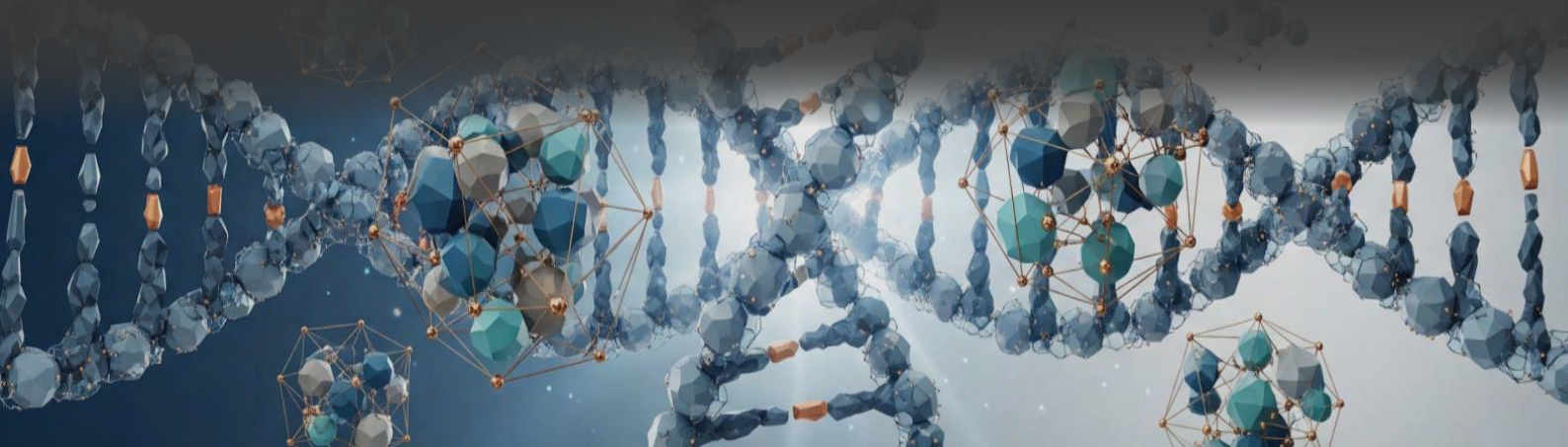


Key Features and Benefits

Our proprietary probe technology and optimization solutions ensure you capture more of the critical regions you care about, leading to more reliable and informative sequencing results.

FEATURE	DESCRIPTION	BENEFIT
Optimized Probe Design	Utilizes an advanced, proprietary algorithm for probe design that covers hard-to-capture regions as well	Maximizes target region coverage such as GC-rich and repetitive regions. Minimizes off-target sequencing.
High Uniformity	Exceptional depth of coverage across all target regions.	Reduces the need for deeper sequencing and lowers overall project cost.
Sample type	Works for both germline (from peripheral blood) and somatic tissue	Works with DNA input as low as 50 ng, even from FFPE samples
Fast, Simple Workflow	Single-day hybridization protocol.	Saves valuable time and simplifies lab operations.
Platform Uniformity	Compatible with sequencing on Illumina, Thermo Fisher & MGI *	Can select any variant based on the in-house sequencer available
Reliable Performance	Rigorous quality control and validation.	Consistent, reproducible results every time.

*Validation runs ongoing for ONT Platform.



Unmatched Performance Metrics

The Twine Exome Capture Kit consistently outperforms conventional panels across key quality metrics, offering superior data for your most demanding applications.

METRIC	BENCOS TWINE PANEL (%)	COMPETITOR A (%)
Target Coverage (at 20x)	98.5	96.2
Target Coverage (at 30x)	90.0	88.4



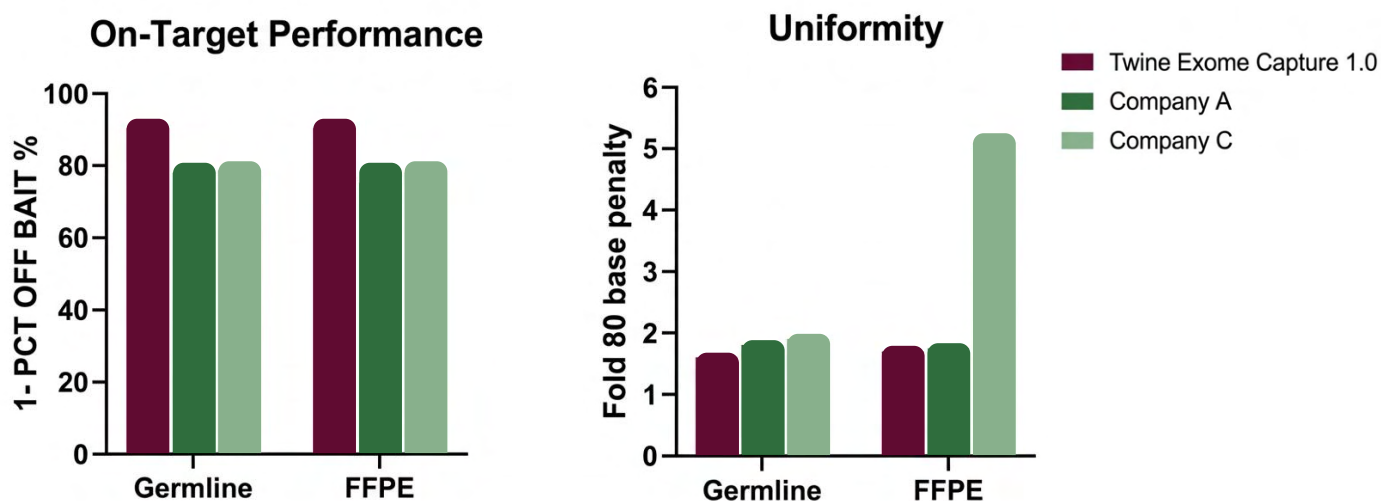


Figure 1. On-Target performance measured by 1-PCT OFF BAIT (higher the better) and Uniformity measured by Fold 80 base penalty compared to other competitor panels in both germline and FFPE analysis. Reference materials NAI2878, NAI2891, NAI2892 for germline analysis and HD832 for FFP analysis were used with the same amount on Illumina sequencer.

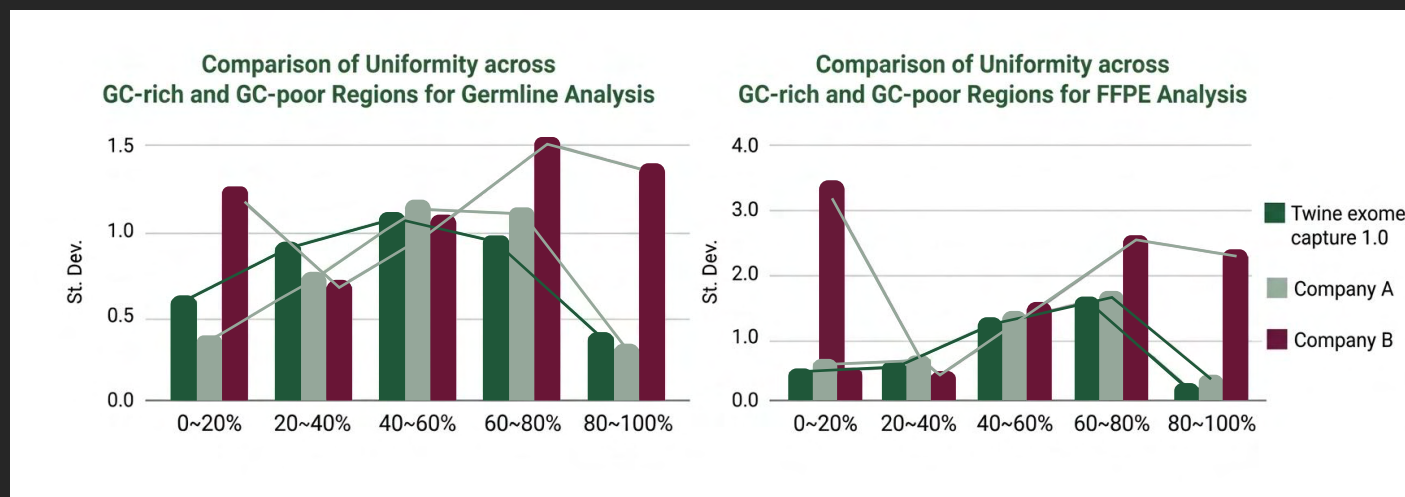


Figure 2. Exceptional Coverage Uniformity in Low and High GC Content. The panel demonstrates industry-leading stability with a minimal standard deviation of 0.166, outperforming competitor panels which showed higher deviations of 0.199 and 0.356 across germline analysis. Similar improved performance is observed in case of FFPE samples. These data points, visualized across varying GC ratios, confirm the panel's ability to provide reliable, uniform sequencing regardless of genomic complexity.

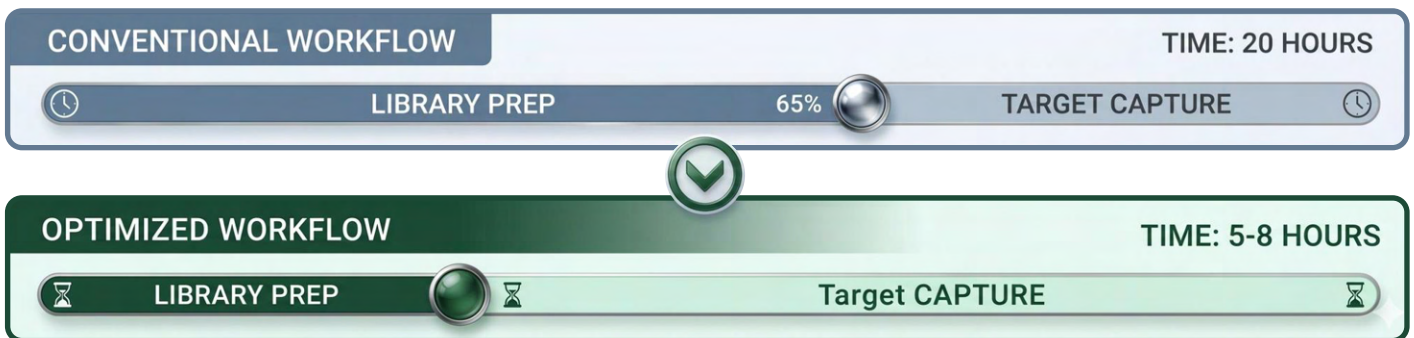
Target add-on customization

The Twine Exome Panel is meticulously designed to include all CDS regions, offering a robust tool for various research and diagnostic needs. However, additional regions such as introns, alternative splice sites, TF binding sites, UTRs and mitochondrial DNA regions relevant to gene regulation with clinical impact, are further offered as flexible spike-in options to the already existing comprehensive whole exome panel.




Workflow Overview

Experience reliable results without the wait. The Twine Exome Panel streamlines the traditionally complex hybridization capture workflow, reducing turnaround time from over 20 hours to under 8 hours. By enabling same-day sequencing, we empower researchers to access critical NGS data faster than ever before.




Applications

The Bencos Twine Capture Panel is the ideal choice for a wide range of applications:




Human Genetic Disease Research
Enables identification of disease-causing variants across both Mendelian and complex disorders, supporting gene discovery and genotype-phenotype correlations.



Clinical Diagnostics
Delivers high-confidence variant detection for accurate diagnosis and screening of inherited conditions, including rare genetic diseases.



Biomarker Discovery
Facilitates comprehensive genomic analysis to uncover novel biomarkers for disease prognosis, therapeutic targeting, and precision medicine.



Population Genetics
Supports large-scale cohort studies with standardized, high-quality exome data for studying genetic diversity, allele frequencies, and evolutionary patterns.

Ordering and Support

For technical specifications, pricing, or to request a quote, reach us at:

Contact Information	Details
Sales & Inquiries	sales@bencoslife.com
Technical Support	support@bencoslife.com
Phone	+91 9875451675

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