



KAPA Target Enrichment Custom Panels

Better by Design

Combining more than a decade of probe-design experience with an improved manufacturing process, new **KAPA HyperChoice Probes** (for human designs) and **KAPA HyperExplore Probes** (for nonhuman designs) are fully customizable target enrichment panels for hybridization-based capture before next-generation sequencing. Answer your most challenging research questions with probes manufactured using KAPA HiFi DNA polymerase and validated by NGS.

Easily design customized probe pools with our HyperDesign software, then combine them with our KAPA HyperPrep or KAPA HyperPlus Library Preparation Kits to:

- **Reduce sequencing costs and save time** with superior capture uniformity
- **Reliably enrich challenging, previously inaccessible genomic regions**
- **Streamline target enrichment** using the updated KAPA HyperCap Workflow v3, driven by KAPA HyperPrep or KAPA HyperPlus Library Preparation Kits



Reduce sequencing costs and save time with superior capture uniformity

Achieve better coverage, higher uniformity, and low PCR duplication rates (Table 1, Figure 1) with high-fidelity KAPA Target Enrichment probe panels designed using the expertise of HyperDesign (HyperDesign.com).

Table 1. New KAPA Target Enrichment designs yield low PCR duplication rates, high uniformity, and broad target coverage

Design	Genes	Target size (capture)	HQ reads	% total duplicates	Fold 80 (uniformity)	% of bases $\geq 30X$
Neurodegenerative	>98	335 Kb	1.75 M	2.78	1.38	99.83
Hereditary disease	>4100	12.3 Mb	20.00 M	1.62	1.43	97.22

Target-enriched libraries were prepared from 100 ng of Coriell NA12891 DNA following the KAPA HyperCap Workflow v3

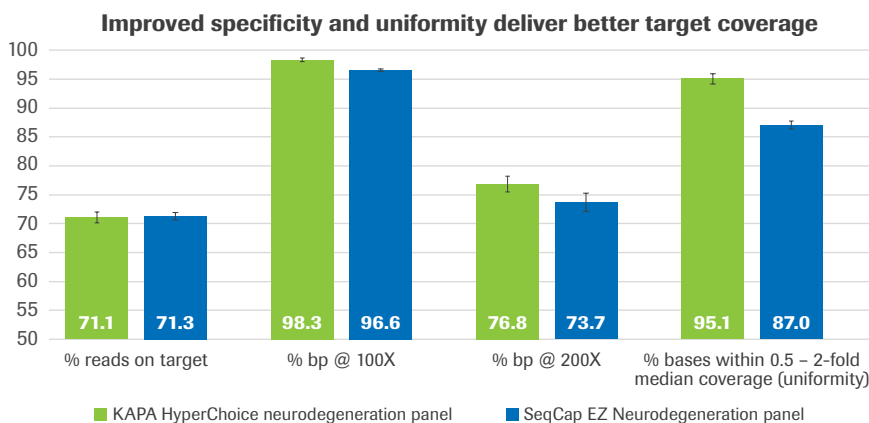


Figure 1. The new KAPA HyperChoice neurodegeneration probe panel outperforms the SeqCap EZ Neurodegeneration panel with higher uniformity and better target coverage, without the need for rebalancing. Performance was compared between the SeqCap EZ Neurodegeneration panel and a new KAPA HyperChoice panel covering similar regions. For each panel, 8 target-enriched DNA libraries were prepared from Coriell control DNA using the appropriate workflow: KAPA HyperCap v2 (SeqCap EZ) or KAPA HyperCap v3 (KAPA HyperChoice). Libraries were captured in 8-plex reactions and sequenced on an Illumina MiSeq instrument (2 x 100 bp). The KAPA HyperChoice panel was used out-of-the-box, while the SeqCap EZ panel was empirically rebalanced to improve performance.

Reliably enrich challenging, previously inaccessible genomic regions

The new online, user-friendly **HyperDesign** tool builds on two decades of *in silico* design experience to select probe panels that achieve deeper, more uniform downstream sequencing coverage with fewer sequencing reads—even across difficult-to-capture regions.

HyperDesign

Design your new probe panel in 4 easy steps:

1. **Select your organism of interest** and name your design
2. **Add your targets** by uploading gene names, bed files, or genomic coordinates—or choose from a broad list of commonly used gene identifiers
3. **Fine-tune your inputs**, review your targets, and confirm your results
4. **Submit your design** for probe selection



Streamline target enrichment with the KAPA HyperCap Workflow v3

Combine the high conversion rates of KAPA HyperPrep or KAPA HyperPlus Kits with KAPA Target Enrichment Probes to generate complex libraries from the streamlined, single-vendor-supported KAPA HyperCap workflow.

- Multiplex up to 16 samples in the same capture, and post-capture multiplex up to 96 samples in the same sequencing lane with KAPA UDI Primer Mixes; 97-384 Primer Mixes will be available soon
- Reduce workflow complexity and hands-on time with KAPA Universal Enhancing Oligos, eliminating the need for adapter-matched blocking oligos
- Automate the entire HyperCap workflow without the need for a SpeedVac—now with all hybridization and bead wash steps at 55°C

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HyperDesign, KAPA HyperChoice, and KAPA HyperExplore are all part of Roche Sequencing Solutions' new KAPA Target Enrichment portfolio. Learn more at HyperDesign.com and go.roche.com/KAPACustom.

KAPA HyperCap Workflow v3 is an integrated, <2-day sample preparation workflow for target-enriched NGS that combines KAPA Library Preparation and KAPA Target Enrichment probes. Learn more at go.roche.com/HyperCap.