Enrich DESIGN

KAPA HyperChoice and KAPA HyperExplore custom designs

Roche's demonstrated probe design and selection expertise grants you access to your regions of interest through our two new custom design products. KAPA HyperChoice Probes enable targeted enrichment of custom-defined regions of the human genome up to 200 Mb. KAPA HyperExplore Probes enable targeted enrichment of custom-defined regions of non-human genomes or complex designs up to 200 Mb. Proprietary algorithms—together with our renowned expertise in probe design and selection—allow access to challenging genomic regions. Together with the KAPA HyperCap Workflow, the KAPA Target Enrichment Probes greatly improve capture uniformity and reduce the amount of sequencing needed to efficiently identify sequence variants.

Get your research up and running faster with unlimited customization

Better by Design

- Quickly and efficiently cover custom regions with the high-performing KAPA Target Enrichment Probes
  - Rely on Roche's proven design and probe selection expertise to improve on your desired target coverage and maximize the data return from your research. Select from a wide variety of supported input formats—from gene names and accession numbers up to genomic coordinates.
- Get guidance and support from Roche's expert designers
  - Consult with Roche's expert design team for your special design needs or non-human design work. Work with experts that listen, to optimize your probe design and selection.
- Take fewer steps to optimal performance
  - Experience high performance from your very first design iteration as a result of Roche's design expertise, extensive KAPA HyperCap Workflow optimization and high-fidelity KAPA Target Enrichment probes.

Enrich with high fidelity KAPA HyperChoice and KAPA HyperExplore Probes

- Probes designed with renowned expertise and manufactured with KAPA HiFi Polymerase.
- Consistent oligo quality with NGS-based QC for all probe pools.
- Better target coverage driven by higher uniformity and low PCR duplication

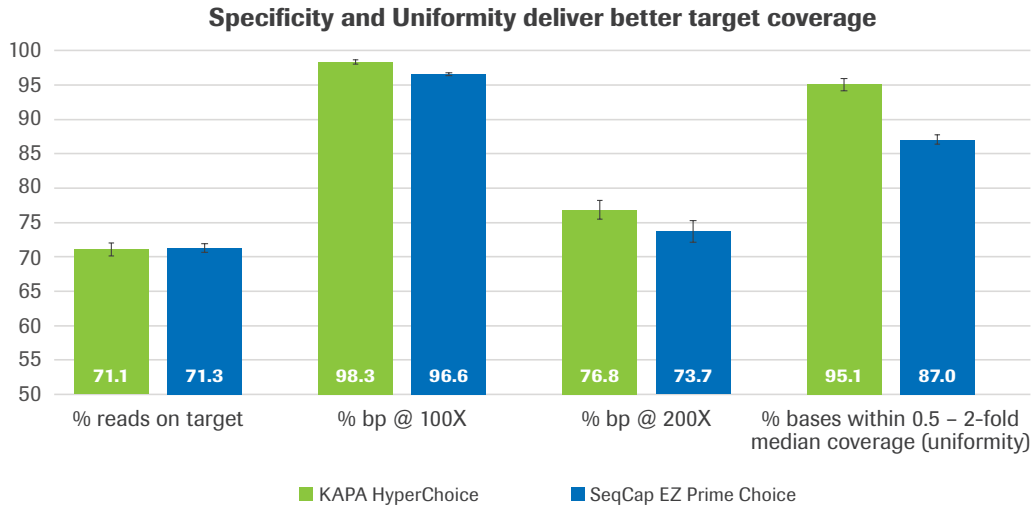

Figure 1. KAPA Target Enrichment probes perform better than SeqCap EZ Prime Probes without additional optimization. The respective HyperCap Workflow protocols were followed for both technologies, starting from coriell control DNA. 8 DNA libraries were multiplexed in each capture and sequenced proportionally to the capture target size, at 2 x 100 bp on a MiSeq system. A KAPA HyperChoice Probes version of the SeqCap EZ Neurodegenerative design was created in order to compare the performance of the two different technologies. The SeqCap EZ design was empirically rebalanced while the KAPA HyperChoice design is not. The results show that the KAPA HyperChoice Probes outperform the SeqCap EZ Probes version of the design with higher uniformity and better target coverage.

Table 1. Performance of two KAPA HyperChoice designs

Design	Genes	Target size (capture)	HQ reads	System	% total duplicates	Fold 80 (uniformity)	% of bases ≥30X
Neurodegenerative	>98	335 Kb	1,75 M	NovaSeq6000	2.78	1.38	99.83
Hereditary disease	>4100	12.3 Mb	20.00 M	NovaSeq6000	1,62	1,43	97.22

First iteration designs, showing very low PCR duplication with high uniformity (low Fold80 base penalty) and broad target coverage (% of bases covered at ≥30X) when run on a NovaSeq6000 system. For both designs, we followed the KAPA HyperCap Workflow v3.0 starting from 100 ng of NA12891 DNA. Metrics are average of six replicates of single captures per design.

Learn more at **www.hyperdesign.com**

Published by:

Roche Sequencing Solutions, Inc.
4300 Hacienda Drive
Pleasanton, CA 94588

sequencing.roche.com

MC--04057 03/20