Roche’s SeqCap EZ Prime Exome offers comprehensive exome coverage and enhanced uniformity with low sequencing requirements. The design targets the GRCh38/hg38 genome assembly. With a compact capture target of 37 Mb tiling 98.1% of the coding regions based on the latest CCDS Rel.20, the design also includes 340 SNPs which can better enable sample tracking. Roche Sample Prep Solutions, which offers workflows for different sample types and applications that are proven, simple and complete, now includes SeqCap EZ Prime Exome for a fully integrated whole exome sequencing solution.

Features
- Covers 96.3% of the primary target (32.9 Mb) at 20x depth with only 40 M high-quality reads
- Fast, easy and integrated 1.5-day HyperCap Workflow
- SNP targets included for sample identification

Benefits
- Uniform coverage with minimized sequencing costs
- Single-vendor support for a complete sample prep solution
- Enhanced sample traceability without the need to spike-in an identification panel

1September 8, 2016, 2When using 5 μg of amplified library pool in the hybridization For Research Use Only. Not for use in diagnostic procedures.
SeqCap EZ Prime Exome enables high sequencing efficiency

- Optimized for uniformity and high on-target rate
- Starting with 100 ng of DNA input, SeqCap EZ Prime Exome covers at least 96% of the target bases at a depth of ≥20x with 20 M 2 x 100 bp read pairs (40 M high-quality reads)

**Performance metrics**

<table>
<thead>
<tr>
<th>Total duplicate rate</th>
<th>% On-target (Unique reads on primary target)</th>
<th>% On-target (Unique reads on primary target, +/- 100 bp)</th>
<th>Fold 50 base penalty</th>
<th>Mean target coverage</th>
<th>Median target coverage</th>
<th>% bases ≥20</th>
<th>% bases ≥30</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.6%</td>
<td>73.5%</td>
<td>68.9%</td>
<td>1.63%</td>
<td>55x</td>
<td>49x</td>
<td>96.3%</td>
<td>86.8%</td>
</tr>
</tbody>
</table>

**Figure 1.** SeqCap EZ Prime Exome exhibits high on-target rates with greater coverage depth. Samples were 8-plexed and processed in duplicates with HyperCap User’s Guide v2.1 and a simple exome-specific modification outlined in the technical note “How to … Increase sequencing efficiency with the SeqCap EZ Prime Exome”. The 8-plex pools were sequenced on a HiSeq 2500 System with 2 x 101 bp reads using a High Output v4 Kit. The numbers across the bars represent the average of the samples tested.

**Broad coverage of medical-research relevant content**

- SeqCap EZ Prime Exome exhibits higher sequencing coverage of ACMG, ClinVar, and medical-research relevant targets, when compared to Supplier I’s exome
- Discover more, sequence less with the SeqCap EZ Prime Exome which offers better coverage with 27% less sequencing than Supplier I’s exome

**Figure 2.** SeqCap EZ Prime Exome shows better coverage of the relevant content with less sequencing. The two exomes were sequenced proportionally to their target size, and at least 8 samples per exome were prepared according to each manufacturer’s instructions and sequenced on a HiSeq 2500 System. The same Coriell DNA samples were used with both exomes for the most accurate comparison.
Integrated sample tracking with great SNP detection performance

Researchers often use unique sample labelling protocols or spike-in controls to unambiguously trace each sample throughout the processing workflows. However, any external labeling and/or spike-in process is also prone to sample handling errors.

- SeqCap EZ Prime Exome targets 340 informative SNP positions that may be used as a sample intrinsic unique identification method, to allow sample tracking throughout the testing workflow
- With 40 M reads, the sample tracking SNP positions are covered on average ≥40x, with more than 300 of the 340 positions covered ≥20x
- The SNP positions have been selected based on literature and customer feedback
- SeqCap EZ Prime Exome enables accurate and convenient sample tracking by targeting carefully selected informative SNP positions and by delivering high overall SNP detection performance (Fig. 3)

**Figure 3.** SeqCap EZ Prime Exome exhibits high SNP detection sensitivity, specificity and genotype concordance. Samples were 8-plexed and processed in duplicates with HyperCap User’s Guide v2.1 protocol and a simple exome specific modification outlined in the technical note “How to … Increase sequencing efficiency with the SeqCap EZ Prime Exome”. The 8-plex pools were sequenced on a HiSeq 2500 System with 20 M 2 x 101 bp reads using a High Output v4 Kit.

The HyperCap Workflow enables high exome performance

- The HyperCap Workflow combines the high library complexity and high conversion rate of the KAPA HyperPrep and HyperPlus Kits with Roche target enrichment creating a streamlined, single vendor supported workflow.
- The HyperCap Kits provide a complete, streamlined NGS sample prep solution. With the inclusion of Roche’s Universal Blocking Oligos (UBOs) and KAPA Dual-Indexed (96) Adapters, the HyperCap Workflow reduces complexity and enables greater multiplexing.
  - **Roche UBOs:** Eliminates the need for adapter-matched blocking oligos, which reduces hands-on time and workflow complexity
  - **KAPA Dual-Indexed (96) Adapters:** Enable greater multiplexing by utilizing up to 96 sample barcodes

![HyperCap Workflow Diagram](image-url)
Process more samples successfully, get more information from every sample and optimize your sequencing resources with solutions that are **Proven, Simple and Complete**.

### Design Share

SeqCap EZ Prime Exome is now available as part of Roche Sequencing Solutions’ Design Share Portfolio. Design Share makes it easy to access pre-designed NGS panels that are developed by Roche Sequencing Solutions or in collaboration with researchers around the world.

Our newest panels include: SeqCap EZ Cardiology Panels and SeqCap EZ Inherited Disease Panel. To access the full portfolio, gene list and design files, please visit: [sequencing.roche.com/designshare](http://sequencing.roche.com/designshare).

### Ordering Information

**Product Type:** SeqCap EZ Share Prime Choice XL  
**Design Name:** 170907_HG38_CCDS1X_REZ_HX1  
**Internal Reference #:** 4000035460

<table>
<thead>
<tr>
<th>Catalog No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>08333092001</td>
<td>SeqCap EZ Share Prime Choice XL 24 Rxn</td>
</tr>
<tr>
<td>08333114001</td>
<td>SeqCap EZ Share Prime Choice XL 96 Rxn</td>
</tr>
<tr>
<td>08333122001</td>
<td>SeqCap EZ Share Prime Choice XL 384Rxns</td>
</tr>
</tbody>
</table>

### References

3. As selected by GeneTests™  