Product Profile

GeneRead™ QIAact Custom Panels

For targeted sequencing of the variants most relevant to your medical research

Custom target enrichment solutions for NGS

One of the greatest challenges faced by a laboratory joining the next generation sequencing (NGS) revolution is dealing with the sheer volume and complexity of sequence data generated. In a clinical research context, one way to minimize this problem is to use a targeted sequencing method: with a gene panel that targets only the genomic regions relevant to a specific disease/diseases, a smaller, more manageable data set is generated. This makes data analysis simpler and enables you to focus on the genes/regions that are relevant to your research. The GeneRead QIAact Custom Panels in combination with the QIAGEN GeneReader™ NGS System workflow, provide a customizable answer to target enrichment for DNA and RNA.

The GeneRead QIAact Custom Panels provide:

- An optimized design process for selection of genomic targets
- Targeting of all mutation types: SNVs, InDels, CNVs and fusions
- Sample flexibility: for use with FFPE or liquid biopsy samples
- Uniform sequence coverage enabled by UMI technology
- The benefit of integration as part of a complete Sample to Insight NGS workflow including full bioinformatics analysis and interpretation

A unique panel design process

We handle each custom panel design process as a collaboration between your lab and our team of NGS specialists. Consult with us about your specific requirements and let us help you to develop a panel that will target the genes or regions of most value to your research (Figure 1).

Leveraging the curated mutational information contained within the industry leading QIAGEN® KnowledgeBase (Figure 2), we can help you to identify the most actionable variants in your genomic regions of interest. With the possibility to incorporate all genetic variant types, ▷

including somatic mutations, single nucleotide variants (SNVs), copy number variants (CNVs), small insertions and deletions (InDels) and fusions, the GeneRead QIAact Custom Panels offer a high level of assay flexibility.

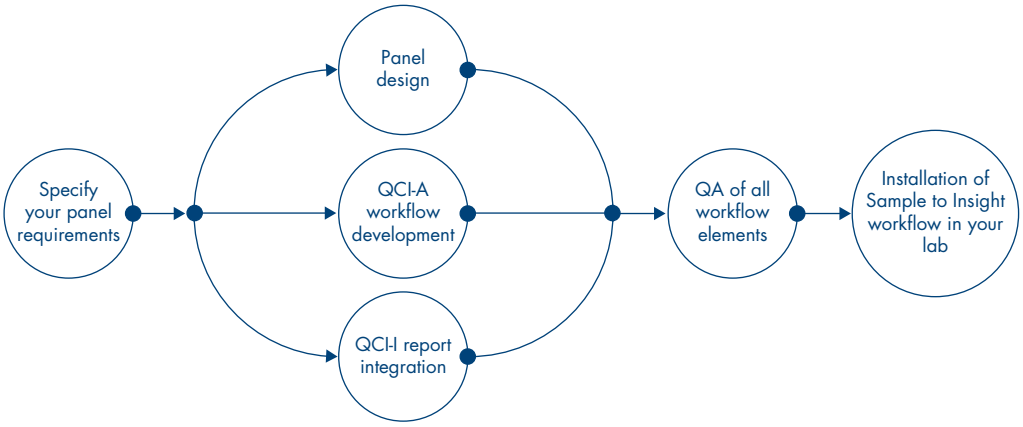

Figure 1. Our custom panel development workflow. Starting with your list of requirements, our target enrichment experts use a unique design approach to build a gene panel of unparalleled relevance, including a fully integrated bioinformatics analysis pipeline tailored to your gene panel. All elements of the Sample to Insight workflow undergo rigorous testing and QA inspection before installation in your lab.

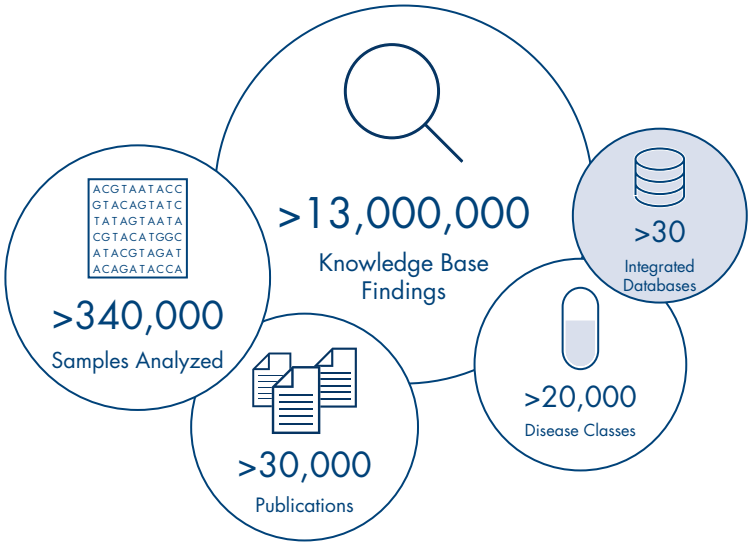

Figure 2. The QIAGEN Knowledge base contains data from various sources curated over a period. The comprehensive information contained within the database is leveraged in our custom panel development pipeline.

A complete Sample to Insight assay

In combination with the GeneReader™ NGS System, the GeneRead QIAact Custom Panel option delivers not just a target enrichment solution, but a complete sample to result assay. Each custom panel is tested and optimized along the whole workflow in combination with the secondary data analysis tool, QCI™ Analyze, to ensure high performance as an integrated part of the system (Figure 3).

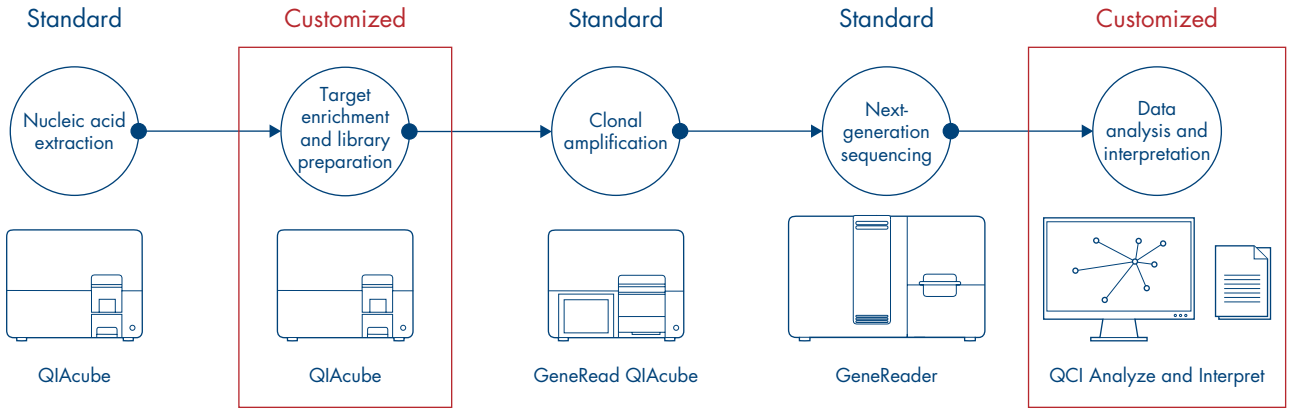

Figure 3. The GeneReader NGS System workflow with customizable elements indicated.

Highest accuracy and analytical performance possible

A key feature of the GeneRead QIAact Custom Panel design is the inclusion of unique molecular indices (UMIs). This feature enables the identification of individual molecules prior to their amplification by PCR. The benefit for the sequencing process is that duplicate reads can not only be identified, but actively used in the bioinformatics step for correction of PCR and sequencing artefacts.

Ordering Information

Product	Contents	Cat. no.
GeneRead QIAact DNA Custom Panel	Library preparation and target enrichment reagents to process 500 samples, including customer-specific primers designed to enrich specific genomic regions, and custom built QCI Analyze bioinformatics pipeline	181990
GeneRead QIAact RNA Custom Panel	Library preparation and target enrichment reagents to process 500 samples, including custom-designed primers designed to enrich selected RNA fusions, and QCI Analyze bioinformatics pipeline.	181980

The GeneReader NGS System is for Research Use Only. Not intended for diagnostic procedures.

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at www.qiagen.com or can be requested from QIAGEN Technical Services or your local distributor.

Learn more about the GeneReader NGS System at **www.genereaderNGS.com**.

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