

Next-generation sequencing workflow, 4/13:86

Qiagen offers a sample-to-result next-gen sequencing workflow designed to enable the routine use of NGS technology in areas such as clinical research and diagnostics.

Qiagen's NGS workflow is an ecosystem of products and services that offer automated processes from primary sample to digital result.

The company's streamlined and automated workflow is built on components that include Qiagen's QIAcube for fully automated nucleic acid isolation and purification as well as library preparation; new GeneRead DNAseq target enrichment gene panels for NGS applications based on the GeneGlobe collection of more than 60,000 fully annotated molecular assays; QIAcube NGS, a QIAcube-based instrument for automated sequencing template preparation; Gene-

Reader, an NGS benchtop sequencer that is highly flexible and scalable; and a software solution for automated result analysis.

A key element of the NGS workflow is GeneReader, which has a turntable design that allows continuous loading of up to 20 flow cells for independent and parallel sequencing. Individual patient samples also can be handled cost efficiently without indexing or bar coding.

Qiagen has exclusively licensed sequencing-by-synthesis chemistry for its NGS workflow, which allows for cost-efficient runs due to a unique combination of dark and fluorophore-labeled "terminator nucleotides." This chemistry provides sequencing accuracy with difficult DNA motifs such as DNA homopolymers.

The company's NGS workflow development program is on track and in the "verification phase" of development, with testing underway to ensure that performance and reliability match customer expectations. A version of the NGS workflow based on the modular QIASymphony automation platform also is in development.

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