CELEMICS

Viral / Pathogen Research

Customized NGS Solutions Tailored for Virus Detection and Pathogen Research

For Research Use Only
Not for use in diagnostic procedures

CELEMICS NGS Solution for Virus Detection

Celemics' Hybridization Capture technology offers customized NGS solutions optimized for Virus Detection and Pathogen Research. With our proprietary probe design technology, **We provide NGS panel development and analysis services capable of detecting both known and emerging infections caused by viruses, bacteria, fungi, and parasites, while accurately identifying the whole genome sequences of pathogens.** In addition to our existing panels, we also offer custom panel development and services tailored to meet specific customer requirements, including pathogen types and sample types.

Accurate Detection in Low-Viral Loads

Proprietary Probe Technology and Hybrid Capture-Based Target Enrichment for Accurate Virus Detection and Genome Analysis in Complex Samples.

Whole Genome and Variant Analysis

WGS of Various Pathogens, Including Viruses and Fungi, Provides Critical Data for Mutation Tracking and Public Health and Vaccine Development.

Bioinformatics Analysis and Software

Proprietary Analysis Software (Celemics Virus Verifier) Developed for Panel Data Analysis.

High-Quality Custom Panels and Services

Flexible Provision of Optimized Custom Panels or Services Tailored to Customer Needs.

Selected Success Case | CELEMICS NGS Panels for Virus Detection and Pathogen Research

Celemics' virus panels are designed to rapidly and accurately detect pathogenic viruses in humans and animals, tailored to meet market demands. **They are designed for whole genome sequencing (WGS) of viruses, as well as sequencing all associated mutations and variants.** In addition to our existing panels, we also offer custom panel development and analysis services for various pathogens, including viruses and fungi. (See reverse for details)

Comprehensive Respiratory Virus (CRV) Panel

Target Info	9 types / 39 virus strains, including SARS-CoV-2
Target Size	706 Kb

Syndrome-specific Panels (Target Enrichment Panel for each syndrome)

Target Info	Multiple pathogens selected for each syndrome
Target Size	10 Kb - 10 Mb

Porcine Pathogens: Viral Whole Genome Capture Panels (PRRSV / ASFV)

Target Info	Whole genome of PRRSV / ASFV 26 strains
Target Size	16 Kb (PRRSV) / 192 Kb (ASFV)

Bacteria-specific Capture Panels

Target Info	Multiple gene regions in Bacteria
Target Size	10 Kb - 10 Mb

*Compatible with Various Sequencing Platforms, Including Illumina, ThermoFisher, and MGI.

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Why Hybridization Capture Enrichment?

Hybrid Capture-Based Target Enrichment is **an effective method for detecting specific pathogens in samples where they are likely to be present, or when identifying multiple known pathogens in primary samples.** Celemics' Hybridization Capture Enrichment technology allows for sensitive and accurate detection of specific pathogens, enabling efficient identification and in-depth analysis even in complex or low-concentration samples.

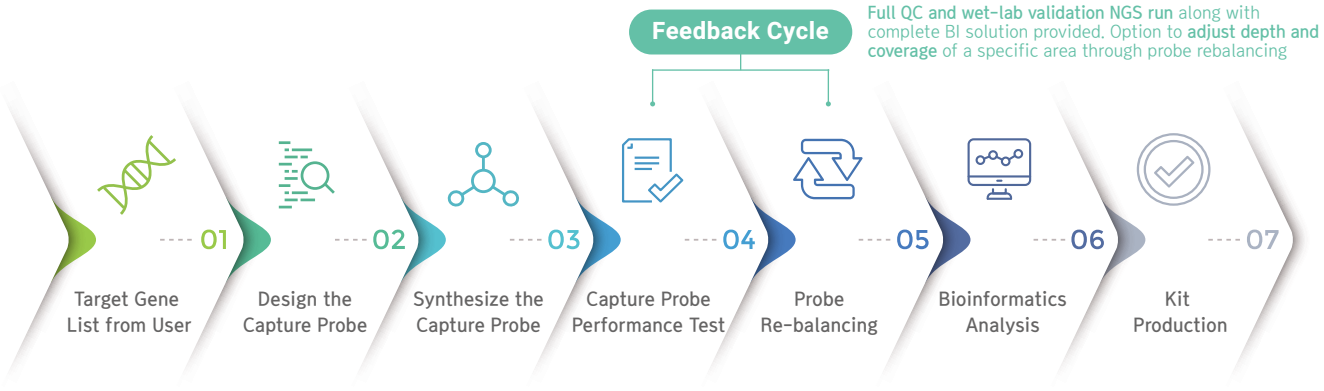
[Advantages of Celemics Target Enrichment Technology Compared to Conventional Method]

	Advantages	Disadvantage
Conventional GBS	• Sequencing of multiple samples due to lower amount of data required compared to WGS	• Limited biomarkers available due to limited conserved regions, reducing overall resolution • Unable to detect SNPs in the restriction sites
Microarray	• Higher reproducibility than conventional GBS(Genotyping-by-Sequencing)	• Hard to customize new targets (novel biomarkers) • Low flexibility to meet various kinds of genotyping
PCR	• Cost-effective for low number of markers • Easy and fast analysis	• Limited number of biomarkers to analyze at once • **Inappropriate for mass-analysis of biomarkers**
Celemics Target Enrichment	• **Cost Saving:** Highly cost-effective when assessing multiple markers • **Flexible Customization:** Novel biomarkers can be added or removed • **Comprehensive Analysis:** Including novel SNP(Single-nucleotide polymorphism) discovery • **Exceptional Performance:** Celemics proprietary oligo design technology • **Wide Compatibility:** Compatible with a wide range of sample type	

Customized NGS Panel Design and Manufacture Workflow

Celemics' core technologies are incorporated when designing and manufacturing exclusive customized NGS panels. For every panel Celemics designed, we perform the actual validation NGS run to confirm the panel performance. After our validation run, probe sets are rebalanced and optimized, if necessary, through feedback cycle, and thereby provide robust customized NGS panel with outstanding performance and maximized sequencing efficiency.

[Celemics Customized Panel Design and Manufacturing Process]



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