BioVendor Group NGS

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fastGEN

A breakthrough system for a one-step NGS library preparation

ENG

GTTCAATATTGCGATGT
CCGATGGTACAGGCAC
GATGCTACAGGCCAGC

0100001 1010101 1001 10
0001001 1011010 111010 1

Meet the fastGEN technology

Introducing our cutting-edge sequencing solution fastGEN, built on the advanced NGS technology for unparalleled efficiency and user-friendliness.

With an easy-to-use software and diagnostic panels tailored for DNA and RNA analysis, coupled with prompt service and expertise from our application specialists, we are driving a revolution in laboratory diagnostics speed and the availability of personalized medicine.

BioVendor Group developed user-friendly diagnostic NGS kits with excellent analytical parameters and high-speed processing.

Meet our NGS technology team

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It’s faster. Way faster!

Quick & easy detection of mutations in oncomarkers

The fastGEN technology is based on a rapid and easy-handling workflow what significantly lowers the probability of mistakes. The principle of fastGEN is ultra-deep sequencing of short amplicons obtained by a single polymerase chain reaction with specially labeled hybrid primers. FastGEN technology strategically focuses on codons with established treatment options, marking a revolutionary advancement in personalised medicine.

Unique

Simple, ultra-sensitive, specific, and effective technology

Fast

Excellent speed (<30 min hands-on time)

Reliable

Significantly lower probability of mistakes, uniform coverage for different amplicons and different samples

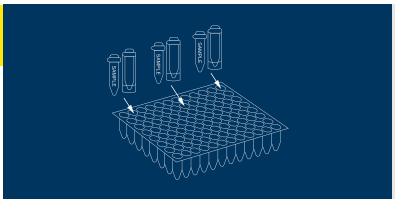
Robust

Robustness achieved by using short amplicons obtained by a single polymerase chain reaction with special tagged hybrid primers

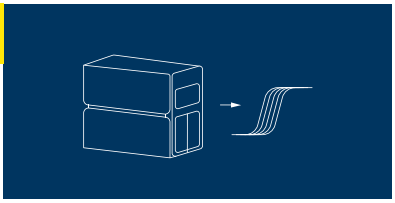
Type of samples suitable for fastGEN technology

- ☑ **DNA isolated from tumor tissue**
- ☑ **DNA isolated from FFPE tissue samples**
- ☑ **Circulating tumor DNA isolated from blood**

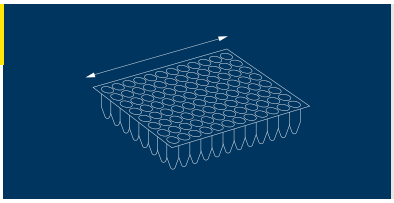
State-of-the-art prototyping workflow

1. 

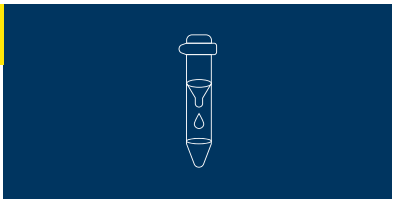
   Samples and Master Mixes with different indexes are mixed (10 min).

2. 

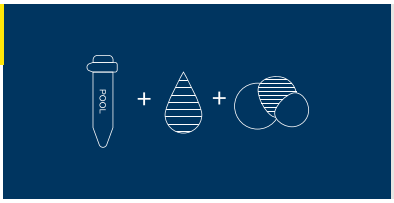
   Reactions are set up using a Real-Time PCR device.

3. 

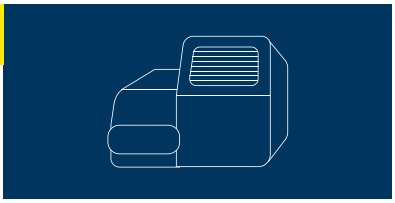
   Indexed amplicons are pooled (5 min).

4. 

   DNA is purified (10 min).

5. 

   DNA is diluted and denatured (10 min).

6. 

   DNA is sequenced using an Illumina sequencer.

7. 

   Raw data are analysed with GENOVESA software.

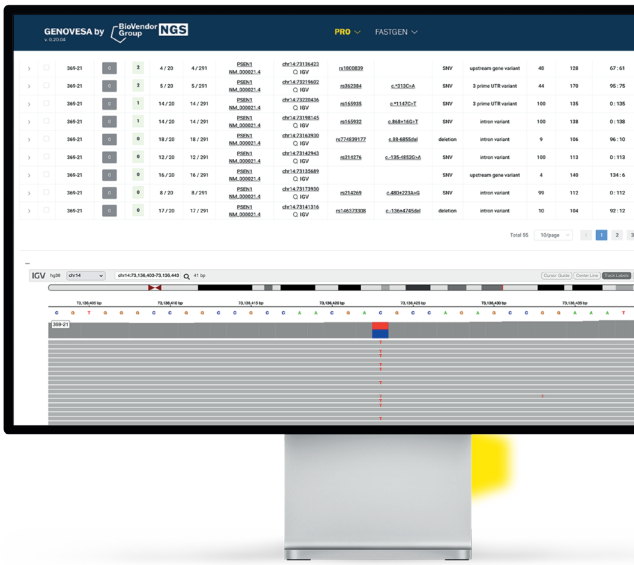
Total time: 4 hours | Hands-on-time: 30 minutes

GENOVESA

Cloud-based database bioinformatics and interpretation system

Key features

- **User friendly**
- **Automatized bioinformatics analysis of NGS data**
- **Advanced quality control of sequencing data**
- **Easy variants filtration**
- **Local Clinical Variants Database**
- **Visualization of NGS data**
- **Internal interpretation of variants and sharing between clinics**
- **Clinical report generation**



From FASTQ to clinical report

GENOVESA enables evaluation of data from small panels, through clinical exome (CES) whole exome data (WES) to whole genome sequencing (WGS) data. It includes a wide range of annotation databases and the possibility of individual customization. Advanced data quality control with the capability of own interpretation of variants and comments. Complete clinical management with integration of International Classification of Diseases (ICD) and HPO terminology.

Sequencing technology

GENOVESA supports analysis of conventional sequencing data (FASTQ, BAM, VCF) regardless of what sequencing technology was used – Illumina, MGI, PacBio, Oxford Nanopore Technologies, Genapsys and many others.

Databases and data sharing

GENOVESA also serves as a database for storing variants, with the possibility of sharing data between individual clinics.

Security

GENOVESA prioritizes data security through HTTPS encryption. We do not rely on third-party providers like Google or Amazon; instead, we host your data in our secure data center located in Prague. We do not collect any sensitive patient data, GENOVESA is fully GDPR compliant.

fastGEN BCR::ABL1 Cancer kit for hemato-oncology

Molecular monitoring of patients with chronic myeloid leukemia (CML) is a key part of the treatment protocol during the use of tyrosine kinase inhibitors (TKIs). The BCR::ABL1 fusion gene produces the pathological, constitutively activated tyrosine kinase Bcr-Abl, which is responsible for the uncontrolled proliferation of hematopoietic cells and their reduced response to proapoptotic signals.

The fastGEN technology provides a method of sensitive, specific and time-efficient examination of the mutational status of BCR::ABL1 using NGS technology.

- **The kit covers codons 237-510**
- **Major, minor and micro break-point**
- **Extraordinary sensitivity**
- **Monitoring the level of minimal residual disease (MRD)**

Single technology, multiple opportunities

Kit and data analysis in one package

Kits

Cat. No.	Product	Gene	Detail	Status
RDNGS0001	fastGEN Solid Cancer kit	*NRAS* *KRAS* *BRAF*	codons: 12, 13, 59, 60, 61, 117 codons: 12, 13, 59, 60, 61, 117, 146 codons: 600	CE IVD
RDNGS0002	fastGEN Lung Cancer kit	*EGFR*	exons: 18, 19, 20, 21	CE IVD
RDNGS0003	fastGEN Brain Cancer kit	*IDH1* *IDH2*	codons: 132 codons: 172	CE IVD
RDNGS0007	fastGEN *PIK3CA* Cancer kit	*PIK3CA*	exons: 2, 3, 5, 7, 8, 10, 14, 21	RUO
RDNGS0008	fastGEN *TERT* Cancer kit	*TERT*	promotor	RUO
RDNGS0009	fastGEN *TP53* Cancer kit	*TP53*	exons 2–11, 2 non-canonical exons between exons 9 and 10, and adjacent introns)	RUO
RDNGS00011	fastGEN *BCR::ABL1* Cancer kit	*BCR::ABL1*	codons: 237–510	RUO
RDNGS0010	fastGEN *POLE/CTNNB1* Cancer kit	*POLE* *CTNNB1*	exons: 9, 11, 13, 14 exons: 3, 7, 8	RUO
RDNGS0016	fastGEN *H3F3A/IDH1/2* Cancer kit	*H3F3A* *IDH1* *IDH2*	codons: 7–40 codons: 132 codons: 140, 172	RUO
RDNGS1001	fastGEN Solid Cancer kit II	*NRAS* *KRAS* *BRAF*	codons: 12, 13, 59, 60, 61, 117 codons: 12, 13, 59, 60, 61, 117, 146 codons: 594–601	RUO

CE IVD *The kits are CE-IVD certified and intended for professional use.*

Kit components

The kit contains ready-to-use Master Mixes with 16 sample indexes, read1, read2 seq primers and an index seq primer.

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