

**BioVendor
Group**

NGS

BIOVENDOR.GROUP

ENG

fastGEN

A breakthrough system
for a one-step NGS
library preparation



GTTCAATATTGCGATGT

CCGATGGTACAGGCAC

GATGCTACAGGCCAGC

0100001 1010101 100110

0001001 1011010 1110101

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 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



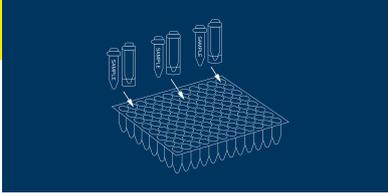
DNA isolated from FFPE tissue samples



Circulating tumor DNA isolated from blood

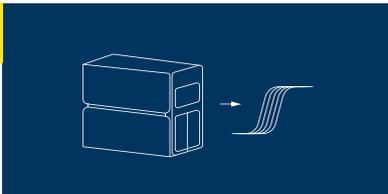
State-of-the-art prototyping workflow

1.



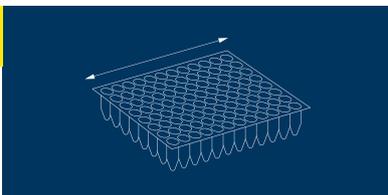
Samples and Master Mixes with different indexes are mixed (10 min).

2.



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

3.



Indexed amplicons are pooled (5 min).

4.



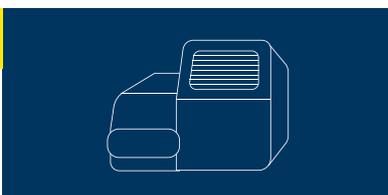
DNA is purified (10 min).

5.



DNA is diluted and denatured (10 min).

6.



DNA is sequenced using an Illumina sequencer.

7.



Raw data are analysed with GENOVESA software.



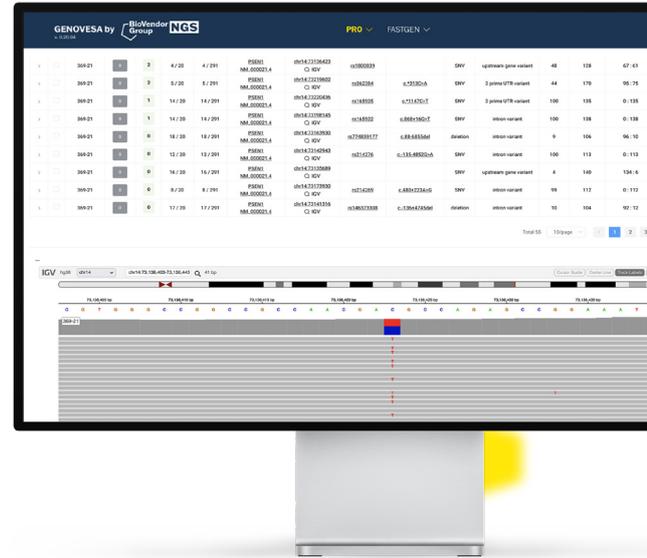
Total time: 4 hours | Hands-on-time: 30 minutes

GENOVESA

Cloud-based database bioinformatic and interpretation system

Key features

- User-friendliness
- Automatized bioinformatic analysis
- 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
- Custom baseline creation



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.

Find out more about the software on our [website](#).



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)**

fastGEN

BCR::ABL1

AGATGGTACAGGCC
GTTCAATATTGCGA
CCGATGGTACAGGC
GATGCTACAGGCCA
1000011010101100
0010011011010111
1000100101011010
11100101100001101
00010011011010111

Single technology, multiple opportunities

Kit and data analysis in one package

Kits

| Cat. No. | Product | Gene | Detail | Status |
|---------------------------|------------------------------------|-------------------|--|--------|
| RDNGS0011 | fastGEN BCR::ABL1 Cancer Kit | ABL1, BCR | BCR::ABL1: minor and major breakpoint | RUO |
| RDNGS0003 | fastGEN BRAIN Cancer Kit | IDH1, IDH2 | IDH1: codon 132 IDH2: codons 140 and 172 | CE IVD |
| RDNGS0020-32 | fastGEN EGFR/HER2 Cancer Kit | EGFR, HER2 | EGFR: exons 18, 19, 20 and 21 HER2: exons 7, 8, 17, 19, 20 and 21 | RUO |
| RDNGS0016 | fastGEN H3F3A/IDH1/2 Cancer Kit | H3F3A, IDH1, IDH2 | IDH1 - codon 132 IDH2 - codons 140 and 172 H3F3A - codons 28 and 35 | RUO |
| RDNGS0018 | fastGEN Intolerance Kit I | ALDOB, AOC1, MCM6 | ALDOB1: rs118204429, rs387906225, rs1800546, rs76917243, rs78340951, rs77718928, rs370793608, rs764826805 AOC1: rs10156191, rs1049742, rs2268999, rs1049793, rs2052129 MCM6: rs4988235, rs182549 | RUO |
| RDNGS0002 | fastGEN LUNG Cancer Kit | EGFR | exons 18, 19, 20 and 21 | CE IVD |
| RDNGS0021 | fastGEN MPN Cancer Kit | CALR, JAK2, MPL | CALR: exon 9 JAK2: 12, 13, 14, 16 MPL: 4, 10, 12 | RUO |
| RDNGS0019 | fastGEN MSI Kit | 12 genes | Microsatellite stability | RUO |
| RDNGS0007 | fastGEN PIK3CA Cancer Kit | PIK3CA | exons 2, 3, 5, 7, 8, 10, 14 and 21 | RUO |
| RDNGS0010 | fastGEN POLE/ CTNNB1 Cancer Kit | POLE, CTNNB1 | POLE: exons 9, 11, 13 and 14 CTNNB1: exons 3, 7 and 8 | RUO |
| RDNGS0001 | fastGEN SOLID Cancer Kit | NRAS, KRAS, BRAF | NRAS, KRAS: codons 12, 13, 59, 60, 61, 117 and 146; BRAF: codons 600 | CE IVD |
| RDNGS1001 | fastGEN SOLID II Cancer Kit | NRAS, KRAS, BRAF | NRAS, KRAS: codons 12, 13, 59, 60, 61, 117 and 146; BRAF: codons 600 and 601 | RUO |
| RDNGS0008 | fastGEN TERT Cancer Kit | TERT | promotor and mutations C228T a C250T | RUO |
| RDNGS0009 RDNGS0009-32 | fastGEN TP53 Cancer Kit | TP53 | exons 2-11, 2 non-canonical exons (between exon 9 and 10) and adjacent introns (min 6 nt) | RUO |
| RDNGS0109 RDNGS0109-32 | fastGEN TP53 Cancer Kit | TP53 | exons 2-11, 2 non-canonical exons (between exon 9 and 10) and adjacent introns (min 6 nt) | 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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CCGATGGTACAGGCACA
GATGCTACAGGCCAGCT
0100001 1010101 10011010
0001001 1011010 11101010

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