

## FLAME BEADS Viral DNA/RNA

Extraction kit

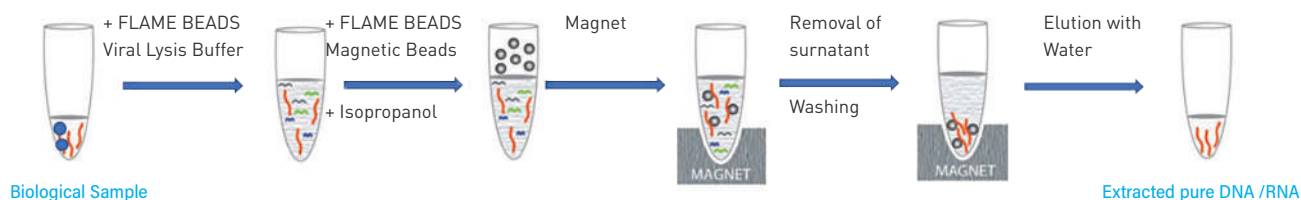


### Overview

The FLAME BEADS Viral DNA/RNA Extraction Kit is designed for the rapid and efficient isolation of viral DNA and RNA from serum, swabs, plasma, saliva, and other body fluids. The magnetic beads technology enables the isolation of high-quality nucleic acids that are free of proteins, nucleases, and other impurities. The purified nucleic acids are ready for direct use in downstream applications such as Next-Gen sequencing, hybridization-based, and RT/qPCR detection.

### Features

- Consistent and reproducible results
- High yield and high extract purity
- Temperature-stable components
- Minimal hands-on time
- Direct usage of extracted nucleic acid in downstream applications
- Compatible with the most common automated systems



### GVS FLAME BEADS VIRAL DNA/RNA ORDER INFORMATION

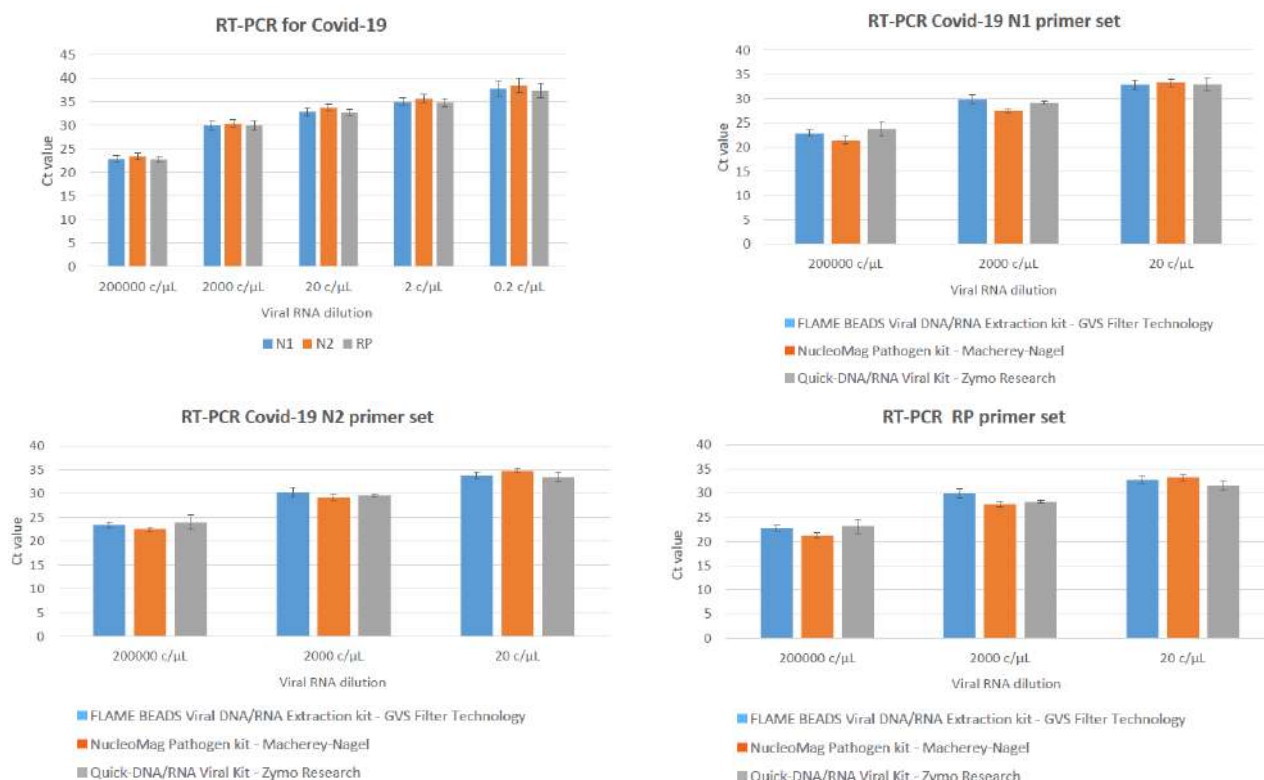
CODE	PRODUCT	SIZE
FLB0001	Flame Beads Viral RNA extraction kit - 8x96 test	768 test
FLB0002	Flame Beads Viral RNA extraction kit - 1x96 test	96 test

The FLAME BEADS Viral DNA/RNA Extraction kit is based on a proprietary technology. DNA/RNA viruses are lysed quickly and efficiently using the lysis buffer, which is a highly concentrated solution of chaotropic salt. When combined with isopropanol, the FLAME BEADS Lysis buffer creates optimum conditions for nucleic acid binding to the BEADS magnetic beads. Contaminants such as salts, metabolites, and soluble macromolecular cellular components are removed in the wash process. The nucleic acids are eluted in RNase-DNase free water and are then ready for use in subsequent reactions, including Real-Time PCR, Sanger Sequencing, NGS, PCR, and other enzymatic reactions.

The detection limit for certain viruses depends on the sensitivity of the individual PCR or RT-PCR assays. The kit is validated for COVID-19 diagnosis by the laboratory of U.O. Microbiologia, Pievesestina, Cesena. Due to the great demand for reagents for RNA extraction in the period of COVID-19 emergency, GVS also offers a big size for the analysis of 8x96 samples. The FLAME BEADS Viral DNA/RNA Extraction Kit is compatible with the most common automated systems or usable for manual procedure.

# Reagents & Chemicals

## Detection of Synthetic SARS-CoV-2 virus control



### Real-time RTPCR detection of SARS-CoV-2 N1, N2 and RNaseP genes using FLAME BEADS Viral DNA/RNA Extraction Kit and its competitors (manual procedure).

2019nCoV Positive Control (Norgen) from 200000 to 20 copies /mL was spiked in 150μL of Viral Transfer Medium (Vircell). Samples were processed using FLAME BEADS Viral DNA/RNA Extraction Kit, NucleoMag Pathogen Kit (Macherey-Nagel) and Quick-DNA/RNA Viral Kit (ZymoResearch) according to the manufacturer's protocol and Real-time RT-PCR was performed following the CDC protocol: 5μL of extracted samples were run using TaqPath 1 StepRT-Qpcr MasterMix, CG (ThermoScientific) and CDC Diagnostic panel primer sets (N1, N2 targeting two nucleocapsid genes and RNase P primers targeting human RNase P gene). Ct values averaged from three independent experiments. Error bars represent the standard deviation.

### Validation for COVID-19 diagnostics: Automated RNA Extraction for COVID-19 Detection in Clinical Swab Samples

**Sensitivity: 100%**  
**Specificity: 100%**

KIT	Reference RNA ISOLATION KIT (U.O. Microbiologia, Pievesistina)		
	+	-	Total
FLAME BEADS Viral DNA/RNA Extraction Kit	+	45	0
	-	0	121
	Total	45	121

### Concordance between test results obtained with FLAME BEADS Viral DNA/RNA Extraction kit and the Reference RNA Isolation kit for COVID-19 diagnostics.

FLAME BEADS Viral DNA/RNA Extraction kit has been validated for RNA isolation from SARS-CoV-19 clinical samples on 166 samples (45 positive samples and 121 negative samples) from nasopharyngeal swabs. RNA isolation was performed in parallel using FLAME BEADS Viral DNA/RNA Extraction kit and a reference kit. RNA was amplified with Allplex™ 2019-nCoV Assay (Seegene).

### Compatible with automated procedure

- TECAN Freedom EVO
- Masmec Biomed OMNIA
- Allsheng Auto-Pure
- Perkin Elmer Chemagic 360

**Excellent reproducibility of results for a viral RNA-based internal positive control within runs (intra-assay) and between runs (inter-assay)**

	Reproducibility		
	Mean CT	St. Dev	CV%
Intra-assay variability	25.3	0.76	3.02
	25.93	0.89	3.44

### Reproducibility of test results obtained with FLAME BEADS Viral DNA/RNA Extraction kit for COVID-19 diagnostics.

Mean Ct, Standard deviation and Coefficient of Variation (CV%) of test results obtained on a viral RNA-based internal positive control on RNA extracted with FLAME BEADS Viral DNA/RNA Extraction kit from nasopharyngeal swabs clinical samples. RNA was amplified with Allplex™ 2019-nCoV Assay (Seegene).

- ThermoFisher Kingfisher
- Qiagen BioSprint
- Applied Biosystems MagMax
- Tecan DreamPrep NAP