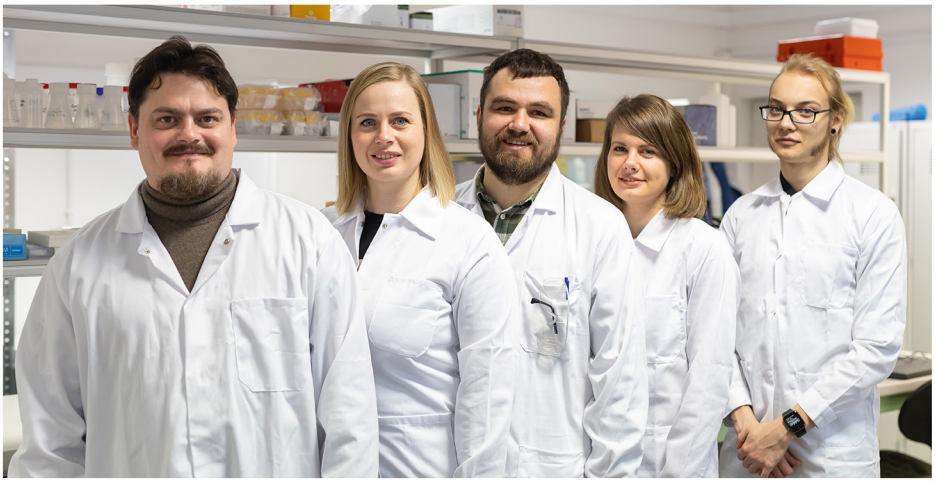
PCR solutions for molecular diagnostics

klever lab®

catalogue 2024/2025

About us

ISO 9001 ISO 13485



KleverLab LLC, a European biotechnological company based in Warsaw, boasts a highly qualified team of professionals with over 15 years of experience in developing and successfully implementing PCR solutions.
We place a strong emphasis on product quality and compliance with all requirements, holding ISO 9001 and 13485 certifications. We serve both B2B and B2C clients, ensuring our expertise and advanced products are accessible to organizations around the world. Our dedicated R&D department is constantly innovating and ready to develop customized solutions to meet your specific needs. The company's mission is to create a wide range of solutions tailored to the needs of our target audience. We are open to such OEM partnerships and providing customized solutions for manufacturers in molecular diagnostics, as well as delivering ready-made products for scientific research.

Our products

Life Science Products

Enzymes
- Taq polymerase and Reverse transcriptase with antibody, aptamer or chemical hot-start
- Lyo-ready or glycerol-free enzymes
- Enzymes with controlled low-level of *E.coli* DNA content
- Thermolabile UDG
- High purity Proteinase K

Mastermixes
- Liquid and lyo-ready forms
- Increased inhibition resistance, high sensitivity
- UDG-based technology for eliminating carry-over contamination
- Suitable for multiplexing

Additional reagents
- High purity dNTPs
- RNAse inhibitors (lyo-ready and lyophilized forms)

Molecular Diagnostics

Human, veterinary and food control PCR kits
- High sensitivity and specificity
- Increased resistance for inhibitors
- Resistance for possible carry-over contamination
- Liquid and lyophilized forms
- Approved for most popular PCR instruments
- Validated according to ISO 13485

KleverTest ASFV PCR kit
- Sensitivity is 1000 genome equivalent copies of ASFV DNA per 1 ml
- Specificity is 100% (approved by CISA-INIA)
- Liquid and lyophilized forms

Kits for nucleic acids isolation
- Magnetic beads and spin columns based technologies
- Suitable for manual and automatic modes
- All types of clinical samples

Contents

① **About us** 2

② **Human Diagnostics**

2.1 Urogenital Infections 4

2.2 TORCH Infections 6

2.3 Human Papilloma Viral Infections 8

2.4 Herpes Viral Infections 10

2.5 HIV and Viral Hepatitis 12

2.6 Respiratory Infections 14

③ **Veterinary Diagnostic**

3.1 Swine Diagnostics 16

④ **Foodborne Pathogens**

4.1 Foodborne Bacterial Pathogens 18

⑤ **NA Isolation Kits and Transport Media**

5.1 NA Isolation Kits 20

5.2 Transport Media 22

⑥ **Ordering** 23

RUO

2.1 Urogenital Infections

PCR tests for detecting urogenital infections are highly valuable due to their exceptional sensitivity and specificity. This allows for the rapid and accurate identification of pathogens, including both bacteria and viruses, enabling timely initiation of appropriate treatments. The use of PCR tests also helps prevent chronic or complicated forms of infections and reduces the risk of transmission to partners.

KleverTest PCR kits are designed for the qualitative detection of various urogenital pathogens, either separately or in multiplexes, from clinical samples such as swabs and smears. These kits include an endogenous internal control and offer high sensitivity and specificity. Special additives enhance resistance to inhibitors, while the presence of UDG helps eliminate potential carry-over contamination. All KleverTest kits feature fast protocols (70-90 minutes) that are compatible with most popular real-time PCR instruments.

Benefits:

- High specificity (up to 99.9%)
- Universal protocol for all kits
- Contains UDG for eliminating possible carry-over contamination
- Validated according to ISO 13485

Compatible instruments:

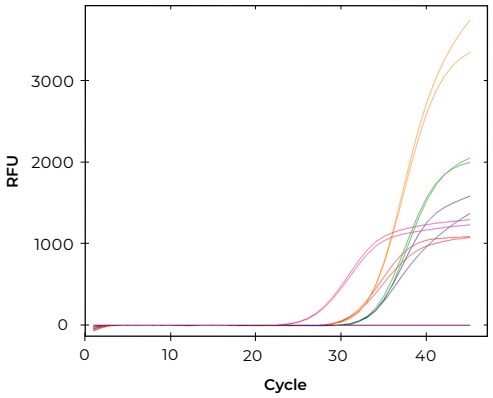
- CFX96 Systems
- Rotor-Gene Q5/6 Plex Systems
- QuantStudio 3/5 instruments
- DT-96 and DT-48 instruments

Storage condition:

- From -24 °C to -16 °C – 1 year
- From +2 °C to +8 °C – 14 days
- 10 freeze/thaw cycles are allowed

PCR Efficiency of KleverTest CT/MG/US/MH PCR Kit

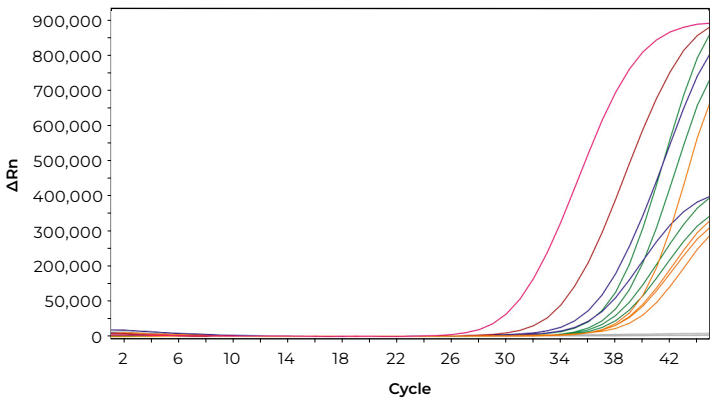
Figure 1. Results of amplification of DNA sample from reference panel



blue – IC
green – *M. genitalium*
orange – *C. trachomatis*
red – *N. gonorrhoea*
pink – *T. vaginalis*

PCR Efficiency of KleverTest CT PCR Kit

Figure 2. Results of amplification of quantified DNA from Chlamydia trachomatis strains



orange – $2.5x10^2$ copies/ml
green – $5x10^2$ copies/ml
blue – 10^3 copies/ml
red – 10^4 copies/ml
pink – 10^5 copies/ml

Product code	Product name	Quantitative	Control type	LOD (copies/ml)*	Detected patogen	Genome type	Tests
RK-CA-100	KleverTest CA PCR Kit	–	ENDO	500	*Candida albicans*	DNA	100
RK-CT-100	KleverTest CT PCR Kit	–	ENDO	500	*Chlamydia trachomatis*	DNA	100
RK-TV-100	KleverTest TV PCR Kit	–	ENDO	500	*Trichomonas vaginalis*	DNA	100
RK-UU/UP-100	KleverTest UU/UP PCR Kit	–	ENDO	1000	*Ureaplasma urealiticum* and *Ureaplasma parvum* with differentiation	DNA	100
RK-US-100	KleverTest USpp PCR Kit	–	ENDO	1000	Ureaplasma species	DNA	100
RK-MH-100	KleverTest MH PCR Kit	–	ENDO	1000	*Mycoplasma hominis*	DNA	100
RK-MG-100	KleverTest MG PCR Kit	–	ENDO	2000	*Mycoplasma genitalium*	DNA	100
RK-GV-100	KleverTest GV PCR Kit	–	ENDO	1000	*Gardnerella vaginalis*	DNA	100
RK-NG-100	KleverTest NG PCR Kit	–	ENDO	500	*Neisseria gonorrhoeae*	DNA	100
RK-TP-100	KleverTest TP PCR Kit	–	ENDO	500	*Treponema pallidum*	DNA	100
RK-CT/MG-100	KleverTest CT/MG PCR Kit	–	ENDO	500	*Chlamydia trachomatis* and *Mycoplasma genitalium* with differentiation	DNA	100
RK-CMU-100	KleverTest CT/MG/ US PCR Kit	–	ENDO	500	*Chlamydia trachomatis, Mycoplasma genitalium* and Ureaplasma species with differentiation	DNA	100
RK-CMUM-100	KleverTest CT/MG/ US/MH PCR Kit	–	ENDO	500	*Chlamydia trachomatis, Mycoplasma genitalium,* Ureaplasma species and *Mycoplasma hominis* with differentiation	DNA	100
RK-CTMN-100	KleverTest CT/TV/ MG/NG PCR Kit	-	ENDO	500	*Chlamydia trachomatis, Trichomonas vaginalis, Mycoplasma genitalium* and *Neisseria gonorrhoeae* with differentiation	DNA	100

*Under isolation from 100 µl of sample

RUO

2.2 TORCH Infections

TORCH infections are a group of congenital infections transmitted from mother to child during pregnancy, birth, or shortly after. TORCH is an acronym for infections caused by Toxoplasma gondii, other agents, Rubella, Cytomegalovirus (CMV), and Herpes simplex virus (HSV).

KleverTest PCR kits are designed for the qualitative and quantitative detection of TORCH infections, either individually or in multiplex, from blood plasma samples. These kits offer high sensitivity and specificity. Special additives enhance resistance to inhibitors, and the inclusion of UDG helps prevent carry-over contamination. All KleverTest kits feature fast (70-90 minutes) protocols and are compatible with most popular real-time PCR instruments.

Benefits:

- High specificity (up to 99.9%)
- Universal protocol for all kits
- Contains UDG for eliminating possible carry-over contamination
- Validated according to ISO 13485

Compatible instruments:

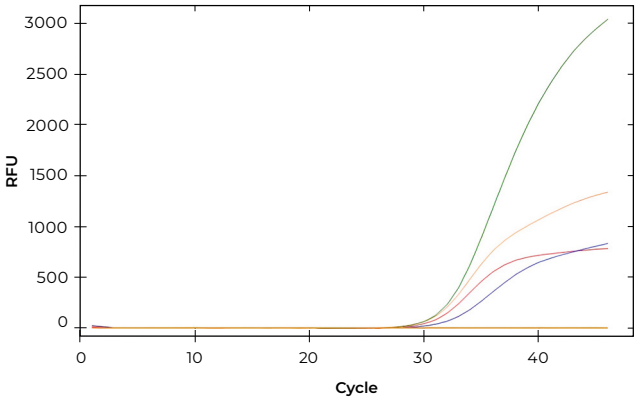
- CFX96 Systems
- Rotor-Gene Q5/6 Plex Systems
- QuantStudio 3/5 instruments
- DT-96 and DT-48 instruments

Storage condition:

- From -24 °C to -16 °C – 1 year
- From +2 °C to +8 °C – 14 days
- 10 freeze/thaw cycles are allowed

Amplification of reference DNA by KleverTest EBV/CMV/HHV-6 PCR Kit.

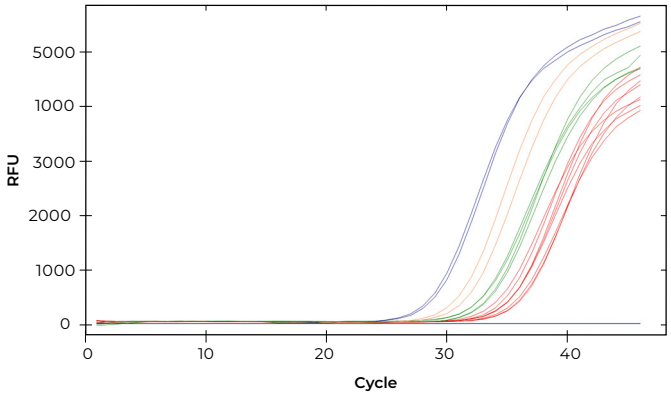
Figure 1. Results of amplification of DNA samples from reference panel



blue – IC
green – CMV
orange – EBV
pink – HHV-6

Amplification of reference DNA by KleverTest TG PCR kit

Figure 2. Results of amplification and quantification of Toxoplasma gondii DNA from the reference panel (Vircell)



blue – 10^4 copies/ml
yellow – 10^3 copies/ml
green – $5x10^2$ copies/ml
red – $2,5x10^2$ copies/ml

Product code	Product name	Quantitative	Control type	LOD (copies/ml)*	Detected patogen	Genome type	Tests
RK-ECH6-100	KleverTest EBV/ CMV/HHV-6 PCR Kit	–	EXO	500	Epstein-Barr virus, Cytomegalovirus and Human herpes virus 6 with differentiation	DNA	100
RK-PVB19-100	KleverTest PV B19 PCR Kit	–	EXO	500	Parvovirus B19	DNA	100
RK-PVB19q-100	KleverTest PV B19 Quant PCR Kit	+	EXO	500	Parvovirus B19	DNA	100
RK-RV-100	KleverTest Rubella PCR Kit	–	EXO	500	Rubella virus	DNA	100
RK-VZV-100	KleverTest VZV PCR Kit	–	EXO	500	Varicella zoster virus	DNA	100
RK-TG-100	KleverTest TG PCR Kit	–	EXO	500	Toxoplasma gondii	DNA	100

*Under isolation from 100 µl of sample

RUO

2.3 Human Papilloma Viral Infections

Using PCR tests to detect Human papillomavirus (HPV) is essential due to their high sensitivity and specificity. These tests enable the detection and genotyping of HPV, which is critical for screening, diagnosing, and monitoring the progression of infection. They also play a significant role in preventing cervical cancer and other HPV-related cancers.

KleverTest PCR kits are designed for the qualitative and quantitative detection of high-risk carcinogenic HPV from clinical samples, such as swabs and smears. HPV types can be analyzed in screening and/or genotyping modes. The kits include an endogenous internal control and offer high sensitivity and specificity. Special additives enhance resistance to inhibitors, while the presence of UDG helps prevent carry-over contamination. All KleverTest kits feature fast (70-90 minutes) protocols and are compatible with the most popular real-time PCR instruments.

Benefits:

- High specificity (up to 99.9%)
- Universal protocol for all kits
- Contains UDG for eliminating possible carry-over contamination
- Validated according to ISO 13485

Compatible instruments:

- CFX96 Systems
- Rotor-Gene Q5/6 Plex Systems
- QuantStudio 3/5 instruments
- DT-96 and DT-48 instruments

Storage condition:

- From -24 °C to -16 °C – 1 year
- From +2 °C to +8 °C – 14 days
- 10 freeze/thaw cycles are allowed

Amplification of synthentic DNAs of HPV 14 high risk types by KleverTest HPV 14 genotypes Quant PCR Kit.

Amplification of positive control samples

Figure 1. Results of amplification of HPV 16/18/45 positive control

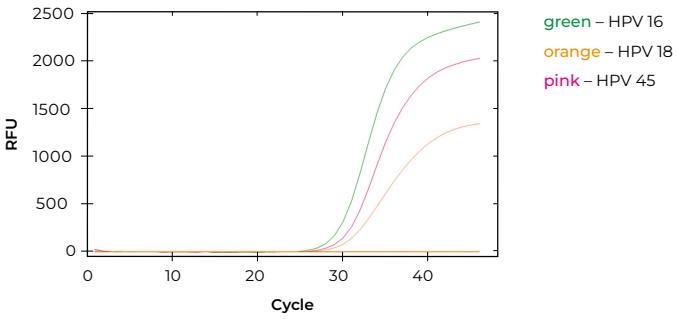


Figure 2. Results of amplification of HPV 51/52/56/58 positive control

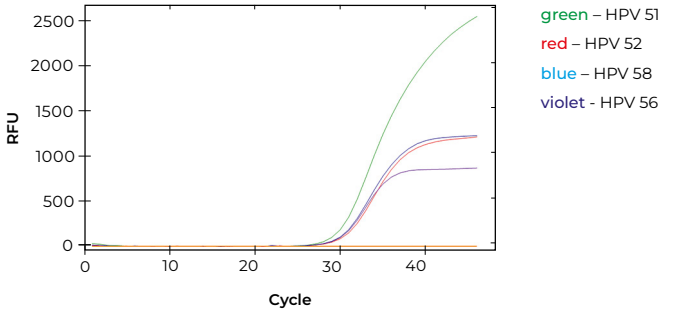


Figure 3. Results of amplification of HPV 31/33/35/39 positive control

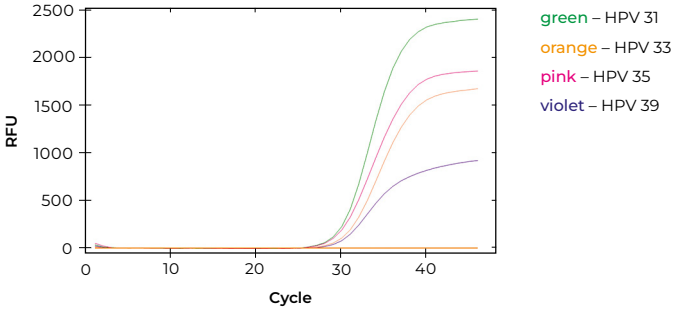
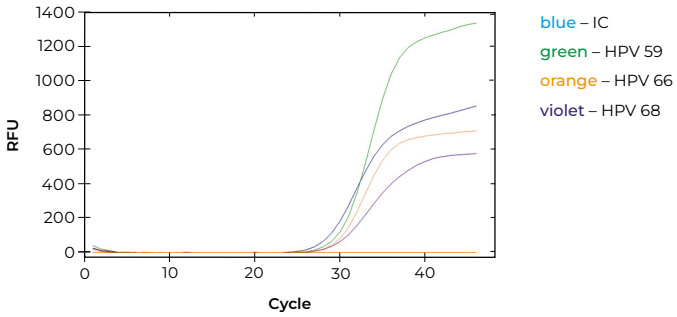


Figure 4. Results of amplification of HPV 59/66/68 positive control



Product code	Product name	Quantitative	Control type	LOD (copies/ml)*	Detected patogen	Genome type	Tests
RK-HPVq-100	KleverTest HPV Screen Quant PCR Kit	+	ENDO	500	Human papillomavirus types 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, 68 and HPV types 16, 18, 45 with partial differentiation	DNA	100
RK-HPV-100	KleverTest HPV Screen PCR Kit	–	ENDO	500	Human papillomavirus types 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, 68 and HPV types 16, 18, 45 with partial differentiation	DNA	100
RK-HPV14q-25	KleverTest HPV 14 genotypes Quant PCR Kit	+	ENDO	500	Human papillomavirus types 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, 68 with differentiation	DNA	25
RK-HPV14q-100	KleverTest HPV 14 genotypes Quant PCR Kit	+	ENDO	500	Human papillomavirus types 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59, 66, 68 with differentiation	DNA	100
RK-HPV6/11/44q-100	KleverTest HPV 6/11/44 Quant PCR Kit	+	ENDO	500	Human papillomavirus types 6, 11, 44 with differentiation	DNA	100
RK-HPV16/18-100	KleverTest HPV 16/18 PCR Kit	–	ENDO	500	Human papillomavirus types 16 and 18 with differentiation	DNA	100

*Under isolation from 100 µl of sample

RUO

2.4 Herpes Viral Infections

Nine types of herpesviruses are known to primarily infect humans, at least five of which are extremely widespread across most human populations and cause common diseases: Herpes simplex virus types 1 and 2 (HSV-1 and HSV-2), which cause orolabial and genital herpes; Varicella zoster virus (VZV), the cause of chickenpox and shingles; Epstein-Barr virus (EBV), implicated in several diseases, including mononucleosis and some cancers; and Cytomegalovirus (CMV), which has been associated with mucoepidermoid carcinoma and potentially other malignancies, such as prostate and breast cancer.

PCR testing for human herpesviruses is crucial due to its high sensitivity and specificity, enabling the rapid and accurate identification of infectious agents. This allows for timely initiation of treatment, prevents disease transmission, and reduces the risk of complications.

KleverTest PCR kits are designed for the qualitative detection of various respiratory pathogens, either individually or in multiplex, from clinical samples such as swabs and smears. These kits offer high sensitivity and specificity, enhanced by special additives that increase resistance to inhibitors. The inclusion of UDG helps to prevent carry-over contamination. All KleverTest kits feature fast (70-90 minutes) protocols and are validated for use with the most popular real-time PCR instruments.

Benefits:

- High specificity (up to 99.9%)
- Universal protocol for all kits
- Contains UDG for eliminating possible carry-over contamination
- Validated according to ISO 13485

Compatible instruments:

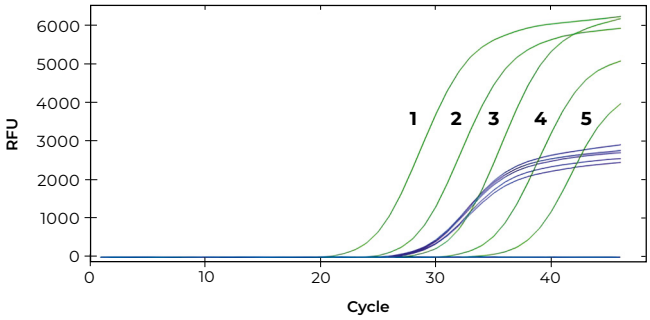
- CFX96 Systems
- Rotor-Gene Q5/6 Plex Systems
- QuantStudio 3/5 instruments
- DT-96 and DT-48 instruments

Storage condition:

- From -24 °C to -16 °C – 1 year
- From +2 °C to +8 °C – 14 days
- 10 freeze/thaw cycles are allowed

PCR Efficiency of KleverTest EBV PCR Kit

Figure 1. Results of amplification of samples from EBV reference panel (plasma). Virus concentration in plasma is 5x10² – 5x10⁶ IU/ml

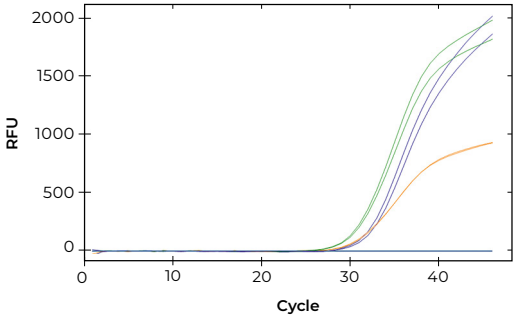


blue – EIC
green – EBV

1 – 5x10⁶ IU/ml
2 – 5x10⁵ IU/ml
3 – 5x10⁴ IU/ml
4 – 5x10³ IU/ml
5 – 5x10² IU/ml

PCR Efficiency of KleverTest HSV-1/HSV-2 PCR Kit

Figure 2. Results of amplification of HSV-1 and HSV-2 reference samples (plasma)



blue – EIC
green – HSV-1
orange – HSV-2

Product code	Product name	Quantitative	Control type	LOD (copies/ml)*	Detected patogen	Genome type	Tests
RK-CMV-100	KleverTest CMV PCR Kit	–	EXO	500	Cytomegalovirus	DNA	100
RK-CMVq-100	KleverTest CMV Quant PCR Kit	+	EXO	500	Cytomegalovirus	DNA	100
RK-EBV-100	KleverTest EBV PCR Kit	–	EXO	500	Epstein-Barr virus	DNA	100
RK-EBVq-100	KleverTest EBV Quant PCR Kit	+	EXO	500	Epstein-Barr virus	DNA	100
RK-HHV6-100	KleverTest HHV-6 PCR Kit	–	EXO	500	Human herpes virus 6	DNA	100
RK-HHV6q-100	KleverTest HHV-6 Quant PCR Kit	+	EXO	500	Human herpes virus 6	DNA	100
RK-HSV1/2-100	KleverTest HSV-1/ HSV-2 PCR Kit	–	EXO	1000	Human herpes virus types 1 and 2 with differentiation	DNA	100
RK-HSV-100	KleverTest HSV PCR Kit	–	EXO	1000	Human herpes virus types 1 and 2 without differentiation	DNA	100

*Under isolation from 100 µl of sample

RUO

2.5 HIV and Viral Hepatitis

Detection of hemotransmissive infectious diseases, such as Human immunodeficiency virus (HIV) and Hepatitis viruses, requires highly sensitive methods such as PCR testing.
KleverTest PCR kits are designed for the qualitative and quantitative detection of HIV, Hepatitis viruses types B, C and D, either separately or in multiplexes from blood plasma samples. These kits possess high sensitivity and specificity, special additives provide increased resistance to inhibitors, and the presence of UDG helps to eliminate possible carry-over contamination. All KleverTest kits have fast (70-90 minutes) and universal protocols. Our kits have been validated for use with the most popular Real-Time PCR instruments.

Benefits:

- High specificity (up to 99.9%)
- Universal protocol for all kits
- Contains UDG for eliminating possible carry-over contamination
- Validated according to ISO 13485

Compatible instruments:

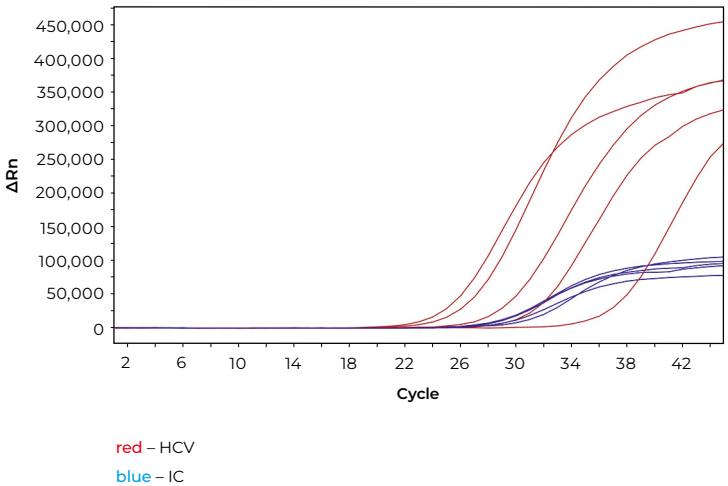
- CFX96 Systems
- Rotor-Gene Q5/6 Plex Systems
- QuantStudio 3/5 instruments
- DT-96 and DT-48 instruments

Storage condition:

- From -24 °C to -16 °C – 1 year
- From +2 °C to +8 °C – 14 days
- 10 freeze/thaw cycles are allowed

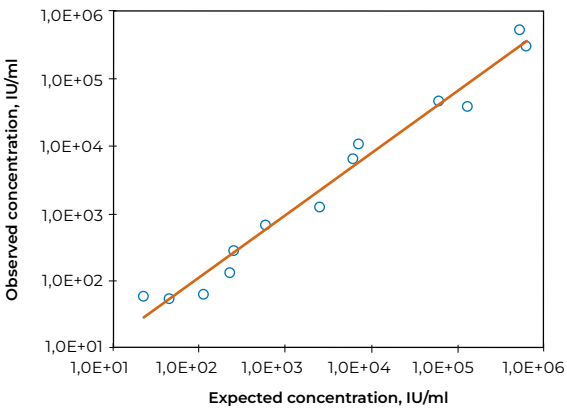
PCR Efficiency of KleverTest HCV Quant PCR Kit

Figure 1. Results of amplification of DNA samples from reference panel



red – HCV
blue – IC

Figure 2. Comparative analysis of KleverTest HCV Quant PCR Kit and commercial kit on reference panel



Product code	Product name	Quantitative	Control type	LOD	Detected patogen	Genome type	Tests
RK-BCI-100	KleverTest HBV/ HCV/HIV PCR Kit	–	EXO	HBV RNA/DNA – 50** HCV RNA – 150** HIV-1 RNA – 120* HIV-2 RNA – 600*	Hepatitis B, Hepatitis C and Human immunodeficiency viruses types 1 and 2 with differentiation	RNA/ DNA	100
RK-BD-100	KleverTest HBV/ HDV PCR Kit	–	EXO	HBV RNA/DNA – 50** HDV RNA – 400**	Hepatitis B and Hepatitis D viruses with differentiation	RNA/ DNA	100
RK-HBV-100	KleverTest HBV PCR Kit	–	EXO	50**	Hepatitis B virus	DNA	100
RK-HBVq-100	KleverTest HBV Quant PCR Kit	+	EXO	50**	Hepatitis B virus	DNA	100
RK-HBV(R)-100	KleverTest HBV (RNA) PCR Kit	–	EXO	35**	Hepatitis B virus	RNA/ DNA	100
RK-HBV(R)q-100	KleverTest HBV (RNA) Quant PCR Kit	+	EXO	35**	Hepatitis B virus	RNA/ DNA	100
RK-HCV-100	KleverTest HCV PCR Kit	–	EXO	150**	Hepatitis C virus	RNA	100
RK-HCVq-100	KleverTest HCV Quant PCR Kit	+	EXO	150**	Hepatitis C virus	RNA	100
RK-HDV-100	KleverTest HDV PCR Kit	–	EXO	400**	Hepatitis D virus	RNA	100
RK-HDVq-100	KleverTest HDV Quant PCR Kit	+	EXO	400**	Hepatitis D virus	RNA	100
RK-HIV-100	KleverTest HIV PCR Kit	–	EXO	HIV-1 – 120* HIV-2 – 600*	Human immunodeficiency virus types 1 and 2	RNA	100
RK-HIVq-100	KleverTest HIV Quant PCR Kit	+	EXO	500*	Human immunodeficiency virus types 1 and 2	RNA	100

*Copies/ml (under isolation from 100 µl of sample)
**IU (under isolation from 100 µl of sample)

RUO

2.6 Respiratory Infections

The use of PCR tests for detecting respiratory infections is important because they provide high sensitivity and specificity, allowing for the rapid and accurate identification of infectious agents. This facilitates timely initiation of treatment, prevents disease spread, and reduces the risk of complications.
KleverTest PCR kits designed for qualitative detection of various respiratory pathogens separately or in multiplexes from clinical samples, such as swabs, smears, etc. Kits contained endogenous internal control and possessed high sensitivity and specificity. Special additives provide increased resistance to inhibitors, UDG presence help to eliminate possible carry-over contamination. All KleverTest kits have fast (70-90 minutes) and universal protocols. Our kits were validated for the most popular real-time PCR instruments.

Benefits:

- High specificity (up to 99.9%)
- Universal protocol for all kits
- Contains UDG for eliminating possible carry-over contamination
- Validated according to ISO 13485

Compatible instruments:

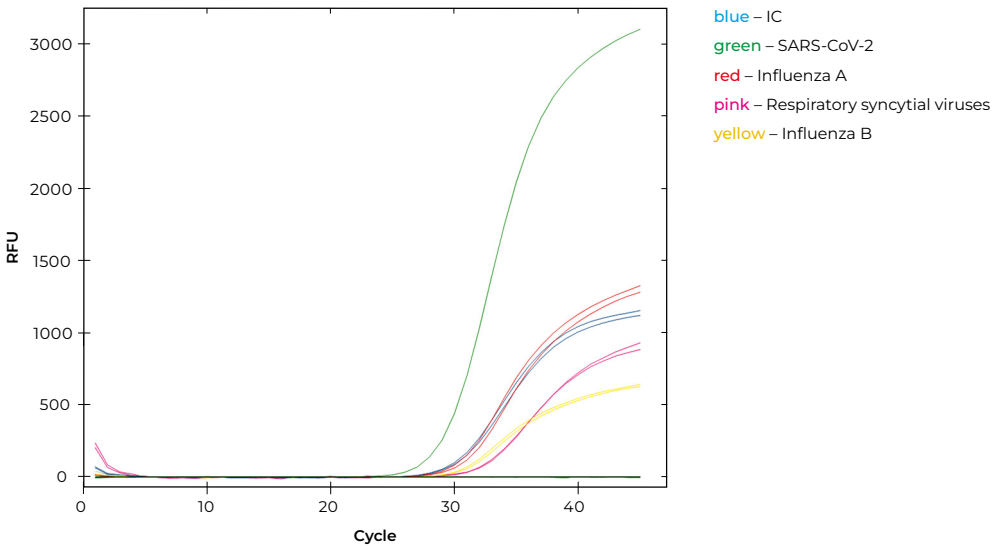
- CFX96 Systems
- Rotor-Gene Q5/6 Plex Systems
- QuantStudio 3/5 instruments
- DT-96 and DT-48 instruments

Storage condition:

- From -24 °C to -16 °C – 1 year
- From +2 °C to +8 °C – 14 days
- 10 freeze/thaw cycles are allowed

PCR Efficiency of KleverTest C-19/Flu/RSV PCR Kit

Figure 1. Results of amplification of DNA sample from reference panel



Product code	Product name	Quantitative	Control type	LOD (copies/ml)*	Detected patogen	Genome type	Tests
RK-MTB-100	KleverTest MTB PCR Kit	–	EXO	500	Mycobacterium tuberculosis complex: *Mycobacterium bovis*, *Mycobacterium tuberculosis*, *Mycobacterium bovis* BCG, *Mycobacterium africanum* and *Mycobacterium microti*	DNA	100
RK-C19-100	KleverTest Covid-19 PCR Kit	–	ENDO	500	SARS-CoV-2 virus	RNA	100
RK-C19/Flu-100	KleverTest C-19/ FluA/FluB PCR Kit	–	ENDO	500	SARS-CoV-2, Influenza A and Influenza B viruses with differentiation	RNA	100
RK-Flu-100	KleverTest FluA/ FluB PCR Kit	–	ENDO	500	Influenza A and Influenza B viruses with differentiation	RNA	100
RK-Flu/RSV-100	KleverTest Flu/RSV PCR Kit	–	ENDO	500	Influenza A/B and Respiratory syncytial viruses with differentiation	RNA	100
RK-C19/Flu/ RSV-100	KleverTest C-19/Flu/ RSV PCR Kit	–	ENDO	500	SARS-CoV-2, Influenza A/B and Respiratory syncytial viruses with differentiation	RNA	100
RK-ABP-100	KleverTest ABP PCR Kit	–	ENDO	500	*Mycoplasma pneumoniae* and *Chlamydophila pneumoniae*	DNA	100

*Under isolation from 100 µl of sample

3.1 Swine Diagnostics

Timely diagnosis and treatment of diseases are crucial in animal husbandry. The main swine diseases include African swine fever (ASF), Porcine circovirus (PCV), Porcine reproductive and Respiratory syndrome virus (PRRSV), Classical swine fever virus (CSFV), and others. The most effective method for diagnosing these diseases is PCR, because it offers high accuracy and sensitivity, allowing the detection of viruses at early stages and helping to prevent the spread of infection.

KleverTest PCR kits designed for qualitative detection of various pathogens in the clinical material (serum, plasma, whole blood, organs, oral fluids and nasal swab samples from pig and wild boar) by real-time PCR. Kits possessed high sensitivity and specificity. Special additives provide increased resistance to inhibitors, UDG presence helps to eliminate possible carry-over contamination. All KleverTest kits have fast (70-90 minutes) and universal protocols. Our kits were validated for the most popular real-time PCR instruments.

Benefits:

- High specificity (up to 99.9%)
- Universal protocol for all kits
- Contains UDG for eliminating possible carry-over contamination
- Validated according to ISO 13485

Compatible instruments:

- CFX96 Systems
- Rotor-Gene Q5/6 Plex Systems
- QuantStudio 3/5 instruments
- DT-96 and DT-48 instruments

Storage condition:

- From -24 °C to -16 °C – 1 year
- From +2 °C to +8 °C – 14 days
- 10 freeze/thaw cycles are allowed

Product code	Product name	Quantitative	Control type	LOD (copies/ml)*	Detected patogen	Genome type	Tests
RKV-ASF-100	KleverTest African Swine Fever Virus PCR Kit	–	EXO	1000	African swine fever virus	DNA	100
RKV-PC23-100	KleverTest Porcine Circovirus 2/3 PCR Kit	–	EXO	1000	Porcine circovirus types 2 and 3 with differentiation	DNA	100
RKV-MHY-100	KleverTest Mycoplasma Hyopneumoniae PCR Kit	–	EXO	1000	*Mycoplasma hyopneumoniae*	DNA	100

*Under isolation from 1000 µl of sample

Validation of the KleverTest African Swine Fever Virus PCR Kit

Validation of the KleverTest ASFV PCR Kit was evaluated on 22 ASFV reference DNAs belonging to 21 of the reported p72 genotypes and showed 100% sensitivity. Kits also was validated on 268 reference samples from INIA-CISA (EDTA-blood and tissue samples from infected domestic pigs) and showed K index of 0.99 (CI 95%) according to the reference method (WOAH-UPL).

PCR Efficiency for the diagnosis of Swine DNA Viruses: ASFV & PCV

Figures 1, 2. Results of amplification of quantified ASFV DNA by KleverTest African Swine Fever Virus detection Kit

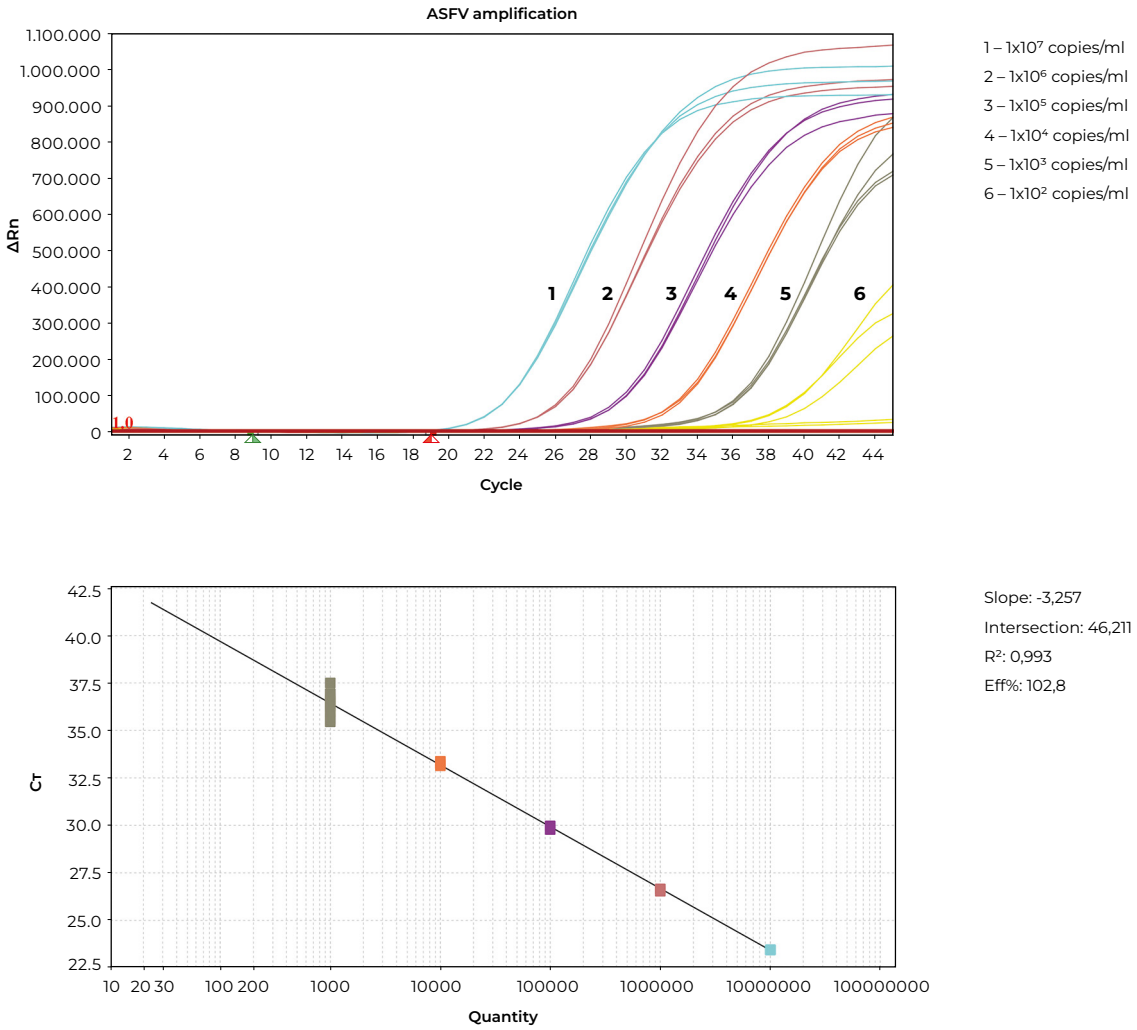
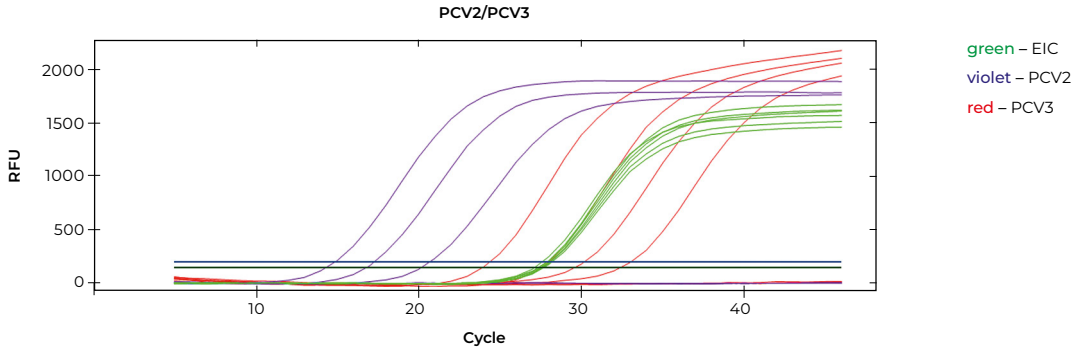


Figure 3. Results of amplification of PCV DNA from verified clinical panel by KleverTest Porcine Circovirus 2/3 PCR Kit



4.1 Foodborne Bacterial Pathogens

Foodborne pathogens (e.g. viruses, bacteria, parasites) are biological agents that can cause a foodborne illness event. Most common foodborne germs causing illness are: *Salmonella* spp, *Listeria monocytogenes*, Norovirus, *Clostridium perfringens, Escherichia coli, Staphylococcus aureus* and Campylobacter. The use of PCR tests for detecting foodborne pathogens is important because they provide high sensitivity and specificity, allowing for the rapid and accurate identification of infectious agents. This facilitates timely initiation of treatment, prevents disease spread, and reduces the risk of complications.

KleverTest PCR kits designed for qualitative detection of various foodborne pathogens from animal, food or enriched cultural samples. Kits possessed high sensitivity and specificity. Special additives provide increased resistance to inhibitors, UDG presence help to eliminate possible carry-over contamination. All KleverTest kits have fast (70-90 minutes) and universal protocols. Our kits were validated for the most popular real-time PCR instruments.

Benefits:

- High specificity (up to 99.9%)
- Universal protocol for all kits
- Contains UDG for eliminating possible carry-over contamination
- Validated according to ISO 13485

Compatible instruments:

- CFX96 Systems
- Rotor-Gene Q5/6 Plex Systems
- QuantStudio 3/5 instruments
- DT-96 and DT-48 instruments

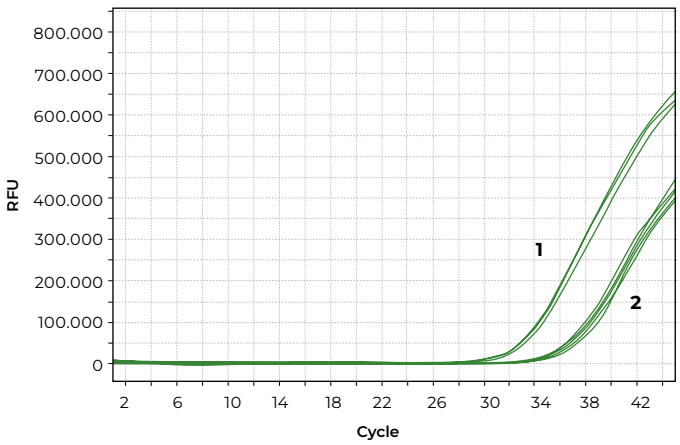
Storage condition:

- From -24 °C to -16 °C – 1 year
- From +2 °C to +8 °C – 14 days
- 10 freeze/thaw cycles are allowed

PCR efficiency of KleverTest kits for detecting foodborne pathogen

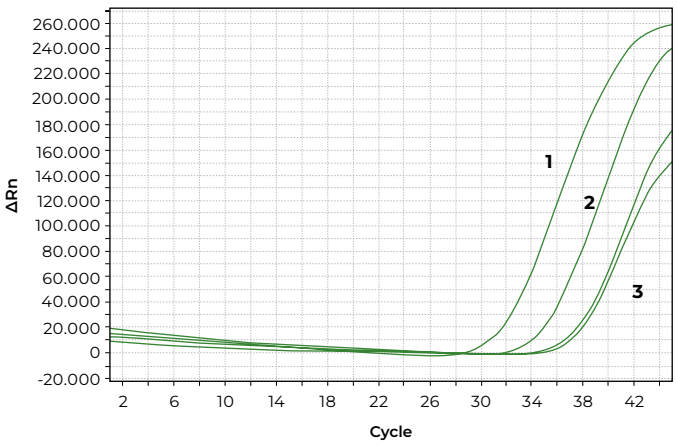
Limits of detection (LOD) for the kits is estimated to be 10^3 genome equivalent copies of DNA per 1 ml of sample (95% confidence interval). LOD was evaluated on quantified DNA from verified Listeria monocytogenes (Figure 1) and Salmonella enterica (Figure 2) cell cultures

Figure 1.



1 – 10^4 copies/ml
2 – 10^3 copies/ml

Figure 2.



1 – 10^5 copies/ml
2 – 10^4 copies/ml
3 – 10^3 copies/ml

Product code	Product name	Quantitative	Control type	LOD (copies/ml)*	Detected patogen	Genome type	Tests
RKF-SS-100	KleverTest SS PCR Kit	–	EXO	1000	*Salmonella* spp.	DNA	100
RKF-LM-100	KleverTest LM PCR Kit	–	EXO	1000	*Listeria monocytogenes*	DNA	100

*Under isolation from 1000 µl of sample

RUO

5.1 NA Isolation Kits

Line of KleverLab products for nucleic acid isolation and purification include kits based on magnetic beads and spin columns technologies. It allows to purify DNA/RNA both in manual mode (use magnetic rack or centrifuge for single tubes 1.5-2.0 ml) and in automatic mode using most popular robotic stations (KingFisher Flex instruments, Allsheng Auto-Pure instruments, etc.). DNA/RNA isolation kits are designed to perform assays of 100 samples with a volume of 100 µl. NA recovery is dependent upon sample type and is typically greater than 75%. Isolated DNA/RNA is suitable for further molecular biological studies, including qPCR and RT-PCR.

PuriMag P Total DNA/RNA Isolation Kit based on magnetic beads and was designed for the extraction of total DNA/RNA from blood plasma and serum which contains low titer of pathogenic microorganisms.

PuriMag S Total DNA/RNA Isolation Kit based on magnetic beads and intended for isolation of total DNA/RNA from smears and swabs of the urogenital, respiratory and digestive tracts.

PuriSpin S Total DNA/RNA Isolation Kit based on spin columns and intended for isolation of total DNA/RNA from smears and swabs of the urogenital, respiratory and digestive tracts.

Benefits:

- NA extraction purity A_{260}/ A_{280} ~ 1.7-2.2*
- NA recovery > 75%*
- Validated according to ISO 13485

**depending on the sample*

Compatible instruments:

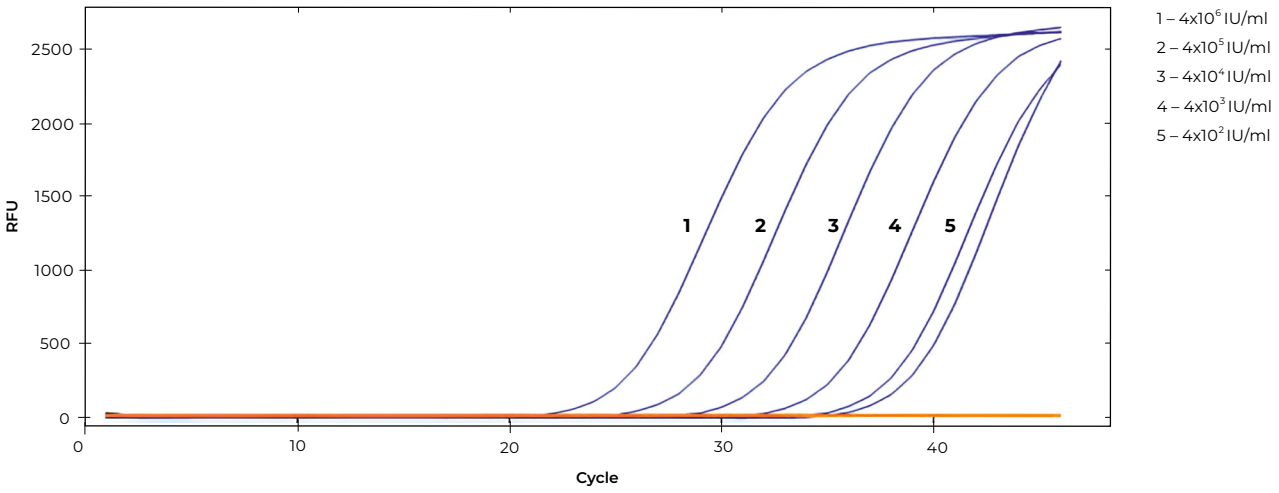
- KingFisher Flex instruments
- AllSheng Auto-Pure 96 or analogous
- Tecan Freedom EVO series or analogous

Storage condition:

- ≤+25 °C - 1 year

The effectiveness of Cytomegalovirus DNA isolation from plasma by PuriMag P Total DNA/RNA Isolation Kit

Figure 1. Results of amplification of Cytomegaloviruses DNA isolated from reference CMV Verification Panel (Exact Diagnostic, USA). Initial virus concentration in plasma is $4x10^2$ – $4x10^6$ IU/ml



Product code	Product name	Technology	Type of isolated DNA/RNA	Number of samples	Type of samples
RKI-PMP-100	PuriMag P Total DNA/ RNA Isolation Kit	Magnetic beads	Total DNA/RNA	100	Blood plasma, serum etc.
RKI-PMS-100	PuriMag S Total DNA/ RNA Isolation Kit	Magnetic beads	Total DNA/RNA	100	Swabs, scrapes, smears etc.
RKI-PSS-100	PuriSpin S Total DNA/ RNA Isolation Kit	Spin columns	Total DNA/RNA	100	Swabs, scrapes, smears etc.

5.2 Transport Media

Transport Media is a ready-to-use sterile buffered saline solution intended for the transportation and storage of swabs and discharges collected from the urogenital tract, throat, rectum, and erosive or ulcerative lesions of human skin and mucous membranes. It is used for the subsequent analysis of the material for various infections by polymerase chain reaction (PCR). The Transport Media contains preservatives and stabilizing agents that prevent the growth of nonspecific microflora and premature cell lysis, providing long-term stability of microbial nucleic acids across a wide temperature range. Transport Media may also contain mucolytic agents, which depolymerize mucins and other polymeric components of mucus or sputum, ensuring effective and homogeneous mixing of clinical material with the transport medium.

Product code	Product name	Quantity, ml	Type of isolated DNA/RNA
R-TM-1	Transport medium	1 x 0,75	DNA & RNA
R-TM-25	Transport medium	25 x 0,75	DNA & RNA
R-TM-100	Transport medium	100 x 0.75	DNA & RNA
R-TMM-1	Transport medium with mucolitic agent	1 x 0,75	DNA & RNA
R-TMM-25	Transport medium with mucolitic agent	25 x 0,75	DNA & RNA
R-TMM-100	Transport medium with mucolitic agent	100 x 0.75	DNA & RNA

Ordering

How to place an order?

- You can place an order using our website **www.kleverlab.eu**
- To place an order, you can also write to our email **info@kleverlab.eu**
- If you have additional questions about ordering products, you can dial our phone number **+48 573 966 831**

Required information

The application must include the following information about the buyer

- Customer full name
- Billing address
- Shipping address
- Phone number
- For VAT payers in EU: VAT number
- Product name or catalog SKU, quantity

Shipment

All shipments will be arranged by DHL Express for international shipping and UPS for Poland. Orders are confirmed generally within 1 business day after receipt. In most cases orders are shipped within 1 to 3 business days.

Payment options

KleverLab accepts payments by:

- Direct bank transfer (proforma/invoice)
- Card payment (available payment cards Visa, Visa Electron, Mastercard, MasterCard Electronic, Maestro), based on invoice or for orders placed through our e-shop www.kleverlab.eu/products
- PayPal

Customized solutions

Our catalogs includes standard products. We are flexible and committed to meeting your needs, and may be able to offer OEM products, bulk products, customized packings and formulations. If you have specific requirements and can't find the best solution in our catalog, please contact us.

Free samples

KleverLab provides free samples of our most product range, which allows our customers to thoroughly test our products.

*This information is provided for preliminary review, and the most up-to-date terms of cooperation can be found on the page on the website www.kleverlab.eu/faq, as well as contacting us by email info@kleverlab.eu or by phone +48 573 966 831.

Contact us

KleverLab LLC

Warsaw, Poland, Przeclawska st. 5, 03-879
phone: +48 573 966 831
info@kleverlab.eu
VAT EU: PL5252844757

www.kleverlab.eu