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For Professional Use Only

AmpliSens® ARVI-screen-FRT

PCR kit

Instruction Manual

AmpliSens®

EC REP

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1. INTENDED USE

AmpliSens® ARVI-screen-FRT PCR kit is an in vitro nucleic acid amplification test for multiplex detection and identification of specific nucleic acid fragments of pathogens that cause **a**cute **r**espiratory **v**iral **i**nfections – *human Respiratory Syncytial virus* (*hRSv*) RNA; *human Metapneumovirus* (*hMpv*) RNA; *human Parainfluenza virus*-1-4 (*hPiv*) RNA; OC43, E229, NL63, and HKUI *human Coronavirus* (*hCov*) RNA; *human Rhinovirus* (*hRv*) RNA; *human* B, C, and E *Adenovirus* (*hAdv*) DNA; and *human Bocavirus* (*hBov*) DNA – in the clinical material (nasal and oropharyngeal swabs, sputum, aspirate of trachea, bronchoalveolar lavage, bronchial washing fluid, and autopsy material) by using real-time hybridization-fluorescence detection.

The results of PCR analysis are taken into account in complex diagnostics of disease.

2. PRINCIPLE OF PCR DETECTION

ARVI detection by the polymerase chain reaction (PCR) is based on the amplification of the pathogen genome specific region using specific ARVI primers. In real-time PCR, the amplified product is detected using fluorescent dyes. These dyes are linked to oligonucleotide probes which bind specifically to the amplified product during thermocycling. The real-time PCR monitoring of fluorescence intensities during the real-time PCR allows the detection of accumulating product without re-opening the reaction tubes after the PCR run. **AmpliSens® ARVI-screen-FRT** PCR kit is a qualitative test that contains the Internal Control (IC). It must be used in the extraction procedure in order to control the extraction process of each individual sample and to identify possible reaction inhibition. **AmpliSens® ARVI-screen-FRT** PCR kit uses “hot-start,” which greatly reduces the frequency of non-specifically primed reactions. “Hot-start” is guaranteed by separation of nucleotides and Taq-polymerase by using a chemically modified polymerase (TaqF). The chemically modified polymerase (TaqF) is activated by heating at 95 °C for 15 min.

3. CONTENT

AmpliSens® ARVI-screen-FRT PCR kit is produced in 1 form:

AmpliSens® ARVI-screen-FRT PCR kit variant FRT-100 F (for use with RG, iQ, Dt)

REF R-V57-100-F(RG,iQ,Dt)-CE.

AmpliSens® ARVI-screen-FRT PCR kit variant FRT-100 F includes:

Reagent	*Description*	*Volume, ml*	*Quantity*
PCR-mix-1-FL-F *hRSv – hMpv*	colorless clear liquid	0.2	5 tubes
PCR-mix-1-FL-F *hPiv* 1/3	colorless clear liquid	0.2	5 tubes
PCR-mix-1-FL-F *hPiv* 2/4	colorless clear liquid	0.2	5 tubes
PCR-mix-1-FL-F *hCov*	colorless clear liquid	0.2	5 tubes
PCR-mix-1-FL-F *hAdv – hBov*	colorless clear liquid	0.2	5 tubes
PCR-mix-1-FL-F *hRv*	colorless clear liquid	0.2	5 tubes
PCR-mix-2-FRT	colorless clear liquid	0.6	6 tubes
Polymerase (TaqF)	colorless clear liquid	0.06	6 tubes
Positive Control cDNA *hRSv - hMpv* (C+$_{hRSv\text{-}hMpv}$)	colorless clear liquid	0.1	2 tubes
Positive Control cDNA *hPiv* 1/3 (C+$_{hPiv\ 1/3}$)	colorless clear liquid	0.1	2 tubes
Positive Control cDNA *hPiv* 2/4 (C+$_{hPiv\ 2/4}$)	colorless clear liquid	0.1	2 tubes
Positive Control cDNA *hRv* (C+$_{hRv}$)	colorless clear liquid	0.1	2 tubes
Positive Control cDNA *hCov* (C+$_{hCov}$)	colorless clear liquid	0.1	2 tubes
Positive Control DNA *hAdv – hBov* (C+$_{hAdv\text{-}hBov}$)	colorless clear liquid	0.1	2 tubes
Positive Control STI-88 (CS+)	colorless clear liquid	0.1	6 tubes
TE-buffer	colorless clear liquid	0.5	2 tubes
Negative Control (C–)*	colorless clear liquid	1.2	2 tubes
Internal Control STI-rec (IC)**	colorless clear liquid	0.12	10 tubes

* must be used in the extraction procedure as Negative Control of Extraction.

** add 10 µl of Internal Control during the DNA extraction procedure directly to the sample/lysis mixture (see RIBO-sorb **REF** K2-1-Et-100-CE and RIBO-prep **REF** K2-9-Et-100-CE protocols).

AmpliSens® ARVI-screen-FRT PCR kit variant FRT-100 F is intended for 100 reactions for every PCR-mix-1-FL-F (including controls).

4. ADDITIONAL REQUIREMENTS

- DNA/RNA extraction kit.
- Reverse transcription kit.
- Transport medium.

- Disposable powder-free gloves and laboratory coat.
- Pipettes (adjustable).
- Sterile pipette tips with aerosol barriers (up to 200 µl).
- Tube racks.
- Vortex mixer.
- Desktop centrifuge with a rotor for 2-ml reaction tubes.
- PCR box.
- Personal thermocyclers (for example, Rotor-Gene 6000 (Corbett Research, Australia), Rotor-Gene Q (Qiagen, Germany), iCycler iQ or iQ5 (Bio-Rad, USA), or equivalent.
- Disposable polypropylene microtubes for PCR ((0.2-ml or 0.1-ml); for example, Axygen, USA; Corbett Research, Australia; Qiagen, Germany).
- Refrigerator for 2–8 °C.
- Deep-freezer for ≤ –16 °C.
- Waste bin for used tips.

5. GENERAL PRECAUTIONS

The user should always pay attention to the following:

- Use sterile pipette tips with aerosol barriers and use new tip for every procedure.
- Store and handle amplicons away from all other reagents.
- Thaw all components thoroughly at room temperature before starting detection.
- When thawed, mix the components and centrifuge briefly.
- Use disposable gloves, laboratory coats, protect eyes while samples and reagents handling. Thoroughly wash hands afterward.
- Do not eat, drink, smoke, apply cosmetics, or handle contact lenses in laboratory work areas.
- Do not use a kit after its expiration date.
- Dispose of all samples and unused reagents in compliance with local authorities requirements.
- Samples should be considered potentially infectious and handled in a biological cabinet in accordance with appropriate biosafety practices.
- Clean and disinfect all sample or reagent spills using a disinfectant, such as 0.5 % sodium hypochlorite or another suitable disinfectant.
- Avoid contact with the skin, eyes, and mucosa. If skin, eyes, or mucosa contact, immediately flush with water and seek medical attention.
- Material Safety Data Sheets (MSDS) are available on request.

- Use of this product should be limited to personnel trained in DNA amplification techniques.
- The laboratory process must be one-directional, it should begin in the Extraction Area and then move to the Amplification and Detection Area. Do not return samples, equipment, and reagents to the area in which the previous step was performed.

Some components of this kit contain sodium azide as a preservative. Do not use metal tubing for reagent transfer.

6. SAMPLING AND HANDLING

Obtaining samples of biological materials for PCR-analysis, transportation and storage are described in manufacturer's handbook [1]. It is recommended that this handbook is read before starting work.

The material must be analyzed according to rules and instructions.

AmpliSens® ARVI-screen-FRT PCR kit is intended for analysis of DNA/RNA extracted from:

– nasal and oropharyngeal swabs;
– sputum (or aspirate of trachea or throat);
– bronchoalveolar lavage or bronchial washing fluid;
– autopsy material.

Nasal swab samples are obtained using a probe with a dry cotton swab. If the nasal cavity is full of mucus it is recommended to blow the nose before the procedure. Insert the probe gently along the external nasal wall to a depth of 2–3 cm towards the inferior nasal concha. Then move the probe slightly lower, insert it in the inferior nasal meatus under the inferior nasal concha, rotate, and remove along the external nasal wall.

When the material is obtained, place the working part of the probe with a cotton swab into a sterile disposable tube with 500 µl of **Transport Medium for Storage and Transportation of Respiratory Swabs**. Break off the terminal part of the probe to allow tight closing of the tube cap. Close the tube with the solution and the working part of the probe.

Oropharyngeal swab samples are obtained using a probe with a dry cotton swab. Obtain swabs by rotating the probe over the surface of tonsils, palatine arches, and posterior wall of pharynx after gargling the oral cavity with water.

When material is obtained, place the working part of the probe with the cotton swab into a sterile disposable tube with 500 µl of **Transport Medium for Storage and Transportation of Respiratory Swabs**. Break off the terminal part of the probe to allow tight closing of tube cap. Close the tube with the solution and the working part of the probe.

It is recommended to combine nasal and oropharyngeal swabs in a single tube. For this purpose, place the working parts of both probes into one tube containing 500 µl of **Transport Medium for Storage and Transportation of Respiratory Swabs** and analyze them as a single sample.

Nasopharyngeal sputum or aspirate or tracheal sputum or aspirate

Collect sputum into sterile disposable container after gargling the oral cavity with water. Collect nasopharyngeal or tracheal aspirate by the conventional procedure and transfer them into sterile disposable containers.

Bronchoalveolar lavage and bronchial washing fluid

Collect bronchoalveolar lavage and bronchial washing fluid by the conventional procedure and transfer them into sterile disposable containers.

Store the samples at minus 2–8 °C for 1 day or at not more than minus 16 °C for 1 week.

Autopsy sample should be immediately placed in a sterile disposable container and frozen otherwise it should be examined within 1 hour from the time of sample collection. Store the samples at minus 68 °C for 1 year.

Only one freeze-thaw cycle of clinical material is allowed.

Pretreatment of material:

Nasal and oropharyngeal swabs.

Vortex the tube, then centrifuge it at 5000 rpm for 5 s to sediment drops from the interior wall of the tube lid.

Nasopharyngeal sputum or aspirate or tracheal sputum or aspirate.

Use reagent Mucolysin (REF 180-CE) manufactured by CRIE for sputum and aspirate pretreatment. See the instruction manual to Mucolysin for a proper use.

The pretreated sputum (100 µl) is used for RNA/DNA extraction. If it is necessary to repeat the test, the rest of sputum can be frozen.

Bronchoalveolar lavage and bronchial washing fluid

Use 100 µl of material sample for extraction. If it is necessary to repeat the test, the remaining material can be frozen.

Autopsy material is homogenized using sterile porcelain mortars and pestles. Then, prepare a 10 % suspension in a sterile saline or phosphate buffer. Transfer the suspension to a 1.5-ml tube and centrifuge at 10,000 rpm for 5 min. The supernatant (100 µl) is used for RNA extraction. If it is necessary to repeat the test, the remaining sputum can be frozen.

7. WORKING CONDITIONS

AmpliSens® ARVI-screen-FRT PCR kit should be used at 18–25 °C.

8. PROTOCOL

Complete analysis includes following steps:

- DNA/RNA extraction from clinical samples.
- Reverse transcription.
- Amplification and real-time hybridization-fluorescence detection.
- Data analysis and interpretation of results.

8.1 DNA/RNA extraction

For a complete PCR assay, use the following nucleic acid extraction kit:

- RIBO-sorb, REF K2-1-Et-100-CE.
- RIBO-prep, REF K2-9-Et-100-CE.

DNA/RNA extraction from every clinical sample is carried out in presence of **IC STI-rec**.

Extract DNA from all types of biological material as described in the instruction manual to the RIBO-sorb reagent kit with some modifications specified below (item 8.1.1).

- The NucliSENS easyMAG automated nucleic acid extraction platform can be used as well (see Guidelines).

8.1.1 DNA extraction with RIBO-sorb

Add **10 µl** of **Internal Control STI-rec (IC)** and **450 µl** of **Solution for Lysis** into prepared tubes.

If suspended particles (incompletely dissolved material) are present, centrifuge the contents of the tubes at 10,000 rpm for 1 min. Transfer supernatant into other tubes.

8.2 Reverse transcription

It is recommended to use following RT reagents kits for complementary DNA (cDNA) synthesis from RNA.

- REVERTA-L, **REF** K3-4-100-CE, which contains RT-G-mix-1.

Carry out the reverse transcription procedure according to the manufacturer's instruction.

8.3 Preparing PCR

The total reaction volume is **25 µl**, the volume of DNA sample is **10 µl**.

At the amplification step, positive controls (see Table 1), CS+, and NCA are used in every experiment in order to control reagent purity and carefulness of operator's work. C– is also tested at the amplification step.

Table 1

Compliance of names of PCR-mixes-1-FL and positive controls of ARVI pathogens

PCR-mix-1-FL	Positive control samples (C+)
hRSv - hMpv	**Positive Control cDNA *hRSv - hMpv***
hAdv - hBov	**Positive Control DNA *hAdv - hBov***
hRv	**Positive Control cDNA *hRv***
hPiv 1/3	**Positive Control cDNA *hPiv* 1/3**
hPiv 2/4	**Positive Control cDNA *hPiv* 2/4**
hCov	**Positive Control cDNA *hCov***

8.3.1 Preparing tubes for PCR

The type of tubes depends on the type of PCR real-time instrument.

Use disposable tips with aerosol barriers for adding reagents, cDNA and control samples into tubes.

The total reaction volume is **25 µl**, the volume of DNA sample is **10 µl.**

1. Thaw the required number of tubes with the corresponding name (see Table 1).
2. Prepare the required number of tubes for amplification of cDNA from clinical and control samples.
3. For carrying out N reactions, mix in a new tube: **10*(N+1) µl of PCR-mix-1-FL-F** with the corresponding name (see Table 1), **5*(N+1) µl of PCR-mix-2-FRT** and **0.5*(N+1) µl of polymerase (TaqF)** (scheme of reaction mixture preparation is specified in Appendix 1).
4. Vortex the tube, then centrifuge shortly.
5. Transfer **15 µl** of the prepared mixture into each tube.
6. Add **10 µl** of **cDNA** obtained at the RNA reverse transcription stage into the prepared tubes.
7. Carry out the control reactions (for every **PCR-mix-1-FL-F**, see Table 1):

NCA - Add **10 µl** of **TE-buffer** to the tube labeled NCA (Negative Control of Amplification).

C+ - Add **10 µl of Positive Control** to tubes labeled C+ (**C+*hRSv-hMpv*** etc., depending on the PCR-mix-1-FL, **see Table 1**).

CS+ - Add **10 µl of Positive Control STI-88** to the tube labeled CS+.

C– Add **10 µ** of the sample extracted from **Negative Control** to the tube labeled C–.

8. Precipitate the reaction mixture in the bottom of the tube by short centrifuging for 1-2 s.

8.3.2 Amplification

1. Program the PCR instrument (with real-time detection) according to Table 2.

Table 2

ARVI-screen amplification program

	Rotor-type instruments[1]			Plate-type instruments[2]		
Step	Tempera-ture, °C	Time	Cycles	Tempera-ture, °C	Time	Cycles
1	95	**15 min**	1	95	**15 min**	1
2	95	10 s	10	95	10 s	10
	54	20 s		54	25 s	
	72	10 s		72	25 s	
3	95	10 s	35	95	10 s	35
	54	20 s Fluorescence detec-tion		54	25 s Fluorescence detec-tion	
	72	10 s		72	25 s	

Fluorescence is detected is in FAM/Green, JOE/Yellow/HEX and ROX/Orange fluorescent channels.

It is not allowed to perform «*Rhinovirus*» test together with other tests from AmpliSens® ARVI-screen-FRT PCR kit when working with **iCycler iQ** and **iQ5** instruments.

2. Place PCR tubes into the PCR instrument.
3. Run amplification and signal detection program.
4. After measurement, start data analysis and interpretation of results.

9. DATA ANALYSIS

The results are interpreted by the software of Rotor-Gene 3000 or Rotor-Gene 6000 or iCycler iQ or iQ5 instrument by the crossing (or not-crossing) of the fluorescence curve with the threshold line and shown as the presence (or absence) of a Ct (threshold cycle) value for required cDNA/DNA sample in the result grid (see Table 3).

Data analysis for each PCR-mix-1 should be performed individually, after withdrawal of tubes corresponding to the PCR-mix-1 used. For the «*Rhinovirus*» (*hRv*) test analysis, it is necessary to use **ONLY FAM** and **ROX** channels.

Table 3

Correspondence of PCR-mixes-1-FL-F and channels for ARVI pathogen detection

PCR-mix-1-FL-F	Fluorescence detection		
	FAM/Green	JOE/Yellow/HEX	ROX/Orange
hRSv-hMpv	IC	*hRSv*	*hMpv*
hAdv-hBov	IC	*hBov*	*hAdv*
hRv	IC	–	*hRv*
hPiv 1/3	IC	*hPiv* 3	*hPiv* 1
hPiv 2/4	IC	*hPiv* 2	*hPiv* 4
hCov	IC	*NL*-63, 229*E*	*HKU*-1, *OC* 43

[1] For example, Rotor-Gene 3000, Rotor-Gene 6000, Rotor-Gene Q, or equivalent.
[2] For example, iQ5, iCycler iQ, or equivalent.

Principle of interpretation of results:

- DNA/RNA of an ARVI pathogen is **detected** if the Ct value for this sample is determined in the results grid in the corresponding channel. The fluorescence curve for this sample should cross the threshold line in the interval of exponential growth of the fluorescence curve.
- DNA/RNA of an ARVI pathogen is **not detected** if the Ct value for tested sample is not determined (absent) in the results grid in the corresponding channel and if the Ct value in the results grid in the FAM channel does not exceed the specified boundary value.
- Result is considered to be **invalid** if the Ct for the tested sample is not determined (absent) in the corresponding channel for ARVI pathogens (see Table 3) and if the Ct value in the FAM/Green channel is absent or exceeds the specified boundary value. In this case the analysis of the sample should be repeated from the DNA/RNA extraction step.

The results of analysis are considered reliable only if the results obtained for positive and negative controls of amplification and negative control of extraction are correct (see Table 4).

Table 4

Results for controls

Control	Stage for control	Ct value in channel		
		FAM/Green	JOE/Yellow/HEX	ROX/Orange
		Detection of IC	Detection of ARVI pathogen	Detection of ARVI pathogen
C–	RNA extraction	Pos (< boundary value*)	Neg	Neg
NCA	Amplification	Neg	Neg	Neg
CS+	Amplification	Pos (< boundary value*)	Neg	Neg
C+	Amplification	Neg	Pos (< boundary value*)**	Pos (< boundary value*)

* For boundary values, see the Guidelines and Important Product Information Bulletin for AmpliSens® ARVI-screen-FRT PCR kit.

** **Positive Control cDNA** *hRv* is not determined in the JOE channel.

10. TROUBLESHOOTING

- If the Ct value for C+ is absent in JOE/Yellow/HEX and/or ROX/Orange channels or the Ct value is greater than the specified boundary value, PCR should be repeated for all negative clinical samples. If the same result is obtained, PCR analysis should be repeated for such samples starting from the DNA/RNA extraction stage.
- If the Ct value for C– and/or NCA is present in the channel for ARVI pathogen detection, this means that reagents or samples are contaminated. Analysis should be repeated for all samples in which the ARVI pathogen DNA/RNA was detected starting

from the DNA/RNA extraction stage and measures to detect and eliminate the source of contamination must be taken.

- If no signal is detected for the positive controls of amplification, it may suggest that the programming of the temperature profile of the used Instrument was incorrect, or that the configuration of the PCR reaction was incorrect, or that the storage conditions for kit components did not comply with the manufacturer's instruction, or that the reagent kit expired. Programming of the used instrument, storage conditions, and the expiration date of the reagents should be checked, and then PCR should be repeated.
- If a positive result (the fluorescence curve crosses the threshold line) is detected for a sample that has a fluorescence curve without the typical exponential growth phase (the curve is linear), this may suggest incorrect setting of the threshold line or incorrect calculation of baseline parameters. Such a result should not be considered as positive. Once the threshold line has been set correctly, PCR analysis of the sample should be repeated (if iCycler iQ or iQ5 instruments are used).

If you have any further questions or if you encounter problems, please contact our Authorized representative in the European Community.

11. TRANSPORTATION

AmpliSens® ARVI-screen-FRT PCR kit should be transported at 2–8 °C for no longer than 5 days.

12. STABILITY AND STORAGE

All components of **AmpliSens® ARVI-screen-FRT** PCR kit variant FRT-100 F (except for PCR-mix-2-FRT, PCR-mixes-1-FL-F (0.2 ml), and polymerase (TaqF)) are to be stored at 2–8 °C. PCR-mix-2-FRT, PCR-mixes-1-FL-F (0.2 ml), and polymerase (TaqF) are to be stored at temperature from minus 24 to minus 16 ºC when not in use. All components of the **AmpliSens® ARVI-screen-FRT** PCR kit are stable until the expiration date on the label. The shelf life of reagents before and after the first use is the same, unless otherwise stated.

PCR-mix-1-FL-F *hRSv – hMpv,* PCR-mix-1-FL-F *hPiv* 1/3, PCR-mix-1-FL-F *hPiv* 2/4, PCR-mix-1-FL-F *hCov,* PCR-mix-1-FL-F *hAdv – hBov*, and PCR-mix-1-FL-F *hRv* are to be kept away from light.

13. SPECIFICATIONS

13.1 Sensitivity

For samples from nasal and oropharyngeal swabs:

Pathogen	RNA/DNA extraction kit	Amplification and detection kit	Analytical sensitivity, GE/ml [3]
hRSv	**RIBO-sorb, RIBO-prep,** NucliSENS easyMAG	**AmpliSens® ARVI-screen-FRT** PCR kit	$1x10^3$
hMpv	**RIBO-sorb, RIBO-prep,** NucliSENS easyMAG	**AmpliSens® ARVI-screen-FRT** PCR kit	$1x10^3$
hPiv	**RIBO-sorb, RIBO-prep,** NucliSENS easyMAG	**AmpliSens® ARVI-screen-FRT** PCR kit	$1x10^3$
hCov	**RIBO-sorb, RIBO-prep,** NucliSENS easyMAG	**AmpliSens® ARVI-screen-FRT** PCR kit	$1x10^4$
hBov	**RIBO-sorb, RIBO-prep,** NucliSENS easyMAG	**AmpliSens® ARVI-screen-FRT** PCR kit	$1x10^3$
hAdv	**RIBO-sorb, RIBO-prep,** NucliSENS easyMAG	**AmpliSens® ARVI-screen-FRT** PCR kit	$5x10^3$
hRv	**RIBO-sorb, RIBO-prep,** NucliSENS easyMAG	**AmpliSens® ARVI-screen-FRT** PCR kit	$1x10^3$

13.2 Specificity

AmpliSens® ARVI-screen-FRT PCR kit makes it possible to detect cDNA/DNA specific regions of ARVI causative agents listed above. The specificity of this kit was confirmed by investigation of the following reference strains: *human Respiratory Syncytial virus (*subgroup A, Long strain*), human Rhinoviruses (*13, 15, 16, 17, 21, 26, and 29 types). The specificity of the kit was also proved during examination of clinical material with subsequent confirmation by sequencing the amplification products of the following pathogens: *human Respiratory Syncytial virus* (types A and B); *Parainfluenza virus*-1-4*; human Coronaviruses* OC43, E229, NL63, and HKUI; *human Adenoviruses* B, C, and E; *Metapneumoviruses A* and *B;* and *human Bocavirus*. It is also possible to discriminate between closely related enteroviruses in the reaction for rhinovirus RNA detection. The adenovirus detection reaction is not intended for typing because of possible interaction with closely related adenoviruses of other types.

Non-specific reactions between the components of the PCR kit and cDNA/DNA of other viral (*Influenza A* and *B viruses,* Urbani SARS-associated *Coronavirus (*Frankfurt*)*, *Coronaviruses* causing feline infectious peritonitis (F1, F2, and F5) and *s*wine transmissible gastroenteritis (TGEV1, TGEV8, and TGEV9), *Herpes viruses*, *Cytomegalovirus*, *Enteroviruses* (Echo9 and Echo30), and 60 samples of cerebrospinal fluid from meningitis patients containing *Enterovirus* RNA) and bacterial (*Streptococcus* spp., *Staphylococcus aureus*, *Mycoplasma influenza*, *Chlamydophila pneumonia*, *Haemophilus influenza, Moraxella catarrhalis,* and *Legionella pneumophila*) agents that cause acute respiratory diseases as well as normal nasal and oropharyngeal human microflora and human cDNA/DNA are absent.

[3] Analytical sensitivity is expressed in genome equivalents of pathogen (GE) per 1 ml of sample.

14. REFERENCES

1. Handbook “Sampling, Transportation, and Storage of Clinical Material for PCR Diagnostics”, developed by Federal Budget Institute of Science “Central Research Institute for Epidemiology” of Federal Service for Surveillance on Consumers’ Rights Protection and Human Well-Being, Moscow, 2008.
2. Guidelines to instruction manual AmpliSens® ARVI-screen-FRT, developed by Federal Budget Institute of Science “Central Research Institute for Epidemiology” of Federal Service for Surveillance on Consumers’ Rights Protection and Human Well-Being, Moscow.

15. QUALITY CONTROL

In compliance with Federal Budget Institute of Science “Central Research Institute for Epidemiology” ISO 13485-Certified Quality Management System, each lot of **AmpliSens® ARVI-screen-FRT** PCR kit has been tested against predetermined specifications to ensure consistent product quality.

16. KEY TO SYMBOLS USED

REF	Catalogue number		Caution
LOT	Batch code		Sufficient for
IVD	*In vitro* diagnostic medical device		Expiration Date
VER	Version		Consult instructions for use
	Temperature limitation		Keep away from sunlight
	Manufacturer	**NCA**	Negative control of amplification
	Date of manufacture	**C–**	Negative control of extraction
FBIS CRIE	Federal Budget Institute of Science “Central Research Institute for Epidemiology”	**C+**	Positive control of amplification
EC REP	Authorised representative in the European Community	**IC**	Internal control