Human immunodeficiency virus (HIV)

HIV is a lentivirus (a member of the retrovirus family) differentiated on structural and antigenic properties into two virus types: HIV-1 and HIV-2. HIV-2 occurs considerably less often than HIV-1. In accordance with 1991 Nomenclature, there are three independent HIV-1 groups: «M» (main); «O» (outlier); «N» (non-V/non-O). Groups O and N are less widely spread and occur in African countries population. Group M includes 11 sub-types: A1, A2, B, C, D, F1, F2, G, H, J, K.

Transmission ways of the virus are very important for the virus spread. HIV is transmitted by three ways: at heterosexual and homosexual intercourse, parenteral with blood and blood products and vertically: from the infected mother to the child by an intrauterine way, during the child delivery or soon after the childbirth at breast feeding.

This method has a lot of advantages:

- detection of virus DNA/RNA allows reducing the length of the “serological window;
- PCR is an indispensable approach for HIV-diagnostics in children born from HIV-infected mothers:
- determination of HIV RNA in the blood plasma (viral load) is an obligatory procedure to monitoring of the therapy effectiveness

ADVANTAGES OF SACACE™ HIV REAL-TM QUANT KIT

- Application of primers and probes in the most conservative area of the HIV-1 polymerase gene that allow effective detection of the majority of HIV-1 subtypes.
- Use of the Quantitative Internal Control (concentration reported in Data Card) which allows not only to monitor the extraction procedure and to check possible PCR inhibition but also to verify possible losses of the RNA during extraction procedure thus enabling to calculate precisely the HIV viral load.
- Presence in the reagents supplied with the kit of two positive controls of the extraction: Pos1 – low viral load and Pos2 – medium viral load that are quantitatively described in Data Card and allow quality control of the conducted analysis.
- Use of Quantitative Standards for HIV RNA and HIV IC enabling to calculate precisely the HIV viral load.
- The reagent kit possesses a wider linear range of measurements (from 25 to 5 x 10^6 copies/ml).

HIV RNA Quant Kits

V0-96/3FRT SA, RG*	**HIV Real-TM Quant Dx** Real Time PCR Test with positive controls and standards (96 ready to use lyophilized tubes - 50 µl Reaction Mix) * validated on SA and RG, but optimized also on iQ,SC,MX,A,B	**R**	CE	96	Linearity: 48 - 1 x10^7 IU/mL
TR-VM-100FRT SA, RG, iQ, MX, A,B	**HIV RNA Real-TM Quant** Complete Real Time Test with Ribo-Sorb extraction kit (25 µl Reaction Mix)	**R**		100	Linearity: 2,5 x10^2- 5 x10^6 copies/mL
TR-VM-100FRT C SA, RG, iQ, MX, A,B	**HIV RNA Real-TM Quant** Complete Real Time Test with Ribo-Virus column kit (25 µl Reaction Mix)	**R**		100	Linearity: 2,0 x10^2- 5 x10^6 copies/mL
R-VM-100FRT SA, RG, iQ, MX, A,B	**HIV RNA Real-TM Quant** Real Time PCR kit with the RNA extraction controls (25 µl Reaction Mix)	**R**		100	Linearity: 50- 5 x10^6 copies/mL

HIV DNA

HIV-infection diagnostics in children born from HIV-infected mothers is difficult due to the fact that mother’s antibodies to HIV persist in such children’s blood for a long time.The problem of earlier HIV-infection diagnostics in newborns was solved with development of molecular-genetic methods that allow detection of HIV genome fragments in the peripheral blood at early infection stages.

HIV DNA kit

TR-V1-D SA, RG, iQ, MX, SC, A	**HIV DNA Real-TM Qual** Complete Real Time Test with Hemo-Sorb extraction kit	**R**		100	1 x10^2 copies/ml

HIV Infection associated Kits

Hypersensitivity reaction to abacavir is strongly associated with the presence of the HLA-B*5701 allele. Abacavir (Ziagen, also in the combination pills Kivexa and Trizivir) is a potent antiretroviral drug that is a popular choice for first-line antiretroviral HIV therapy. Its main disadvantage is a hypersensitivity reaction that occurs in between 5% - 8% of patients treated with this drug. **HLA-B*5701 Real-TM** test can predict who will develop a severe allergic reaction to the **anti-HIV drug abacavir** as the presence of HLA-B*5701 is significantly associated with an abacavir hypersensitivity.

HIV Infection associated kits

H53-100FRT SA, RG, iQ, SC,MX, A,B,LC	**HLA B*5701 Real-TM** Real Time Amplification Kit	**R**	CE	100	1 x10^3 cells/ml

Pneumocystis pneumonia (PCP) or pneumocystosis is a form of pneumonia, caused by the yeast-like fungus (which had previously been erroneously classified as a protozoan) ***Pneumocystis jirovecii (carinii)***.
P jiroveci is now one of several organisms known to cause life-threatening opportunistic infections in patients with advanced HIV infection worldwide.

TP2-50FRT SA, RG, iQ, SC,MX, A,B,LC	**Pneumocystis jirovecii (carinii) Real-TM** Complete Real Time Test with DNA/RNA Prep extraction kit	**R**	CE	50	5 x10^2 copies/ml
P2-50FRT SA, RG, iQ, SC,MX, A,B,LC	**Pneumocystis jirovecii (carinii) Real-TM** Real Time Amplification kit	**R**	CE	50	5 x10^2 copies/ml

Cryptococcosis, caused by ***Cryptococcus neoformans***, is the most common fungal disease in HIV infected persons and it is the AIDS-defining illness in 60-70% of HIV infected patients.

F4-100FRT SA, RG, iQ, SC,MX, A,IL,B,LC	**Cryptococcus neoformans Real-TM** Real Time Amplification Kit	**R**	CE	100	

HCV/HBV/HIV Real-TM

Transfusion-associated transmission risk of infectious diseases has been reported worldwide. For screening of blood donations in order to reduce the residual risk of transmission of bloodborne viruses, viral nucleic acid testing (NAT), has been introduced by the European plasma industry in 1995, and subsequently introduced for blood donations in many countries. NAT was implemented to reinforce the safety of the blood supply; it can detect acute viral infections during the 'window period', that are not detected by the serological screening methods. Current NAT procedures usually demand pooling of blood donation samples due to the format of the employed platforms.

ADVANTAGES OF SACACE™ HCV/HBV/HIV REAL-TM KIT

- Simultaneously amplification (multiplex) in 1 PCR tube of nucleic acids from HIV, HCV, HBV;
- Separate real-time detection and differentiation of nucleic acids from HIV, HCV and HBV on different channels (FAM – HCV, JOE/HEX/Cy3 – HIV, ROX – HBV, Cy5 – internal control);
- Optimization on different equipments;
- Possibility of pooling (5-10 samples in pool format is recommended);
- High sensitivity*: **HCV RNA** – 10 IU/ml; **HBV DNA** – 5 IU/ml; **HIV RNA** – 20 copies/ml**.**
  * values obtained using the "Magno-Virus" extraction kit (Sacace REF K-2-16/1000)

Hepatitis C / Hepatitis B / HIV multiplex detection kits

V50-100FRT SA, RG, iQ, MX, A, SC	**HCV/HBV/HIV Real-TM** Real Time PCR Test with RNA/DNA extraction controls	**R**		100	10/5/20 IU/mL
V62-100FRT RG, SA	**HCV/HBV/HIV1/HIV2 Real-TM** Real Time PCR Test	**R**		100	10/5/20 IU/mL