VV-1304-004
Vaccines against highly Pathogenic influenza Viruses of the avian Origin
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Worldwide spreading of h5 and h7 highly pathogenic influenza viruses of the avian origin, which periodically infect and kill humans without prior adaptation, poses a constant threat of the new pandemic. The effectiveness of the pandemic prevention completely depends on the quality of the existing influenza vaccines. Typical methods of the vaccine production from the antigenically relevant strains are problematic in case of high virulent h5 and h7 viruses. Therefore, new approaches to the construction of the vaccine strains and production technologies are required in order to protect the population.
Keywords: avian highly pathogenic influenza virus, vaccine development

VV-1304-010
The Khurdun Virus (KHURV): a new representative of the Orthobunyavirus (Bunyaviridae)
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Unidentified Khurdun virus (KHURV) was isolated in 2001 from coot (Fulica atra, linnaeus, 1758) in the Volga river delta (astrakhan region, Russian Federation). here we report that the KhUV genome was de novo sequenced (on illumina platform) and the KHURV was classified as a novel prototypic bunyavirus. The KHURV genome comprises three negative-sense rna segments (l, M, and s); its terminal nucleotide sequences are canonical for the Orthobunyavirus genus. Based on the results of the molecular-genetic and phylogenetic analysis we suggest that the KHURV belongs to the genus Orthobunyavirus (Bunyaviridae).
Keywords: Bunyaviridae, Orthobunyavirus, Khurdun virus, KHURV

VV-1304-014
Molecular–genetic characterization of the Bhanja Virus (BHAV) and the razdan Virus (RAZV) (Bunyaviridae, Phlebovirus) isolated from the ixodes Ticks rhipicephalus Bursa (canestrini and Fanzago, 1878) and Dermacentor Marginatus (sulzer, 1776) in transcaucasus
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Two bunyaviruses, Bhanja (BhaV, leiV-az1818) isolated from the ixodes ticks rhipicephalus bursa (canestrini and Fanzago, 1878) in azerbaijan (1973) and razdan (RAZV; strain leiV-arm2741) isolated from the Dermacentor marginatus (sulzer, 1776) ticks in armenia (1972), were de novo sequenced (on the illumina platform). The amino acid identity between these viruses proteins were 95.8% (rdrp, l–segment), 90.3% (gnc, M–segment), and 92.5% (n, s–segment). Thus, RAZV was classified to BhaV group. gnc protein identity of RAZV with european BhaV strains is more than 90%. With the african Forecariah virus (FORV) RAZV has 85% identity. BHAV leiV-az1818 is most closely related to the indian strain BhaV ig690 (99%), while showing 90% identity with the european BhaV isolates. The genome structure of BHAV and RAZV is typical of the tick-transmitted phleboviruses. Based on the result of the molecular-genetic and phylogenetic analysis RAZV has been classified as belonging to BHAV group in the genus Phlebovirus (Bunyaviridae).
Keywords: Bunyaviridae, Phlebovirus, arboviruses, Bhanja virus, Razdan virus, BHAV, RAZV

VV-1304-020
Pathogenic effect of Pandemic influenza Virus h1n1 under replication in cultures of human cells
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The propagation of the pandemic influenza virus h1n1 in cultures of bronchial (calu-3) and intestinal (caco-2) differentiated epithelial cells of human origin was studied. The canine epithelial cell lines, MDCk-h and MDck-2, were comparatively tested. The two human cell lines were found to be highly sensitive to the influenza pandemic strains a/hamburg/05/09 and a/Moscow/501/2011 and maintained their replication without addition of trypsin to culture medium. Virus strains of seasonal influenza h1n1, such as a/Moscow/450/2003, a/Memphis/14/96, and laboratory strain a/Pr/8/34, multiplied in these human cells in similar manner. The intracellular cleavage ha0>ha1+ha2 by the host virus-activating protease (iaP) occurred in both human cell lines under infection with each influenza virus h1n1 including pandemic ones.
comparatively, this cleavage of all influenza h1n1 virus strains appeared to be either undetectable or low-
detectible in MDcK-h and MDcK-2, respectively, thereby implying low levels of active iaP in these cells. 
Multiplication of pandemic and seasonal influenza h1n1 viruses in calu-3 and caco-2 cells caused cytopathic 
effect, which was accompanied with low autophagy and apoptosis events. These data allow recommending 
human cell lines, calu-3 and caco-2, for optimized isolation and passaging of clinical strains of influenza 
pandemic viruses h1n1.

Keywords: influenza virus, human cells, autophagy, apoptosis

VV-1304-028
HIV-1 genetic Variants in the asian Part of Russia: a study (2005-2010)
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Russia; 6 Kurgan AIDS Center, Russia; 7 Tyva AIDS Center, Russia; 8 Academic Medical Center of 
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The HIV-1 genetic variants circulated in the asian part of the russian Federation in 2005-2010 were studied. 
The samples of HIV-1 (427 in total) were collected in Khabarovsk, Magadan, Kurgan, Krasnoyarsk, 
noyabr’sk, Yakutsk, altay, and Tyva. sequencing of some genome regions followed by the phylogenetic 
analysis or specific internet resource sampling were used as the main methods of the HIV subtyping. The 
domination of the IDU-AHIV-1 genetic variant typical of HIV -infection epidemic in russia was shown in all 
regions tested in 2005-2010. This variant prevailed both in iDUs and heterosexuals. in addition to IDU-a, 
some other HIV -1 genetic variants were found among them: subtype B and recombinant crF03_aB. The HIV 
-1 genetic polymorphism in russia was found to be low. an increase in the genetic distance among studied de 
novo samples was noted in the asian part of russia in 2005-2010 (26-68%) as compared to the european 
variants in 1996-1999 (10%).

Keywords: HIV-infection, molecular monitoring, Asian part of Russia

VV-1304-035
Immunomodulators and specific inactivated Vaccines in Urgent Prophylaxis under experimental 
arboviral infection
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A reliable protective activity of the home-manufactured immunomodulators (ridostin, polyribonate 
glucosemuramy-l- dipeptide, Mylife, and peptidoglycane-160) was detected in mice. The mice were infected 
with the equine eastern encephalomyelitis virus (eeeV, an alphavirus), or with the tick-borne encephalitis 
virus (TBeV), or the yellow fever (YF) virus (both flaviviruses). The effect of the urgent vaccination reliably 
increases when the vaccination is combined with the immunomodulators listed above. Under the alphavirus 
infection, the combined effects of the vaccine and ridostin were accompanied with increased specific 
humoral and cellular immune response (virus-specific antibodies and adoptive transfer of immune 
lymphocytes). The combined application of the specific vaccine and ridostin can be recommended for clinical 
trials of TBe in the foci of infection.

Keywords: arbovirus infection, immunomodulator, vaccine, immune response

VV-1304-039
A comparative study of the antiviral activity of chemical compounds concerning the Orthopoxviruses 
experiments in vivo
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In the experiments using intranasal (i/n) infection of mice with the ectromelia virus (eV) in a dose 10 
ID50/head (10 . 50% lethal dose/head) or with the monkeypox virus (MPXV) in a dose 10 id50/head (10 . 
50% infective dose/ head) it was demonstrated that the antiviral efficiency of chemical compounds – the 
condensed derivatives of pyrrolidin-2,5-dion, as well as their predecessors and the nearest analogues, 
synthesized in novosibirsk institute of Organic chemistry of the siberian Branch of the russian academy of 
sciences (niOch sB ras) was observed. as a positive control we used the antipoxvirus chemical preparation
sT-246 available from siga Technologies inc. (Usa), synthesized in niOch sB ras by the technique suggested by the authors. It was demonstrated that the compound niOch-14 (7-[n-(4-Trifluoromethylbenzoyl)-hydrazidecarbonil]-tricyclo[3.2.2.02,4]non-8-en-6carboxylic acid) possessed comparable with sT-246 antiviral activity concerning eV and MPXV on all indicators used. Therefore, at infection of mice with eV (strain K-1) and peroral administration of niOch-14 and sT-246 in a dose 50 mkg/g of mouse weight (12-14 g) within 10 days the survival rate and average life expectancy of mice authentically exceeded the control levels. eV titers in lungs through 6 days after infection in the same groups were lower than in the control. In addition to that, after 7 days of infection of mice with MPXV (strain V79-1-005) and daily peroral administration of niOch-14 and sT-246 in a dose 60 mkg/g of mouse weight (9-11 g) authentic decrease in a part of infected animals and MPXV titers in lungs was observed.

Keywords: mice, orthopoxviruses, monkeypox virus, ectromelia virus, antiviral activity, condensed derivatives of pyrrolidin-2,5-dion

**VV-1304-044**

**Genetic characterization of the rabies Virus Field isolates Detected in russian Federation within the Period 2008-2011**

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Sixty-three gene fragments of rabies virus field isolates detected within the period 2008-2011 in different regions of Russian Federation were sequenced. The comparison with previously tested isolates and strains has shown that newly isolated isolates can be placed into five previously described phylogenetic groups: arctic group, central russian group, eurasian group, northern european group, and caucasian group. The arctic group isolates detected in Komi republic were identical to previously described rabies virus strain from Yakutia. This is the first reliable case of detecting arctic group rabies virus in european part of russia.

Keywords: rabies virus, phylogenetic analysis