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Determining the optimal shelf life of freeze-dried strains of influenza virus, isolated from swine

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Diagnostic preparations have been obtained based on five Kazakhstan strains of influenza A/H1N1 viruses, isolated from swine in the Almaty (07/13, 06/14 and 10/14) and Kostanay (23/14 and 24/14) oblasts of Kazakhstan, composed of freeze-dried highly active and highly specific purified antigens. The freeze-dried strains of influenza A virus after one, three and six months of storage were tested for infectious activity. It was found that, after storage of freeze-dried viruses within one month at 4°C, hemagglutinating activity of the virus 07/13 (H1N1) remained at the same level (1:1024), in the rest it decreased twice. Infectious activity of all tested influenza strains decreased by an average of 1-2 lg EID₅₀/0.2 ml. As a result of three-month storage under the same conditions, hemagglutinating activity in the strain 07/13 decreased twice (1:512), in the other viruses-four times (1:256). Infectious activity of all influenza virus isolates decreased to 1.44-4.47 lg EID₅₀/0.2 ml. After six-month storage, hemagglutinating activity of the Kostanay (23/14 and 24/14) and Almaty (07/13) isolates remained the same as that of after three-month storage (1:256 and 1:512, respectively); in the Almaty viruses (06/14 and 10/14), it decreased eight times - 1:128. Infectivity of influenza virus strains varied in the range of 1.23-4.33 lg EID₅₀/0.2 ml. Thereby, the obtained freeze-dried antigens to the Kazakhstan influenza virus strains can be used as standard diagnosticums for detection of specific antibodies in blood serums, even after six months of storage, since the maintenance of their hemagglutinating and infectious activity was observed.

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