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HIV ANTIBODY TESTING TO IDENTIFY RECENT HIV INFECTION

BACKGROUND: New test, "DS-EIA-HIV-AB-PERIOD", is an enzyme immunoassay to define probable period of infection with human immunodeficiency virus type 1 (HIV-1) or HIV-1 Group O in serum (plasma) human blood. The identification of newly acquired human immunodeficiency virus type 1 (HIV-1) infection provides important information for public health programs and allows monitoring of the dynamics of HIV transmission and dynamics of the epidemics and identifies candidates for clinical treatment.
OBJECTIVE: The aim of this study is design and development of the EIA assay to distinguish HIV-seropositive individuals that were recently infected (up to 9 month).
METHODS: Recombinant antigens, comprising HIV-1 and HIV-1 (group 0) gp 41 immunodominant regions were used for coating microtiter plates. Mixture of biotin-labeled recombinant antigens and streptavidin labeled by horse radish peroxidase were used as conjugates. During the assay performance each sample was tested in native and diluted form. The assay assessment was carried out using seroconversion panels (n=29) (SeraCare, ZeptoMetrix, USA) and samples (n=129) with the preliminary defined time of HIV-1 infection which were identified based on HIV algorithm testing ("Krasnoyarsk regional AIDS center", Russia). Additionally specificity of the assay was assessed by testing EIA HIV negative blood donors (n=352).
RESULTS: The newly developed assay is able to define correctly as recent infections 100% of samples with seroconersion profile and 94% of samples with the preliminary defined time of HIV infection. Seroconversion period in commercial available panels varies from 10 to 104 days.
CONCLUSION: The assay provides a reliable method for identification recently (up to 9 month) acquired HIV-1 infection.

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