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IMMUNOCHROMATOGRAPHIC ASSAY IN THE DIAGNOSIS OF CATTLE LEUCEMIA

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Immunochromatographic assay (IChA) - a method that based on the separation of particles by the method of pair tying and reaction between antigen and proper to this antigen antibody in biological materials (urine, saliva, blood, serum or plasma of blood, etc.). The technology of this method is being used to develop a wide and growing range of tests for clinical and veterinary diagnostics, agriculture, food industry, bio-protection and protection of the environment.

The working principle of IChA consists in the fact that when we immerse it in physiological liquid, it starts to migrate along the strip by the principle of thin-layer chromatography. Antibodies with dye move together with the liquid. If the fluid contains analyzed antigen (hormone, infection or cancer marker), it will tie with the first and the second type of antibodies. In this case, there is happening the accumulation of antibodies with dye around the antibodies that inflexibly immobilized in the test zone of IChA-strip, which will manifest in the form of a bright-colored strip. Free antibodies with dye migrate further along the strip and inevitably cooperate with secondary antibodies in the control zone, where will observe the second painted (control) strip. Cooperating in the control zone must be always (if the analysis has been carried out correctly), regardless of presence or absence of the investigated antigen in substrate. When we use this test, it is possible to receive results within only in 3 to 8 minute after it starts. The efficiency and the reliability of the IChA test, allow to save time for carry out the survey and timely take the veterinary-preventive measures.

The purpose of our work is develop the IChA test for the diagnosis of cattle leukemia. Currently it was defined receipt parameters of monoclonal antibodies' (specific polypeptide antigen of leukemia virus) conjugates with the preparation of a colloidal gold (Gold colloid, 10 nm, Sigma). Received conjugate was tested by the DOT-immunoanalysis using the original antigen. It was determined the assemblage parameters of the test, by using a set of commercial membranes (sticky tape to build the test, adsorbing pad, conjugate pad, sample pad, membranes on the laminate).

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