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Detection of light chain restriction in chronic B-lymphoid leukaemia and B-non-Hodgkin's lymphoma.

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Abstract

The determination of immunoglobulin light chain restriction using monoclonal and polyclonal antibodies is a rapid method for the detection of a neoplastic B-cell-population. Cytocentrifuge preparates of mononuclear blood cells from 42 patients with chronic B-lymphoid leukaemia and of lymph node aspirates from 24 patients with B-non-Hodgkin's lymphoma were examined using the alkaline phosphatase-antialkaline phosphatase (APAAP) method. Monoclonal antibodies from different commercial sources and rabbit polyclonal antibodies were used in this study. Staining with polyclonal antibodies demonstrated light chain restriction in 65 cases. The leukaemic cells of a patient with hairy cell leukaemia did not express light chain immunoglobulins. Monoclonal antibodies from two manufacturers demonstrated monotypic staining for light chains in all cases with light chain immunoglobulins. Monoclonal antibodies from four manufactures failed to show monotypic light chains in 5, 21, 25 and 28 of the 65 cases. All investigated antibodies detected a similar percentage of light chain-positive lymphocytes in 10 healthy persons. We conclude that not all investigated monoclonal antibodies are suitable for detection of light chain restriction in B-non-Hodgkin's lymphomas and chronic B-lymphoid leukaemias. However, using selected monoclonal antibodies or rabbit polyclonal antibodies the APAAP method is very sensitive for detection of light chain restriction in these disorders.

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