

## **ABSTRACT**

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Title of rigorous thesis: Immunophenotyping of mature B-cell neoplasms

This thesis focuses on the B-lymphoproliferative diseases immunophenotype assessed by flow cytometry, which is a method currently used for the diagnosis and classification of these diseases. Apart from the diagnostic value, flow cytometry can be used for minimal residual disease monitoring after the treatment of hematological malignancies (e.g. chronic lymphocytic leukemia). A great advantage of flow cytometry is the possibility of analysing virtually any biological material. In our work we investigated peripheral blood and bone marrow. The aim of the study was to compare the expression of selected surface markers in patients suffering from different B-lymphoproliferative disorders in peripheral blood and bone marrow. We analysed 171 samples (79 peripheral blood samples and 92 bone marrow samples), which were measured on a flow cytometer BD FACS Canto II. Seventy-five women and ninety-six men we included in the study. Peripheral blood samples and bone marrow samples were sorted into the following groups: CLL, MCL, B-NHL NOS and other B lymphoproliferation disorders.

Diagnosis of B-lymphoproliferative diseases is based on the characteristic expression of CD45, CD19, CD20, CD22 and detection of monoclonal B-cell expansion (determined by the expression of the light chain KAPPA or LAMBDA). Additional markers are used to further classify the type of B-lymphoproliferative disease. The essential markers are CD5, CD10, CD23, CD43, CD200, CD103, CD79b, CD38 and IgM. Recently a diagnostic value of CD81 and CD49d have been showed as well.