Reflection note

B lymphocytes are defined by the presence of the surface immunoglobulins. These immunoglobulins play the role of specific receptor for antigen (BCR). They are composed of two identical H heavy chains, and two identical L light chains (each chain is composed of a constant C region and a variable V region). The diversity of the BCR results from recombination of the gene segments coding for the variable parts of the heavy and light chains.

The B-cells repertoire of a human is a diverse range of B-cells distinguished by their unique immunoglobulin (BCR). There are several checkpoints at different stages of B-cell maturation at which expanded clones could be molecularly defined. By studying the mutations that occur at different stages of B cell maturation, we can identify clones - a collection of genetically similar cells defined by similarities in their antibody heavy chain, light chain, or a combination of both.

There are different experimental approaches for antibody repertoire analysis: Hybridoma panels, Phage display, Single cell cloning, Bulk sequencing of H chains or L chains.

The B-cell repertoire defines the human humoral immune repertoire, the study of which can help to determine the causes and dynamics of certain diseases, such as leukaemia or autoimmune diseases.