Antibodies are rapidly becoming essential tools in the clinical practice, given their ability to recognize their cognate antigens with high specificity and affinity, and a high yield at reasonable costs in model animals. Unfortunately, when administered to human patients, xenogeneic antibodies can elicit unwanted and dangerous immunogenic responses. Antibody humanization methods are designed to produce molecules with a better safety profile while maintaining their ability to bind the antigen. This can be accomplished by grafting the non-human regions determining the antigen specificity into a suitable human template. Unfortunately, this procedure may result in a partial or complete loss of affinity of the grafted molecule that can be restored by back-mutating some of the residues of human origin to the corresponding murine ones. This trial-and-error procedure is hard and involves expensive and time-consuming experiments. Here we present tools for antibody humanization (Tabhu) a web server for antibody humanization. Tabhu includes tools for human template selection, grafting, back-mutation evaluation, antibody modeling, and structural analysis, helping the user in all the critical steps of the humanization experiment protocol.