PREPARATION AND INTEGRITY EXAMINATION OF FREEZE DRIED KIT OF TRASTUZUMAB-IMMUNOCONJUGATES AND COLD LABELED IMMUNOCONJUGATES BY APPLYING SDS-PAGE ELECTROPHORESIS

Marija Sterjova1,2, Predrag Džodić2, Tatjana Ruskovska1, Paulina Apostolova1, Milan Risteski3, Emilija Janevik-Ivanovska1

1University "Goce Delcev", Faculty of Medical Sciences, Štip, RN Macedonia
2University of Niš, Faculty of Medicine, Department of Pharmacy, Niš, Serbia
3University Clinic of Radiotherapy and Oncology, Skopje, RN Macedonia

Contact: Marija Sterjova
Sutjeska 43b/5, Štip, RN Macedonia
E-mail: marija.sterjova@ugd.edu.mk

Radioimmunoconjugates are promising agents in diagnostics and treatment of different types of cancers. The aim of this study was the formulation of stable freeze dried kits of trastuzumab with three types of bifunctional chelators for further radiolabeling. The integrity of the antibody in formulated conjugates was examined with sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE).

Trastuzumab is a humanized monoclonal antibody used in the therapy of aggressive HER2 positive breast cancer. Conjugation of trastuzumab was made with various chelators: p-SCN-Bn-DTPA (1:10; 1:20; 1:50), p-SCN-Bn-DOTA (1:20), and 1B4M-DTPA (1:10; 1:20; 1:50). The purified immunoconjugates were lyophilized by applying two day protocol in order to produce the stable freeze dried kits. Cold labeling with nonradioactive isotopes LuCl3 and YCl3 was performed to examine the possible modifications of secondary structure after radioactive labeling. SDS-PAGE electrophoresis was used to estimate the purity and integrity of the antibody before and after conjugations, lyophilization and labeling under reducing conditions.

The obtained results show that there is no degradation of the examined antibody. The trastuzumab-conjugates and cold labeled formulations migrated in two bands (~50 kDa and ~25 kDa), in the same way as IgG1 antibodies and unmodified trastuzumab.


Key words: Bifunctional chelators, conjugations, electrophoresis, trastuzumab