ELECTROPHORESIS AND RAMAN SPECTROSCOPY CHARACTERIZATION OF INTEGRITY AND SECONDARY STRUCTURE OF *p*-SCN-Bn-DTPA- AND *p*-SCN-Bn-1B4M-DTPA-CONJUGATED TRASTUZUMAB

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Abstract

Trastuzumab is a humanized monoclonal antibody approved for treatment of HER2 positive breast cancer. Conjugation of trastuzumab offers a promising strategy of selective anticancer therapy. Trastuzumab-emtansin is a new generation of cytotoxic drug conjugated antibody with higher tumor selectivity and less toxicity of emtansin. Conjugates of trastuzumab with bifunctional chelators (BFCs) for further radiolabeling are a step ahead in the field of radiopharmacy for therapy and imaging of aggressive HER2 positive cancers. The purpose of this study is characterization of integrity and secondary structure of antibody in already formulated lyophilized conjugates with *p*-SCN-Bn-DTPA- and *p*-SCN-Bn-1B4M-DTPA- by applying SDS-PAGE electrophoresis and Raman spectroscopy. The results are positive and give an opportunity for further radiolabeling of freeze dried conjugates.

Keywords: trastuzumab, p-SCN-Bn-DTPA, *p*-SCN-Bn-1B4M-DTPA, electrophoresis, Raman spectroscopy.