Abstract

Copper radionuclides have a potential in nuclear medicine as diagnostic or therapeutic agents. Copper isotopes are used in the form of coordination compounds with various ligands, such as derivatives of 1,4,8,11-tetraazacyclotetradecane (cyclam). Properties of such complexes can be modified by pendant arms introduced on amino groups of cyclam. This thesis is aimed on the synthesis of asymmetrically substituted cyclam derivative with derivatives of phosphorous acids in 1,8- position. In spite of the fact, that the target ligand has not been successfully synthesised, various possibilities of substitution on diprotected cyclam were investigated. New possibilities of orthogonal protection of cyclam were found as well.

Keywords: PET, SPECT, copper complexes, cyclam protection, phosphonic acids