

Abstract:

Cyclam (1,4,8,11-tetraazacyclotetradecane) derivatives are widely used for various purposes. In a medicine they are applied as ligands for radiometals applied as diagnostic or therapeutic agents against tumours, hypoxic brain tissues *etc.* In this thesis a new method for asymmetric cyclam derivatives preparation was developed. New cyclam derivatives with trifluoroethyl groups were prepared too. Paramagnetic metal complexes with these fluorinated ligands can be used as contrast agents for ^{19}F -MRI.

Keywords:

Cyclam; Non-symmetric protection; Contrast agents; Trifluoroethylamines; Paramagnetic relaxation; ^{19}F -MRI.