

Abstract

This Thesis deals with denitrogenative transformations of *N*-fluoroalkyl-1,2,3-triazoles, easily available heterocycles via copper(I)-catalyzed azide-alkyne cycloaddition (CuAAC) of safe and stable *N*-fluoroalkyl azides and alkynes.

The introductory chapter describes general approaches towards *N*1-substituted 1,2,3-triazoles, methods of *N*1- α,α -difluoroalkyl-1,2,3-triazoles preparation and both, transition metal-catalyzed and transition metal-free transformations of *N*1-substituted 1,2,3-triazoles.

In the first part of the Thesis, rhodium-catalyzed reactions of *N*-fluoroalkyl-1,2,3-triazoles are described. Rhodium-catalyzed reactions of *N*-fluoroalkyl-1,2,3-triazoles in presence of suitable reagents provide access to five-membered *N*-fluoroalkyl heterocycles, 2-fluoroalkyl oxazoles and ketamides.

In the second part of the Thesis, both Brønsted and Lewis acid-mediated transformations of *N*-fluoroalkyl-1,2,3-triazoles leading to stereodefined *N*-alkenyl compounds, such as enamides, enimes, amidines and other are discussed. The robustness of the method is showcased on gram scale syntheses and preparation of a drug analogue. At last, thermally-induced rearrangement of *N*-fluoroalkyl-1,2,3-triazoles to 3-fluoroalkyl-2*H*-azirines and the proposed mechanism of the reaction are described.