Abstract

Natural products derived from 1-azafluoranthene are present in a limited amount in a few families of tropical plants (*Menispermaceae*, *Araceae, Aristolochiaceae, Acoraceae*). Even with limited accessibility of those compounds there are already several promising biological activities reported (cytotoxicity, anti-HIV activity) and based on theoretical models, other activities have been predicted.

This master's project is focused on utilization of our developed method for preparation of the basic azafluoranthene core and its application for the synthesis of synthetic derivatives of natural products and other structural analogs of azafluoranthenes. First, the work proposes the most feasible pathway for preparation of adequately substituted starting compounds. After their preparation there is a small library of new polysubstituted derivatives of 1-azafluoranthene prepared by directed C−H activation/annulation process. In the last part, the different reactivity of some geometric isomers of the starting materials is studied and further derivatives of 1-azafluoranthenes, more structurally relevant to the natural products, are prepared including two derivatives of natural triclisine.

Keywords: *C−H activation, annulation, azafluoranthenes, catalysis, natural products*