ABSTRACT

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Title of thesis: Synthesis of mouse CAR receptor analogs

This diploma thesis is focused on the synthesis of potential mouse CAR receptor agonists. Prepared compounds resulted from the structural changes of the template molecule TCPOBOP, when one of the two pyridine rings was removed from the structure and the phenyl moiety was substituted by both electron donor and acceptor functional groups. The syntheses were carried out on the basis of nucleophilic aromatic substitution starting from 2,3,5-trichloropyridine and appropriately substituted phenol. A series of twenty derivatives were prepared and their potential agonism/antagonism against the mouse CAR receptor was determined. Five of the tested substances showed a weak activation effect, furthermore, potential inhibitory activity was observed for the other three substances. These prepared compounds were tested on the HepG2 cell line, and their possible effect on selected bacteria, mycobacteria and fungal strains was also investigated to verify potential toxicity. Activity was observed in only one mycobacterial strain, *Mycobacterium kansasii.*

Keywords: CAR receptor, pyridine, phenol, nucleophilic aromatic substitution