**Área: ORG**

# Aminocatalytic Enantioselective Synthesis of Rotenoids

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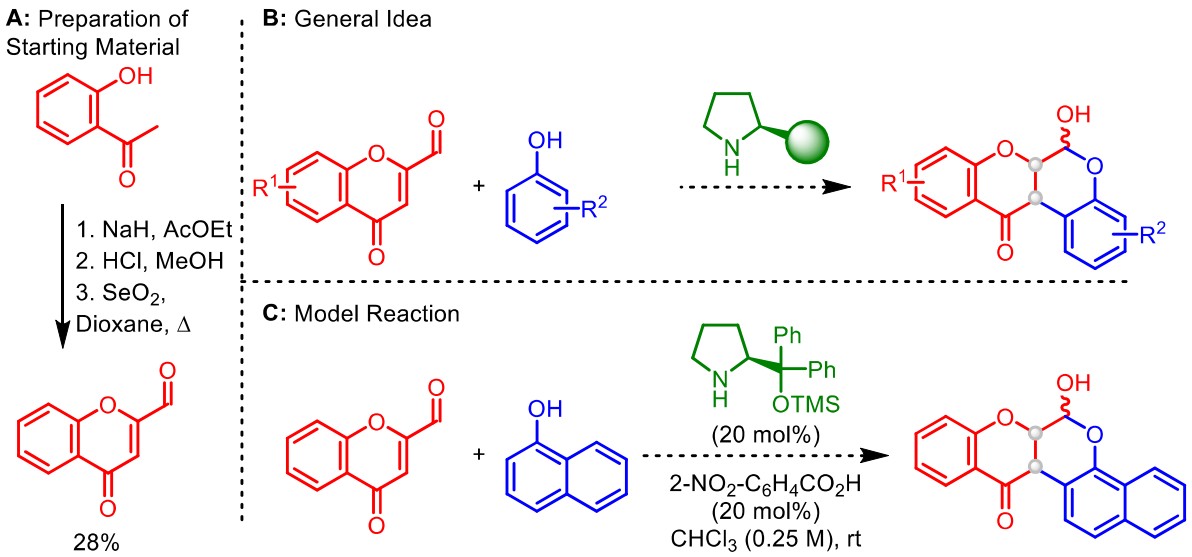
## Highlights

Organic Catalytic Route to Enantioenriched Rotenoids. Efficient one-pot synthesis using in *situ* iminium activation. Modular strategy for antitumor compounds

## Resumo/Abstract

This project aims to develop an enantioselective and modular synthesis of rotenoids, secondary metabolites of plant origin[1] with potential antitumor activity[2]. The synthetic strategy employs iminium catalysis, species generated *in situ* from the condensation of α,β-unsaturated aldehydes derived from chromones with chiral secondary amines. Electron-rich phenols and naphthols are being used as nucleophiles in Friedel-Crafts reactions, followed by intramolecular acetalization. The one-pot reaction sequence allowed for the construction of the tetracyclic dihydrochromeno[3,4-b]chromenone system characteristic of rotenoids.[3,4,5]




Optimization of the stereoselective step is being carried out with diarylprolinol silyl ether aminocatalysts. Additionally, hemiacetal reduction, oxidation to the lactone, and introduction of different nucleophiles via oxocarbenium ions are being explored. The ultimate goal is to generate a library of rotenoids to investigate their antitumor activity and neurotoxicity in future collaborations, aiming at the development of compounds with therapeutic potential.

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