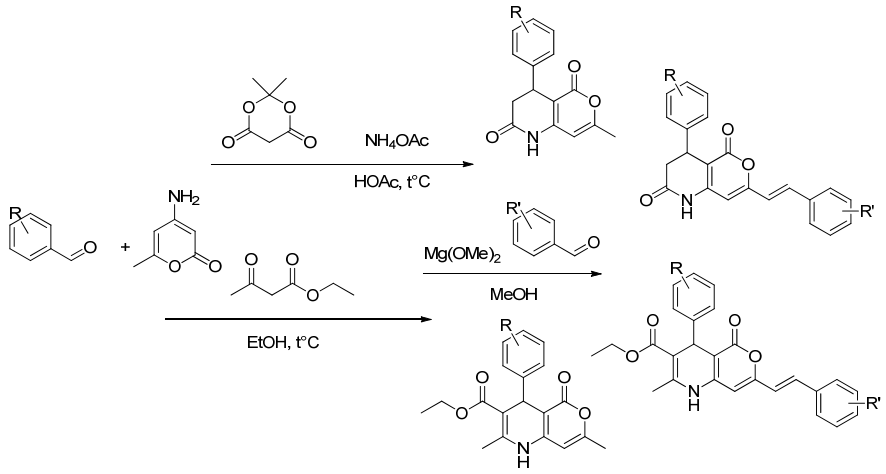
SYNTHESIS OF CURCUMIN HETEROCYCLIC DERIVATIVES

Rufus Smits

Latvian Institute of Organic Synthesis, Aizkraukles 21, LV-1006, Latvia
rusmits@gmail.com

In the last decades curcumin has emerged as an important scientific topic due to its ability to act directly on more than 100 molecular targets (e.g., NF-κB, Nrf2, STAT-3, PPAR-γ) possessing a wide range of pharmacological activities, such as antibacterial, antifungal, antiviral, anti-HIV-1 integrase, anti-Alzheimer's, anti-Parkinson's, anti-arthritic, antioxidant, anti-inflammatory, and anticancer [1]. However, its poor solubility in water at acidic and physiological pH, fast metabolism, low bioavailability, the lack of specificity and the low potency of most of its actions call for analogs to be synthesized with increased potency and higher specificity. The 1,4-dihydropyridine and 3,4-dihydropyridone were chosen as scaffolds to construct the curcumin heterocyclic derivatives



These heterocycles by themselves exhibit bioactivities and coupled with curcumin could provide even more diverse or enhanced pharmacological properties.

Acknowledgements: This study was supported by ERDF project No.1.1.1.2/VIAA/1/16/241 " Synthesis of Curcumin Heterocyclic Derivatives"

[1] Qingyong Li, Jian Chen, Shuyue Luo, Jialin Xu, Qiaoxian Huang, Tianyu Liu, European Journal of Medicinal Chemistry 93 (2015) 461-469.