Abstract

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Title of Thesis	Synthesis of Isoprenoid Naringenin Derivatives

Naringenin as a member of flavanone subclass of flavonoids and its derivatives have been subjects of intensive study for their antibacterial, antifungal, and antineoplastic properties. Recent development in current methods of synthetic chemistry allows us to satisfy the increasing demand for these molecules by providing an alternative source of these naturally occurring substances in the means of chemical synthesis.

The aim of this work was synthesis and characterization of naringenin derivatives with increased lipophilic profile which will serve in future research as potential cytotoxic agents.

Two major approaches have been developed in the process of obtaining lipophilic derivatives of naringenin (Fig. 2) where the lipophilic moiety consists of terpene or terpenoid part, which is believed to increase the uptake of the desired product by cells. In the first approach, we focused on the modification of the B phenolic ring by esterification of the hydroxyl group on the 4′ carbon or on the modification of both A and B phenolic rings. The second approach was aimed on synthesis of prenylflavonoids by creating a carbon-carbon bond on the A phenolic ring.

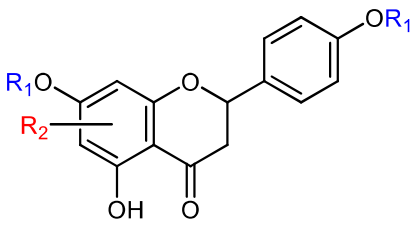

Fig. 2. Modifications to the naringenin molecule – esterification (blue) or creation of carbon-carbon bond (red).