

## Abstract:

One way to stop tumor growth in organism is to induce differentiation, apoptosis or necrosis of tumor cells. A class of chemicals known to induce apoptosis and inhibit proliferation in leukemia cells are sesquiterpene lactones. One of these lactones is cnicin, a bitter tonic used in liqueurs, found in the plant *Cnicus benedictus*. The mechanism of this inhibition, is not fully understood but certain signaling pathways are suspected, mainly the recently discovered Hippo signaling pathway which controls the organ size and apoptosis in mammalian cells. The core kinase of this signaling pathway is MST1/2 protein and its activation by sesquiterpene lactone cnicin resulting in cleavage of its active N-terminal domain is observed in this work. Also, the effect of cnicin on down-regulating main oncoprotein deregulated in leukemia cells C-MYC is studied. In addition the results of q-PCR also show significant down-regulation of anti-apoptotic *BCL2* and *MCL1* genes and *cMYC* oncogene.

(In Czech)