

EASTERN MICHIGAN UNIVERSITY

Chemistry Department

M. S. Thesis Seminar

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Tuesday, June 30th, 4:00 pm, Sci Complex Rm 545

Synthesis and Kinetic Investigation of Differently Substituted Chalcones

ABSTRACT

α,β -unsaturated carbonyl compounds, such as chalcones, show many biological activities that include cytotoxic anti-tumor activity, enzyme inhibition activity by reacting with sulfhydryl groups involved in different pathways that lead to cancer. However, apart from their useful biological activities, chalcones also show harmful biological effects on normal human cells for which they are highly neglected in drug development. The biological activity of α,β -unsaturated carbonyl compounds is mainly based on their α,β -unsaturated carbonyl moiety, also called Michael system. Investigation of the reactivity of the Michael system with various aromatic ring substituents and their subsequent biological testing will allow for structure-activity relationship studies. This research study explores the synthesis and screening of reactivity of various structural analogues of chalcones against thiol compound. It was hypothesized that the structural alterations of the lead molecule would affect the potency of its reactivity. The synthesis and structure-activity relationships of novel chalcones are discussed.