

# Synthesis of and Structure-Property Relationships in Novel Triketones, Indanone and Tetralone Derivatives

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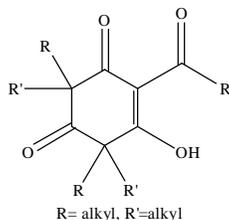
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## ABSTRACT:

The preparation of “green” pesticides and antibacterial agents is a field of widening interest to the agrochemical and pharmaceutical communities, respectively. Reduction of ecological impact of manufactured chemical herbicides and fungicides is an important facet in global environmental sustainment. Certain naturally occurring phloroglucinols, triketones whose general structure is shown below, have demonstrated herbicidal and medicinal value.



## Biologically Active Triketones

Since halogens are known to enhance bioactivity in many classes of molecules, it is desirable to prepare new fluorinated and chlorinated examples of these molecules, gain a better understanding of their structure-property relationships and determine their bioactivity relative to known cases.

This work investigates the synthesis of new diketones and triketones using established Claisen and aldol methodologies as well as dianion generation techniques. Both acyclic and cyclic molecules that selectively incorporate halogens at key points in the molecular architecture and unhalogenated analogs have been prepared. A quantitative structure-property study has been undertaken on the new species and a comprehensive bioactivity study is planned.

**KEYWORDS:** 1,3-diketone, 2-acetyl-1,3-diketone, 1,3,5-triketone, Selectfluor®, Claisen condensation, aldol condensation

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