Synthesizing derivatives from cyclopentanone analogue curcumin and their toxic, antioxidant and anti-inflammatory activities

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Abstrak

ABSTRACT

Three types of cyclopentanone derivatives have been synthesized from aromatic aldehyde and ketone derivatives under

a base condition through aldol condensation. These cyclopentanone products were 2,5-dibenzylidenecyclopentanone (a), 2,5-bis-(4-hydroxy-benzylidene)-cyclopentanone (b),

and 2,5-bis-(4-hydroxy-benzylidene)-cyclopentanone (c)

which has a yield of 63-99%. The chemical structure of these compounds were determined using UV, IR and NMR

spectroscopy. In order to clarify the role of hydroxyl and amine moieties, toxic, antioxidant and antiinflammatory

activities were carried out. The toxic test indicated that the

compounds showed strong toxicity. In addition, the presence

of hydroxyl and amine groups on both rings of curcumin in

creased the antioxidant and anti-inflammatory activities.