

HETEROCYCLIC SYNTHESSES WITH 1,3-DICARBOALKOXYALLENES:
 SYNTHESIS AND REACTION OF HETEROCYCLIC COMPOUNDS HAVING
 GLUTACONIC ANHYDRIDE STRUCTURE IN THE MOLECULES

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We have recently reported the strong base induced Diels-Alder type reaction of homophthalic anhydrides (1) via the o-quinodimethane-like intermediates and its application to an efficient synthesis of polycyclic peri-hydroxyaromatic compounds such as anthracyclinones. The reaction was found to be applicable to other related heterocyclic systems having glutaconic anhydride structure (A) in the molecules. Therefore, a versatile and general preparation of various alkyl glutaconates (B) is essential. On this requirement, we report here I) Two novel and convenient syntheses of various alkyl glutaconates (B) using a) cycloaddition of 1,3-dicarboalkoxyallenes (2) and b) Michael addition of 2, II) A mild and efficient conversion of B structure into A structure by utilizing trimethylsilyl-ethoxyacetylene, and III) Strong base induced cycloaddition of the heterocycles having A structure leading to peri-hydroxyheteroaromatic compounds.

