

Public Abstract

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Title: Diels-Alder Reactions of a Cyclopentadienone Derivative

An ester derivative of cyclopentadienone, a very reactive species, was generated from methyl-2-bromo-3-oxocyclopent-1-enecarboxylate (96) which dimerized instantaneously and decarbonylated to generate an indanone (97). Diels-Alder reactions were performed by trapping this fleeting cyclopentadienone derivative with electron rich dienes to generate [4+2] Diels-Alder adducts. The cycloadducts were diastereo- and regioselective. The yields of these reactions were moderate to high. A wide range of dienes were used to show the versatility and scope of these reactions. Using the developed methodology, an attempt was taken to synthesize steroidal drug desogestrel (218).