

Synthesis of Pentalene Systems Employing a Sequence of Pauson-Khand Reaction, Michael Reaction, and Desilylation

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The utility of cyclopentadiene (**4**) in intermolecular Pauson-Khand reactions was investigated. Subsequently, a 1,4-addition of lithium organocuprates was carried out followed by desilylation. This synthetic concept allows the preparation of β -functionalized bicyclo[3.3.0]octane derivatives **1a – c** in only three steps in total yields up to 53%.

Key words: Bicyclo[3.3.0]octanes, Cyclopentadiene, Cuprate Addition, Desilylation, Trimethylsilylacetylene