G. HIRATA, G. ONODERA, M. KIMURA\* (NAGASAKI UNIVERSITY, JAPAN) Synthesis of Lactones and Lactams from Vinylcyclopropane by Palladium-Catalyzed Nucleophilic Allylation

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## Palladium-Catalyzed Nucleophilic Allylation of Aldehydes or Aldimines

**Significance:** Ring-expansion reactions of vinyl-cyclopropanes are powerful tools for organic synthesis. The authors describe the palladium-catalyzed nucleophilic allylation of aldehyde and aldimines with vinylcyclopropane in the presence of dimethylzinc.

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**Comment:** The allylation of aldehydes with vinyl-cyclopropane and diethylzinc proceeded to provide homoallyl alcohols with *anti* stereoselectivity. Aldimines prepared from aldehyde and primary amines in situ underwent a similar allylation to give homoallylamines with syn stereoselectivity. The products can be converted by reaction with a tetranuclear zinc cluster into  $\gamma$ -vinyl- $\delta$ -valerolactons and  $\gamma$ -vinyl- $\delta$ -valerolactams. The transformation is useful for the efficient synthesis of bioactive molecules.

Category

Metal-Catalyzed Asymmetric Synthesis and Stereoselective Reactions

## **Key words**

allylation vinylcyclopropanes palladium

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