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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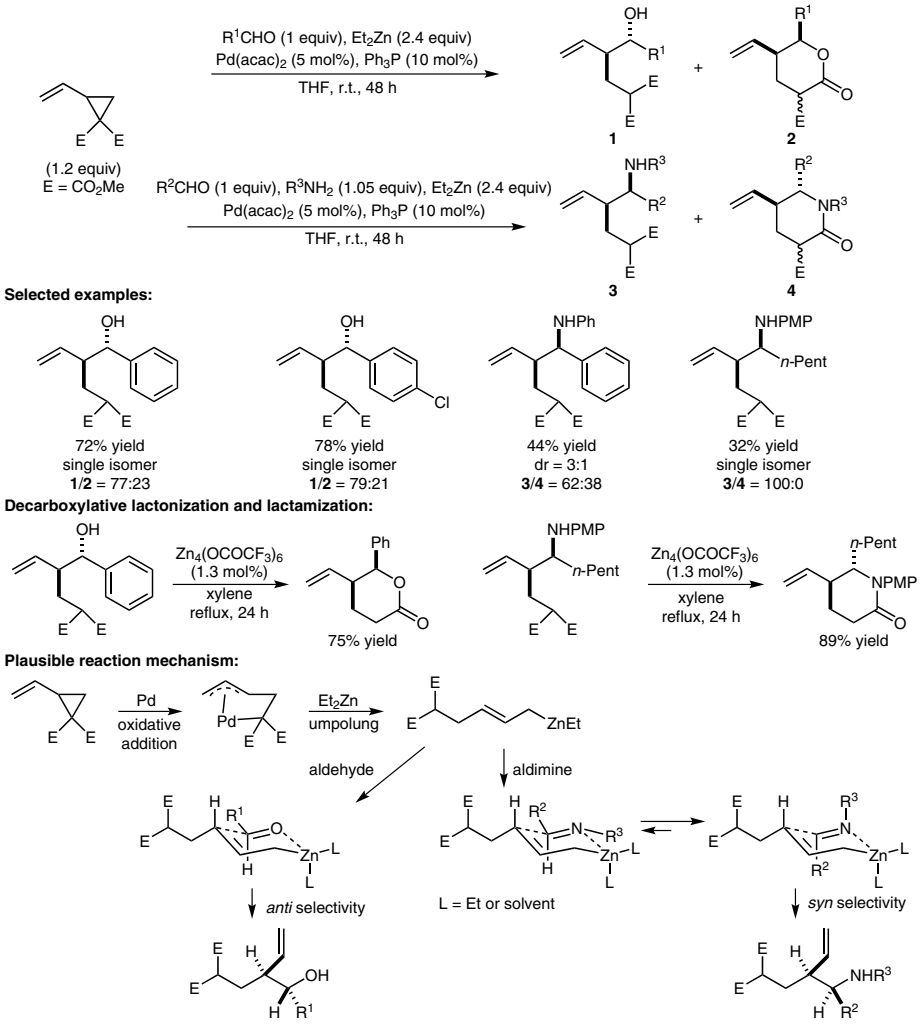
# Palladium-Catalyzed Nucleophilic Allylation of Aldehydes or Aldimines




**Significance:** Ring-expansion reactions of vinylcyclopropanes 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.

**Comment:** The allylation of aldehydes with vinylcyclopropane 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 γ-vinyl-δ-valerolactons and γ-vinyl-δ-valerolactams. The transformation is useful for the efficient synthesis of bioactive molecules.

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**Category**
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**Key words**
allylation
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