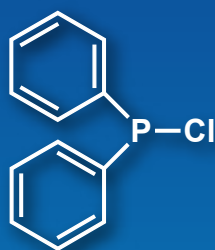
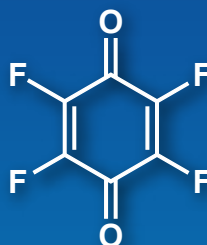


# Mukaiyama Redox Condensation Reagents



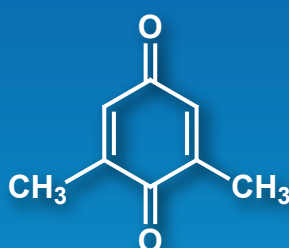
[C0597]



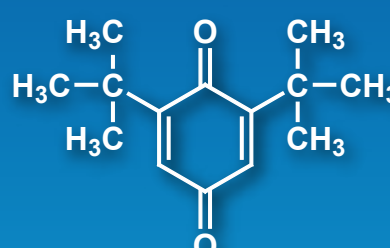
[T0790]



[B0887]



[D2234]

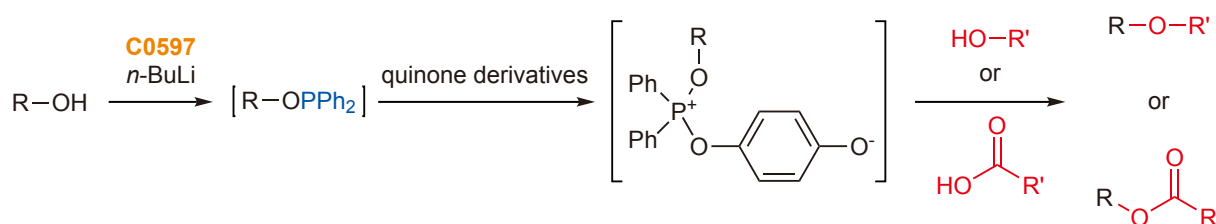


[D2256]

## Advantages

- Effective for the Synthesis of Unsymmetrical Ethers and Esters
- Affords Stereochemically-inverted Products via S<sub>N</sub>2-Type Reactions
- Applicable to Tertiary Alcohols

## Reaction Mechanism



T. Shintou, T. Mukaiyama, *J. Am. Chem. Soc.* **2004**, 126, 7359.

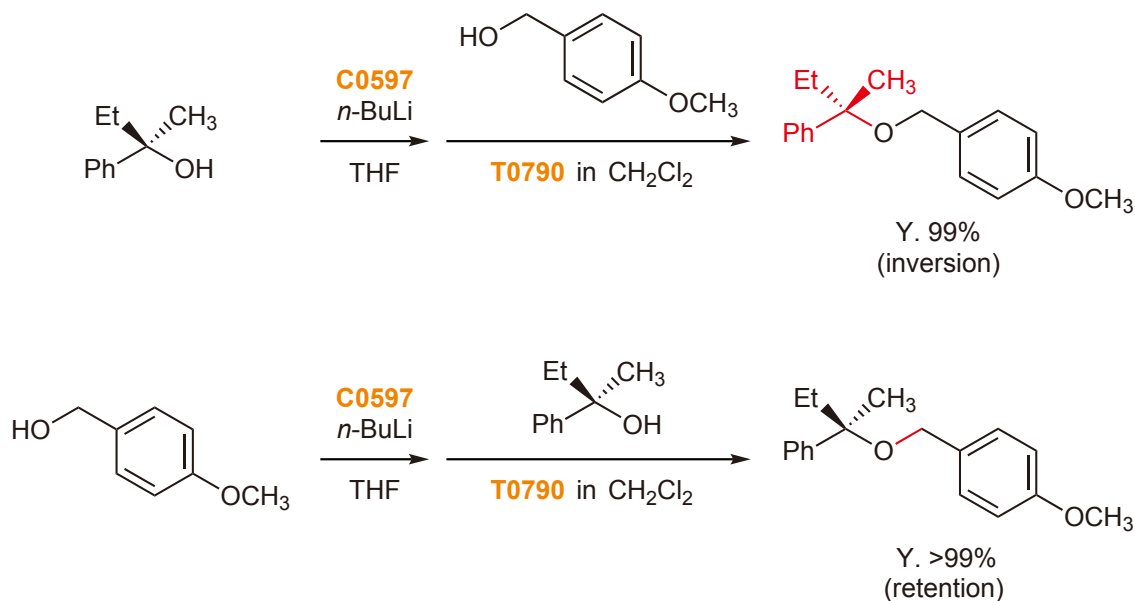
<b>C0597</b>	<b>Chlorodiphenylphosphine</b>	25g / 100g / 500g
<b>T0790</b>	<b>Tetrafluoro-1,4-benzoquinone</b>	1g / 5g
<b>B0887</b>	<b>1,4-Benzoquinone</b>	25g / 500g
<b>D2234</b>	<b>2,6-Dimethyl-1,4-benzoquinone</b>	1g / 5g / 25g
<b>D2256</b>	<b>2,6-Di-tert-butyl-1,4-benzoquinone</b>	5g / 25g



# Mukaiyama Redox Condensation Reagents

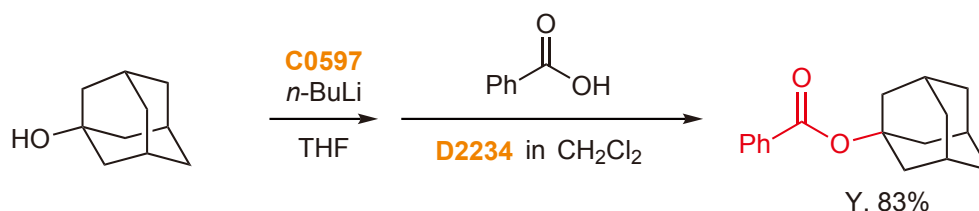
## Applications

### Synthesis of Ethers with Inversion of Configuration



T. Shintou, T. Mukaiyama, *Chem. Lett.* **2003**, 32, 984.  
T. Shintou, T. Mukaiyama, *J. Am. Chem. Soc.* **2004**, 126, 7359.

### Synthesis of Esters Using Tertiary Alcohols



T. Shintou, W. Kikuchi, T. Mukaiyama, *Bull. Chem. Soc. Jpn.* **2003**, 76, 1645.

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