六、周环反应
（三） 1,3-偶极环加成反应

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生命有机化学国家重点实验室

2018年12月17日

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构象对反应活性的影响
立体电子效应
三、氧化态的调整
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sigmatropic重排
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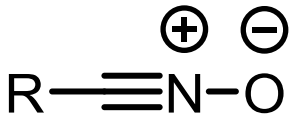
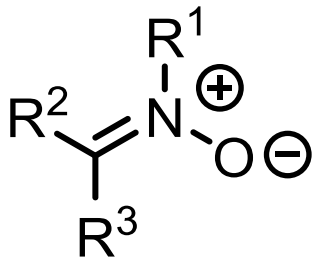
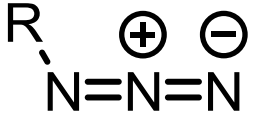
部分1,3-偶极化合物



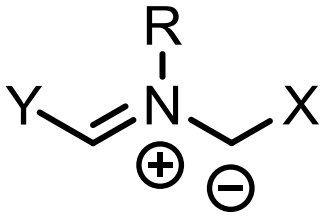
nitrile oxides



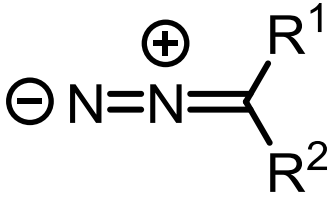
nitrones



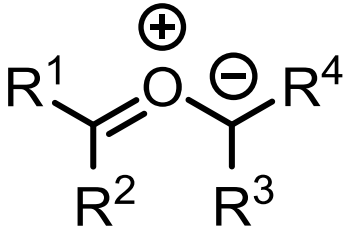
azides



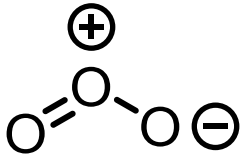
azomethine ylides



diazoalkanes



carbonyl ylides



ozone

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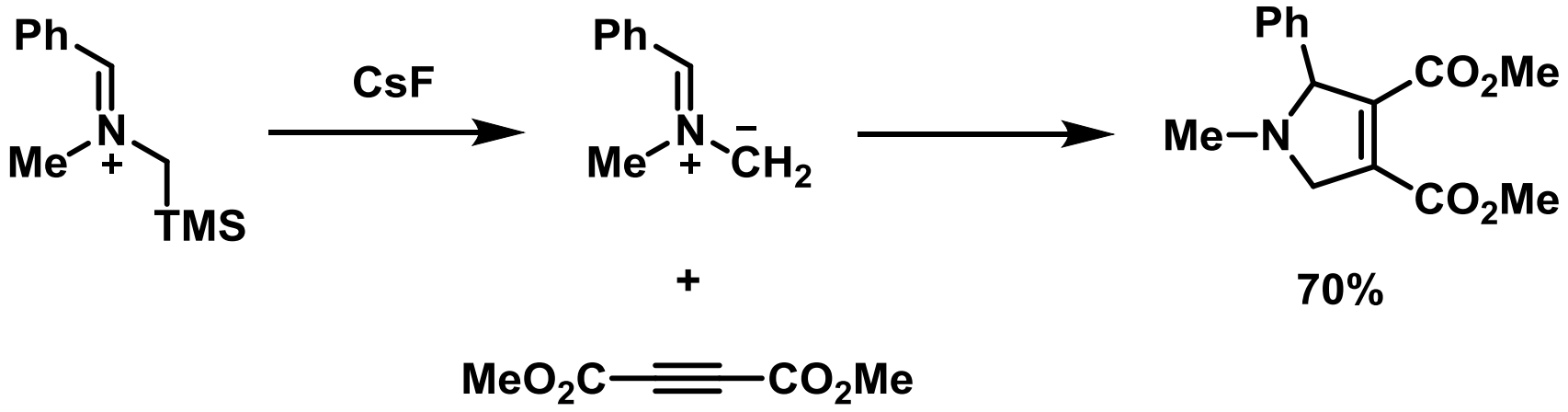
非稳定的Azomethine叶立德



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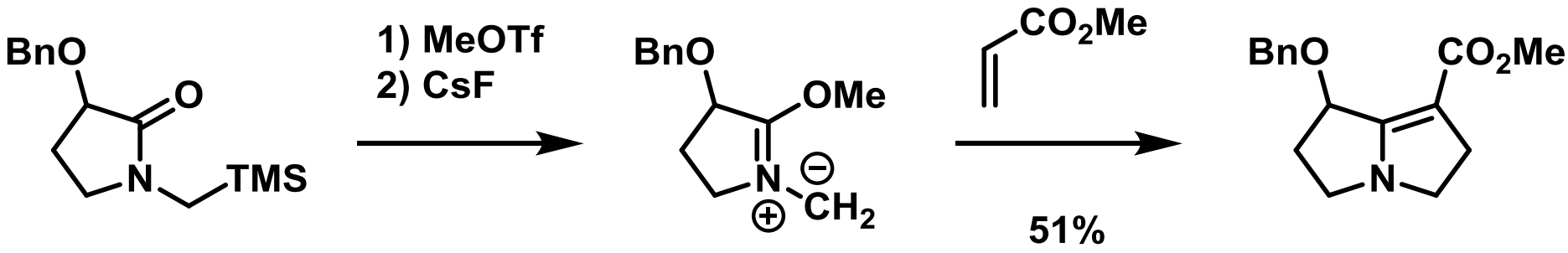

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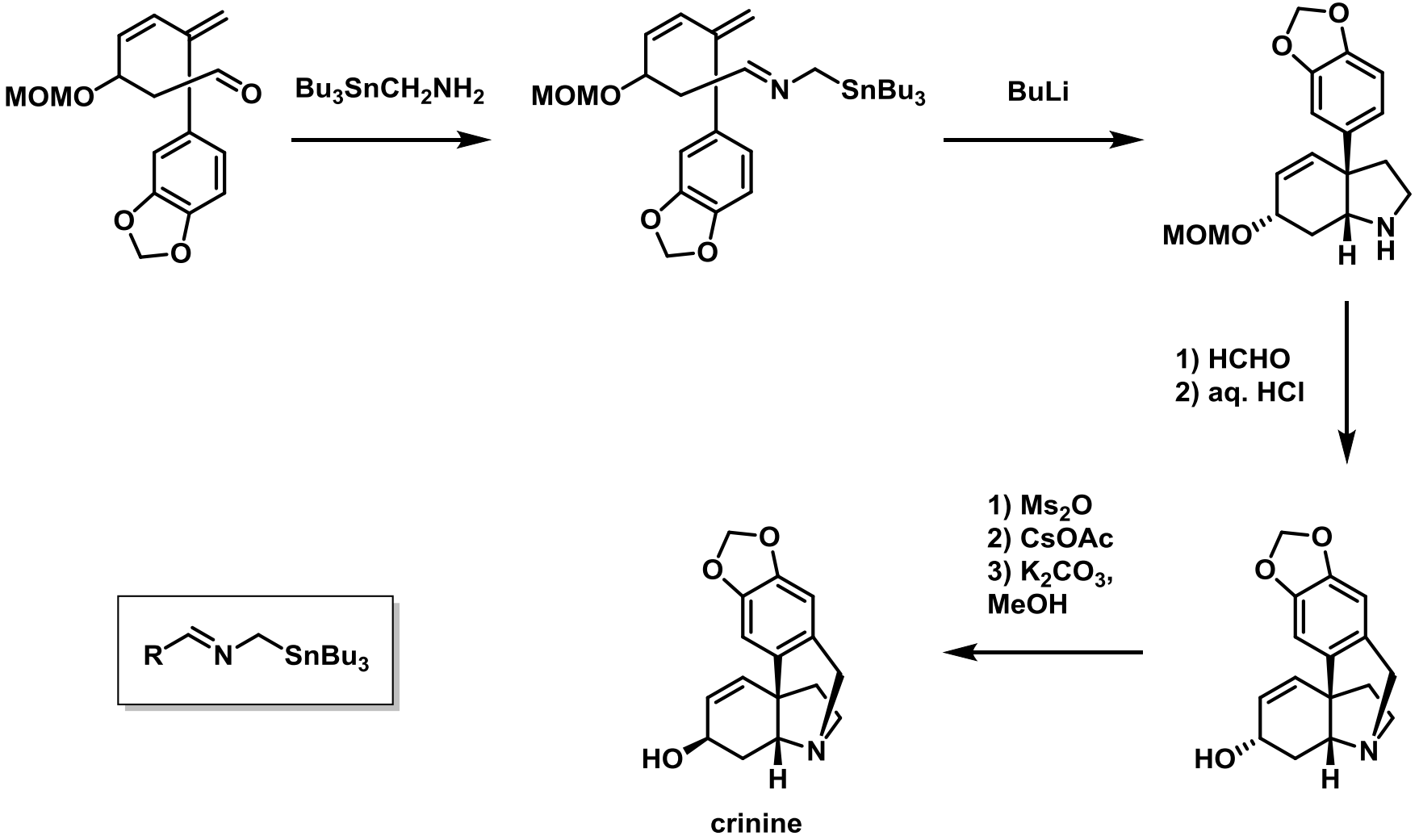
2-Azaallyl Anion



crinine

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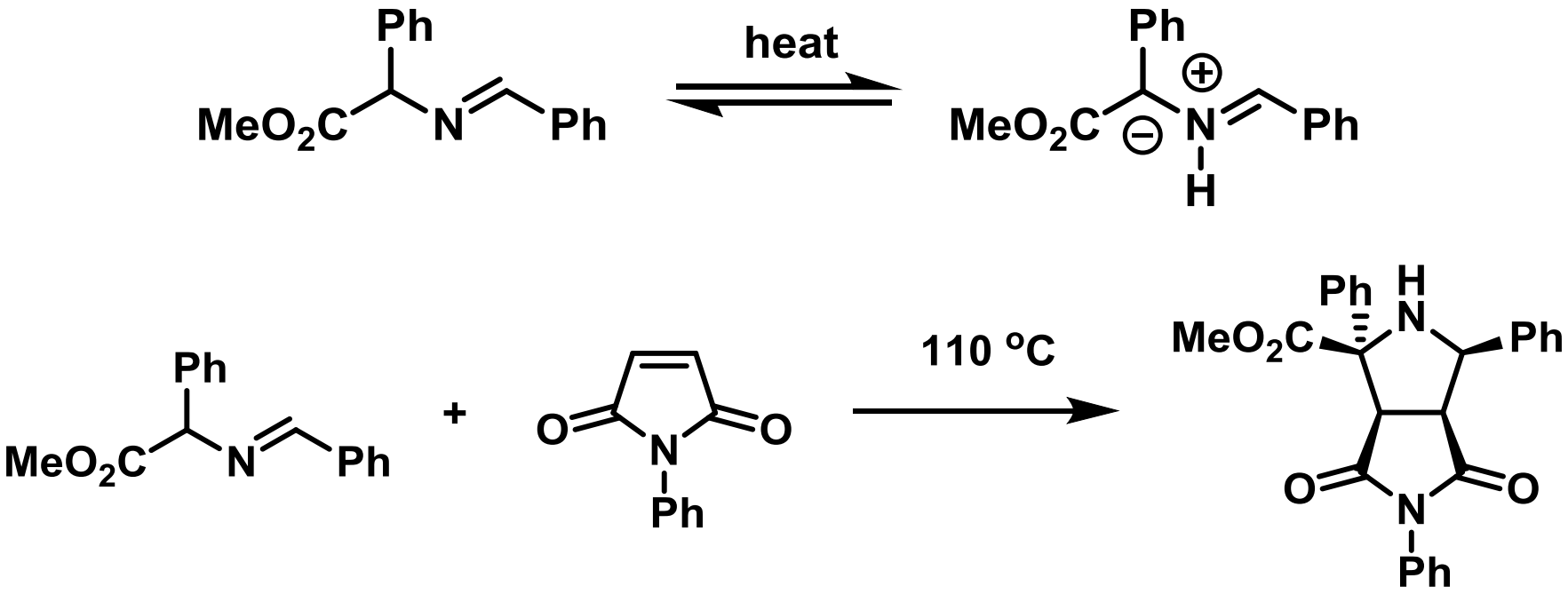
稳定的Azomethine叶立德



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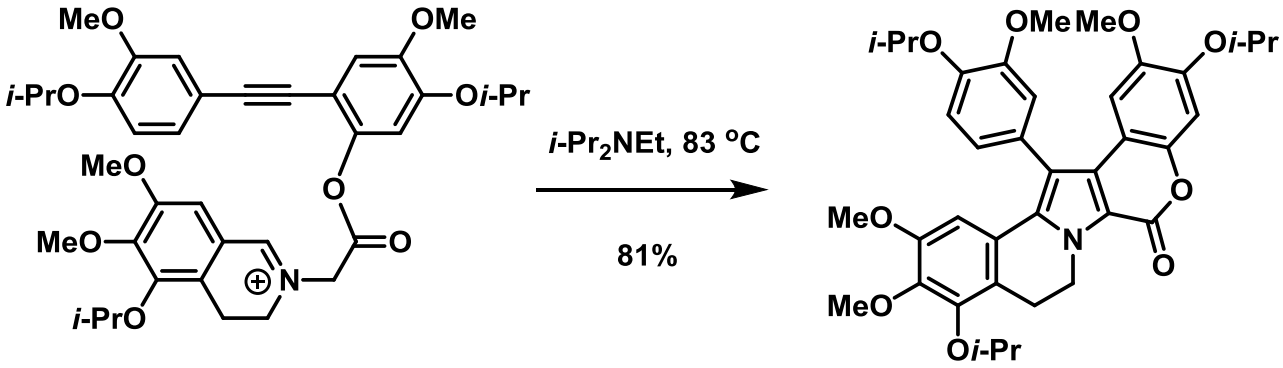
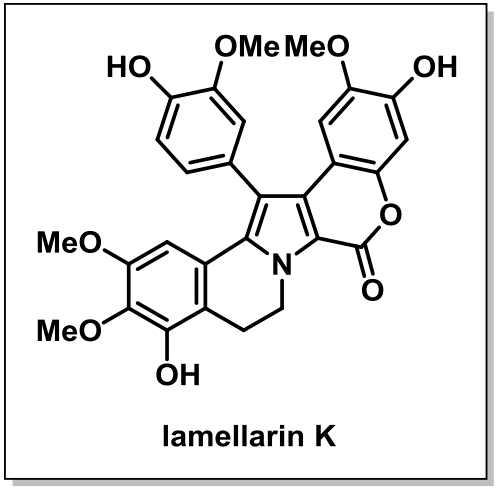
稳定的Azomethine叶立德





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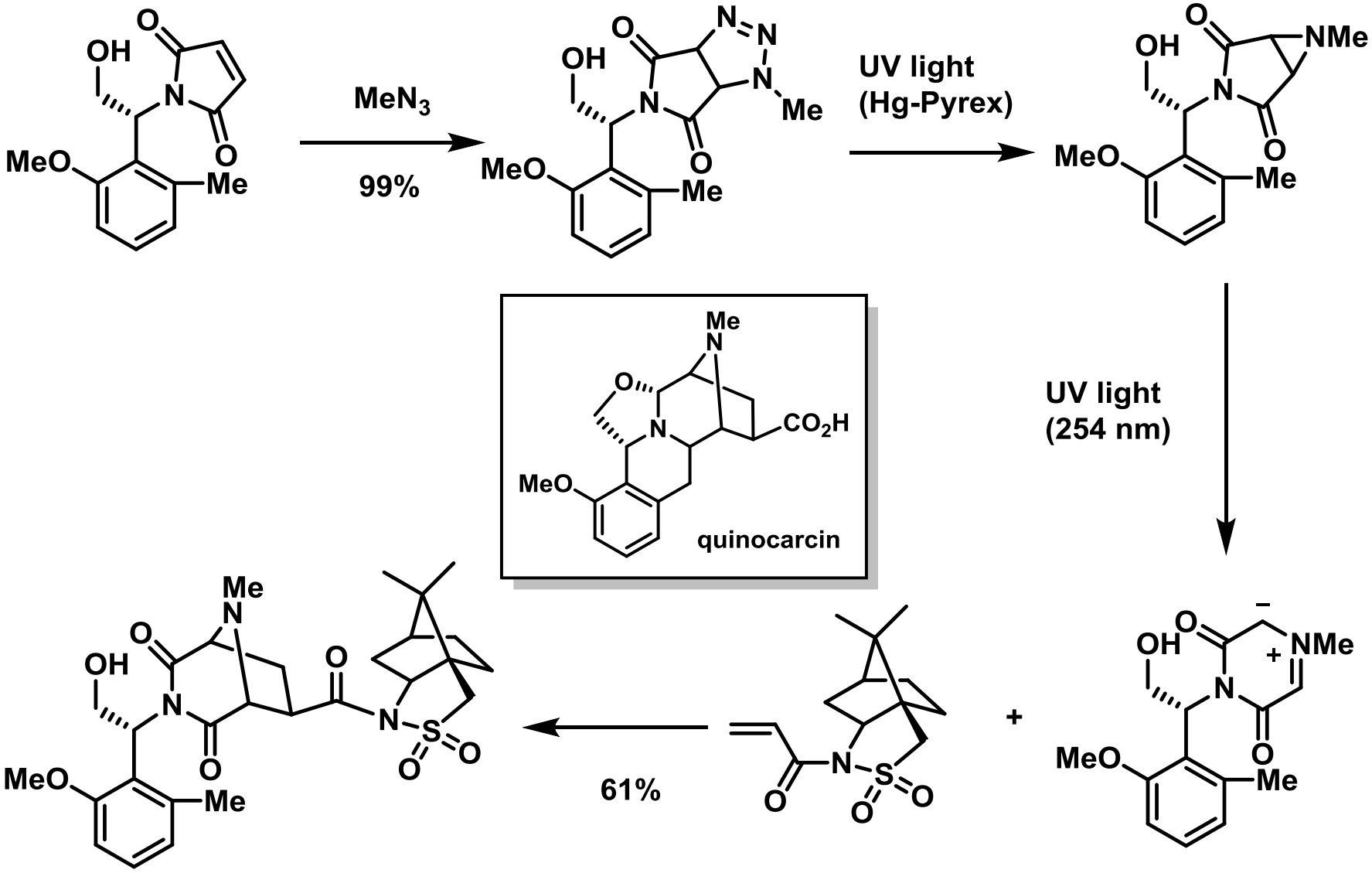
稳定的Azomethine叶立德



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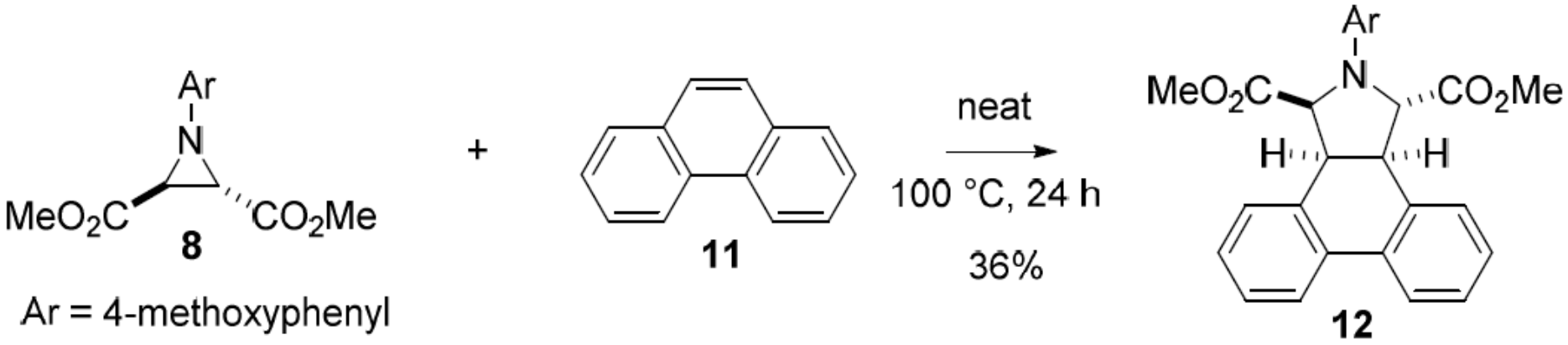
稳定的Azomethine叶立德



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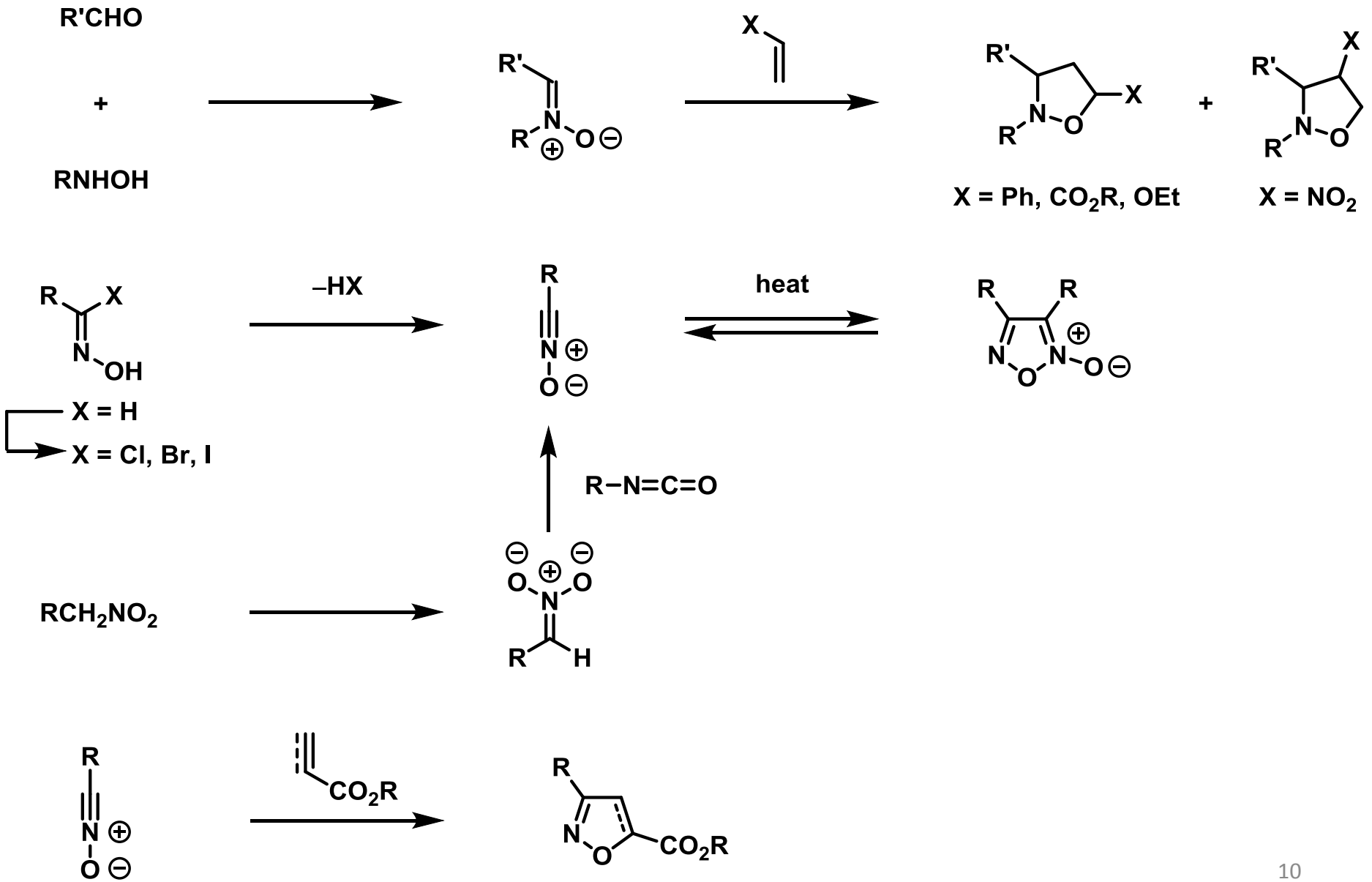
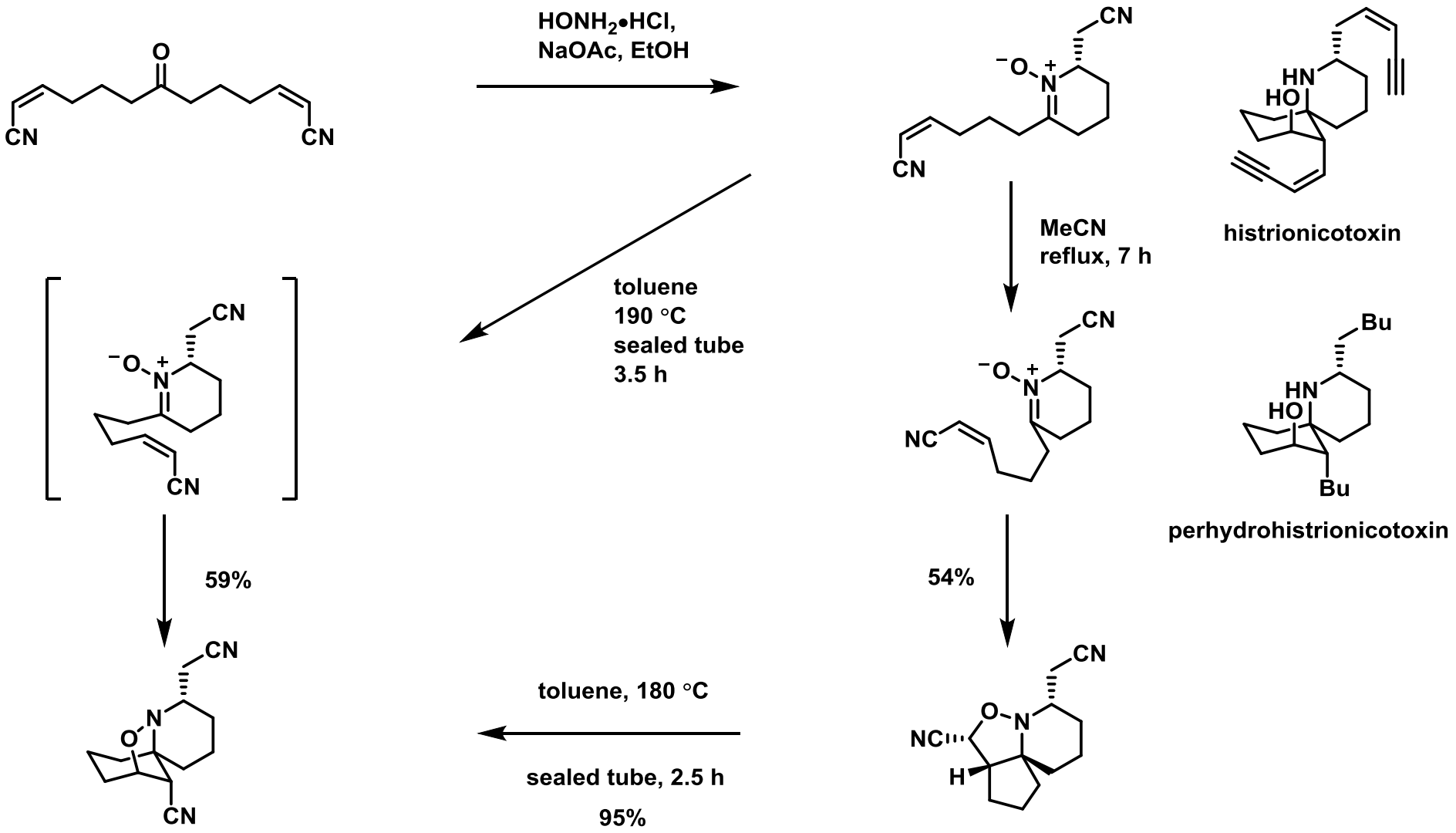
Nitrone/Nitrile Oxide



Nitrone



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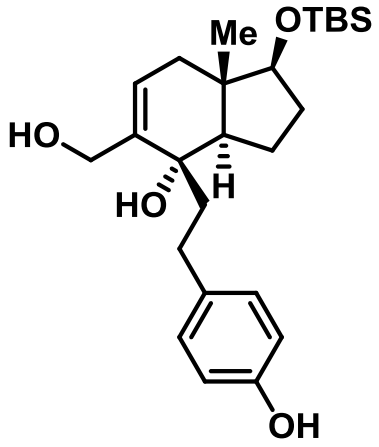
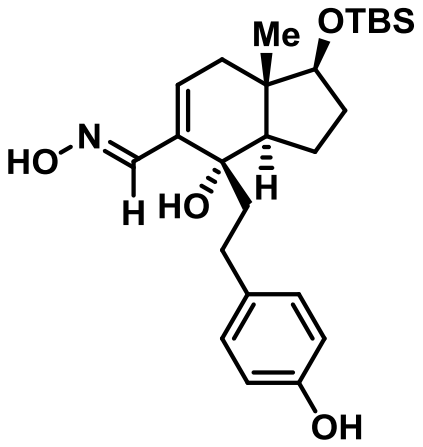
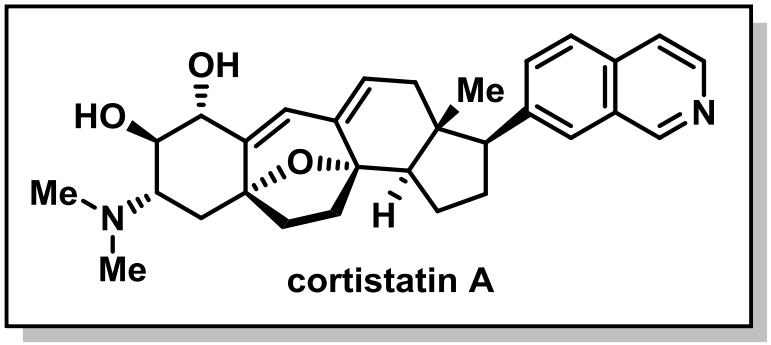
Nitrile Oxide



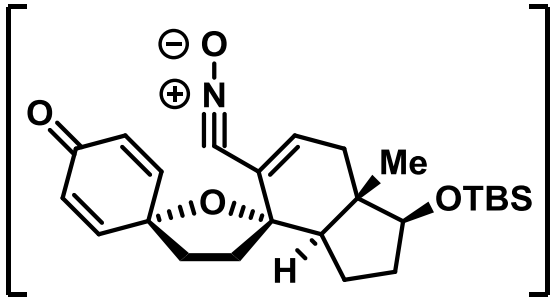
1) SO_3•pyr, Et_3N, DMSO, 57%

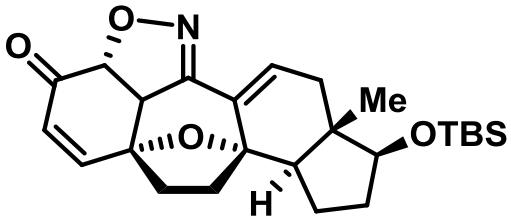
2) $HONH_2$•HCl, NaOAc, 60 °C, ca. 100%





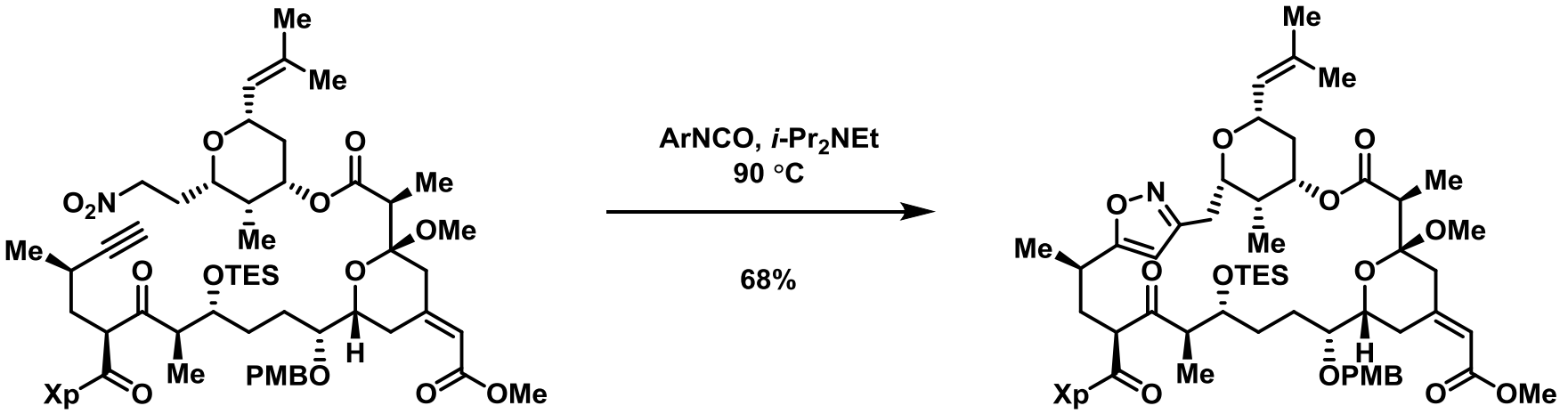
$PhI(OAc)_2$, TFA; then 50 °C, 80%

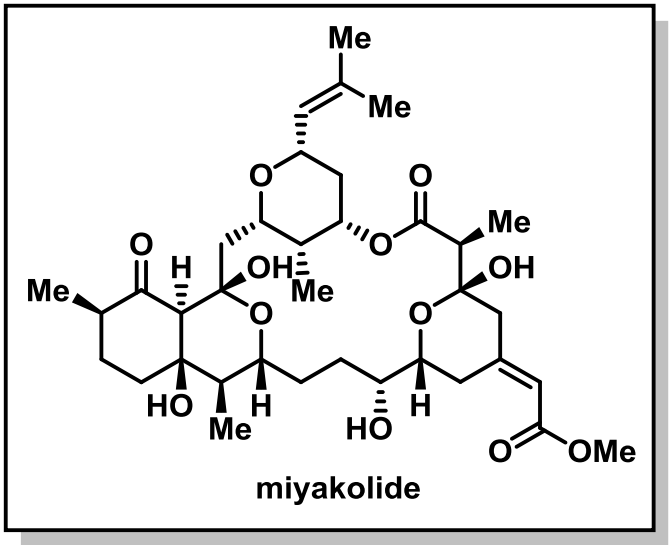




Sorensen, et al. *Org. Lett*. **2009**, *11*, 5394.

Nitrile Oxide





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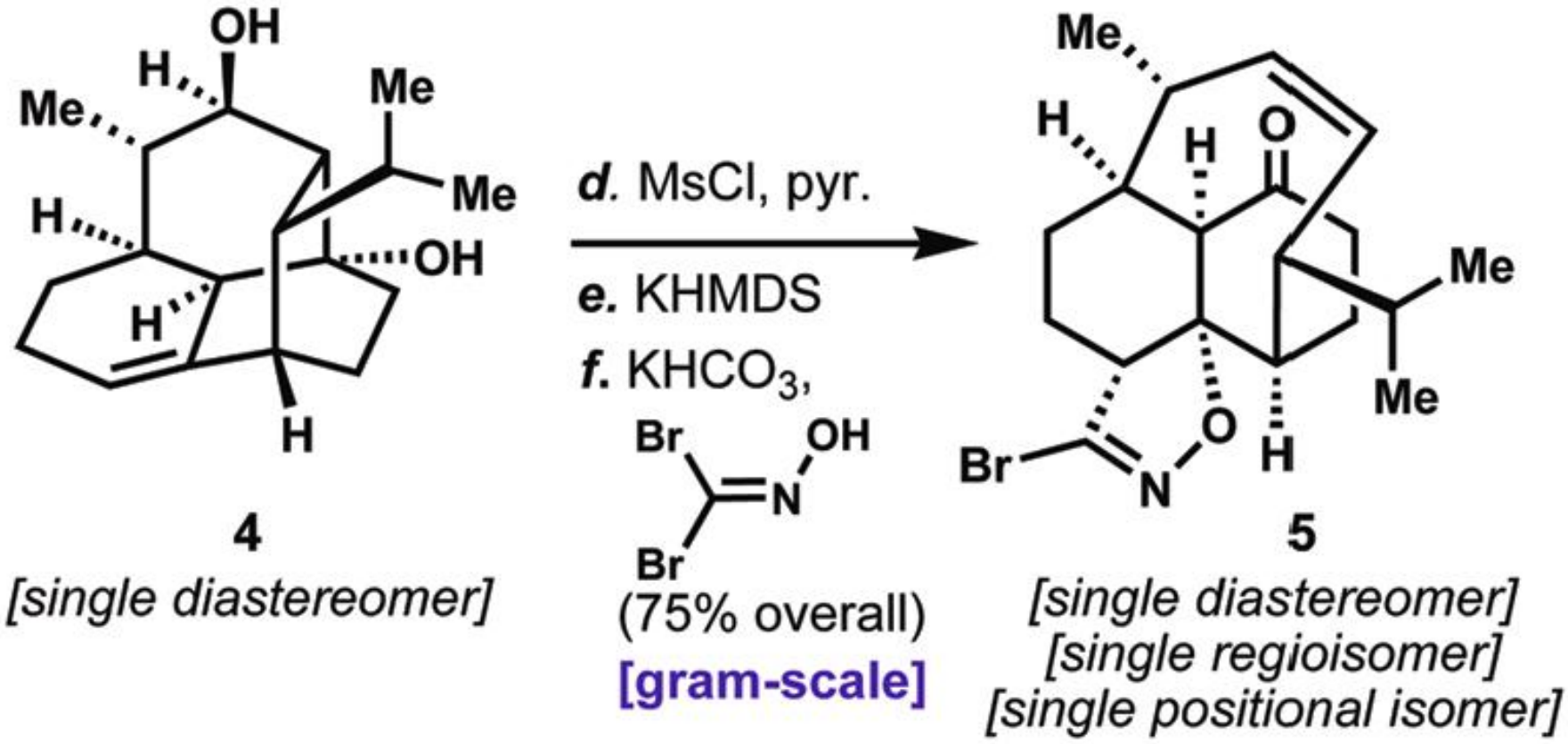
Nitrile Oxide



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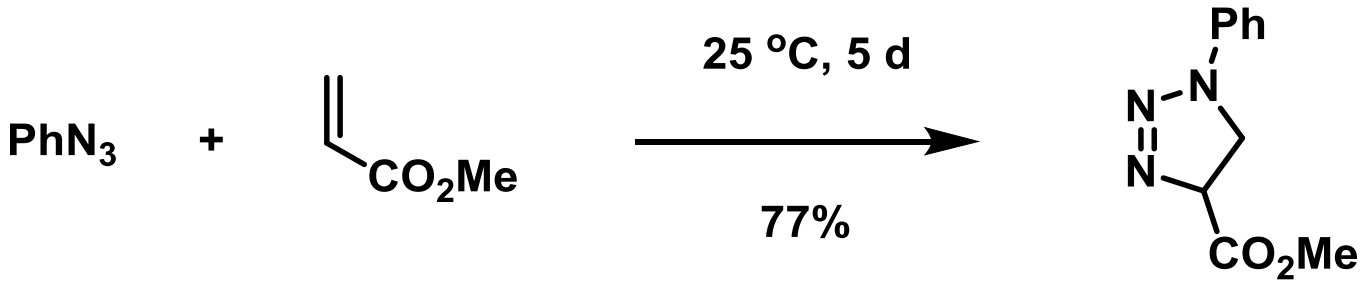
Azide



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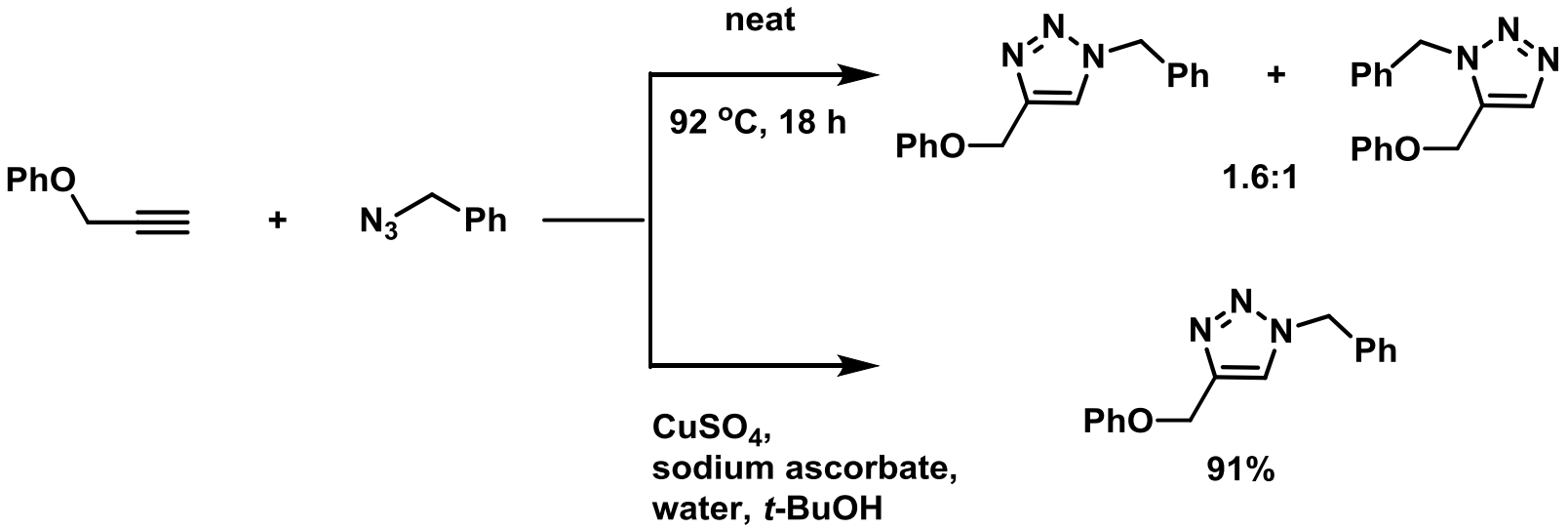

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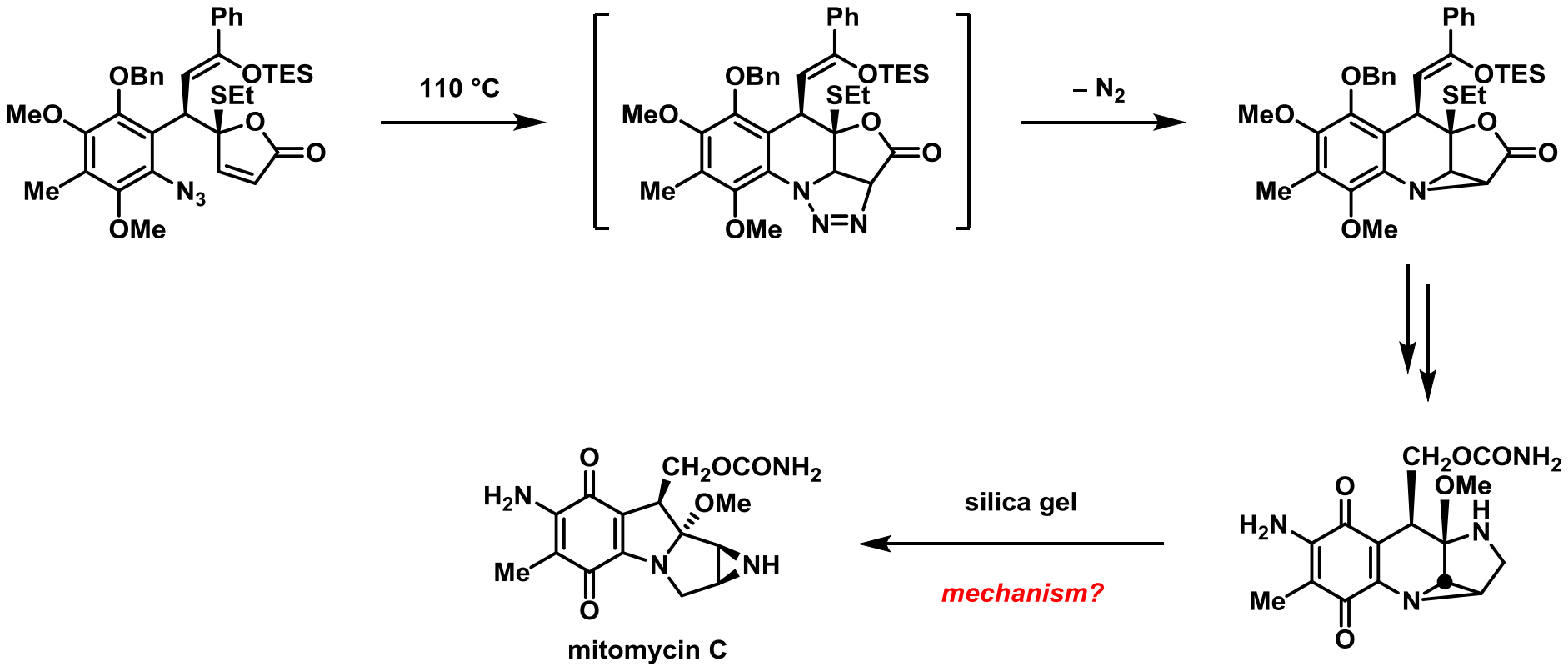
Azide



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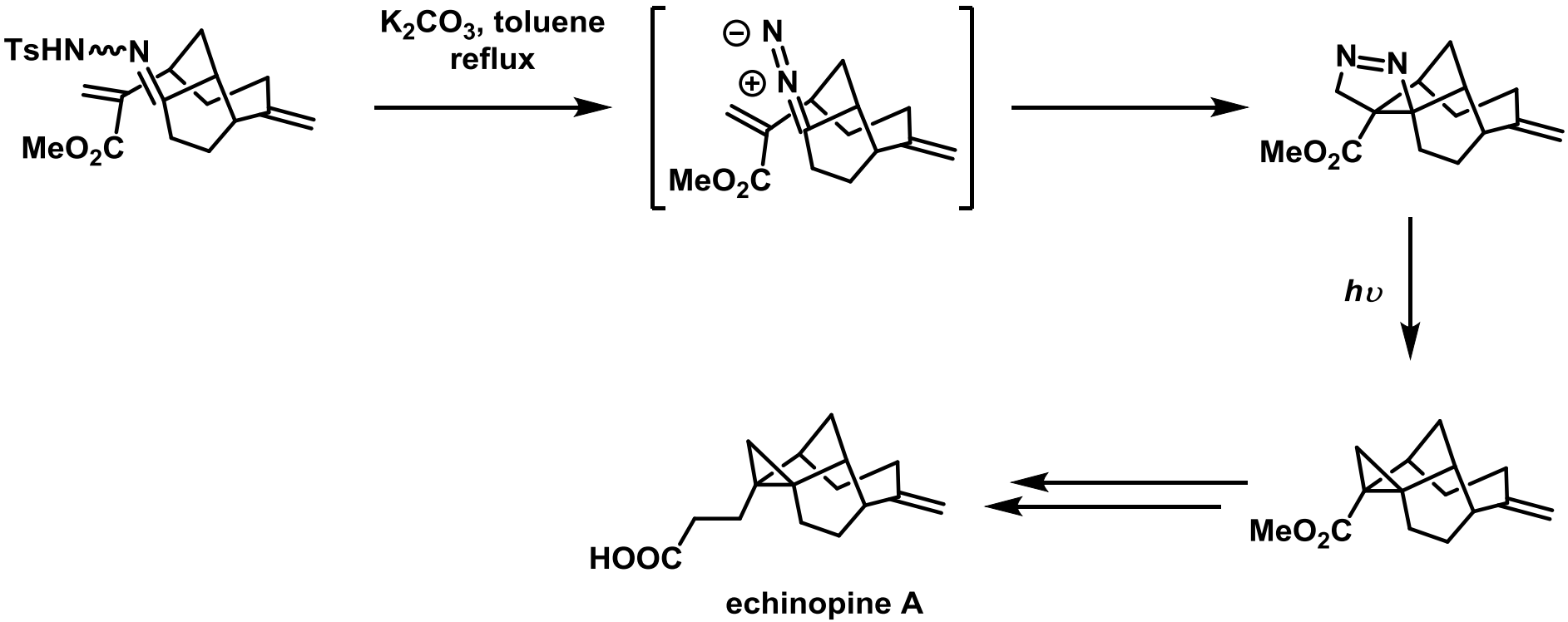
Diazoalkane



echinopine A

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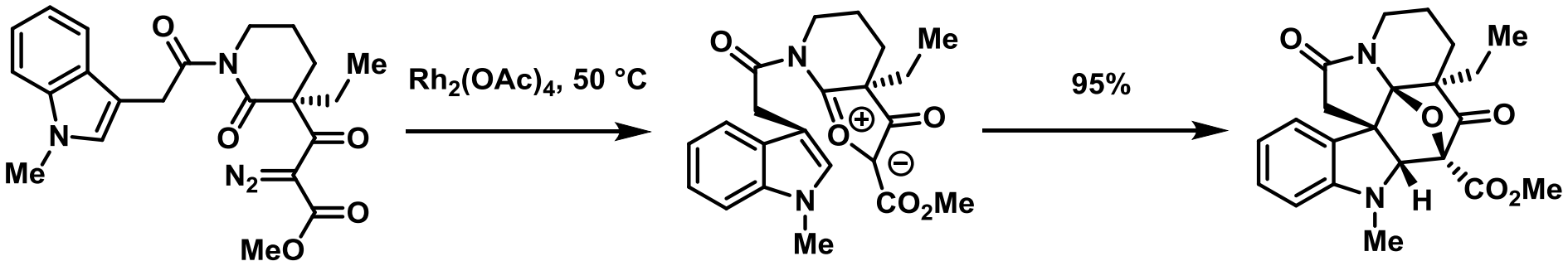
Carbonyl Ylide



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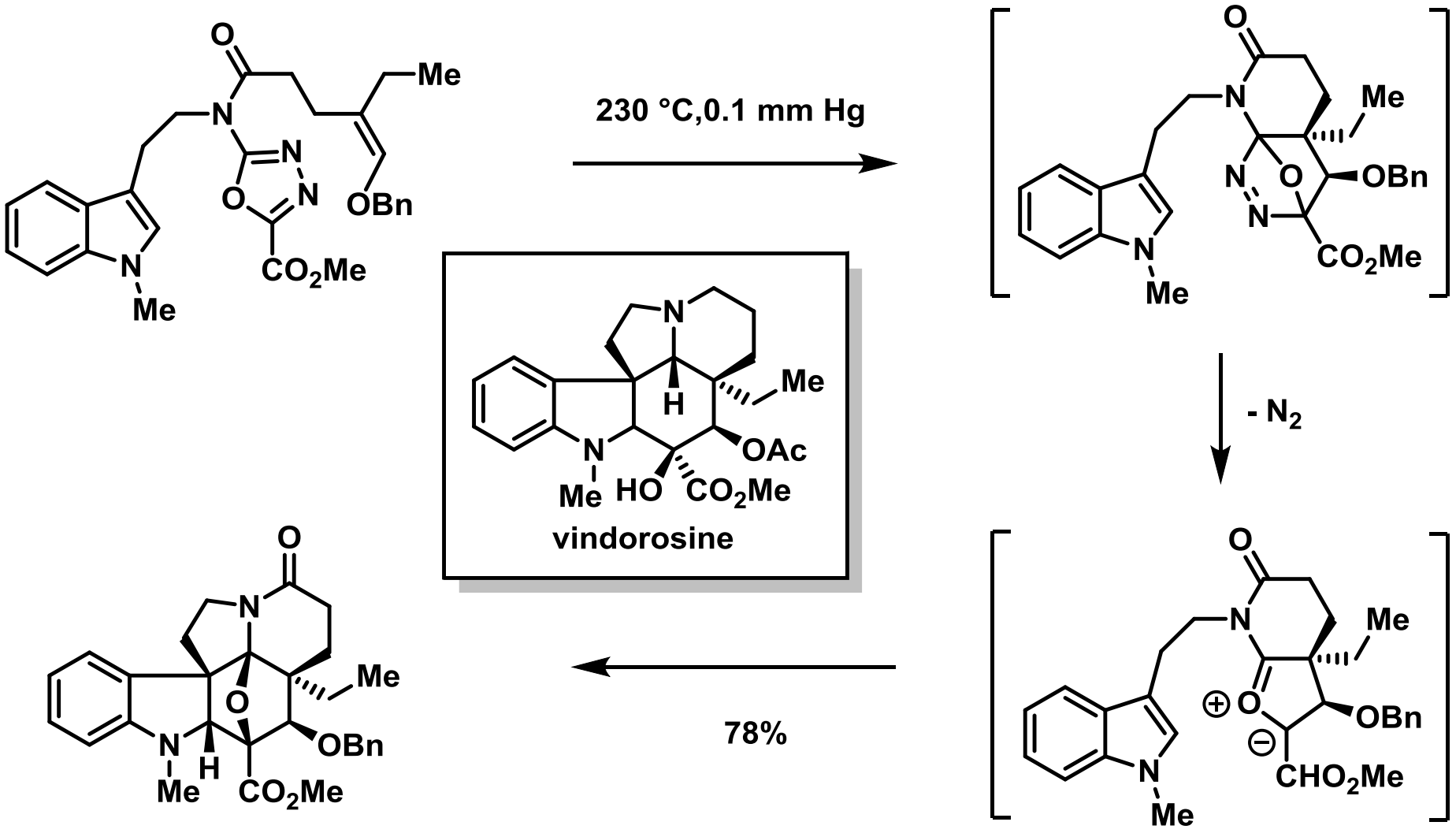
Carbonyl Ylide



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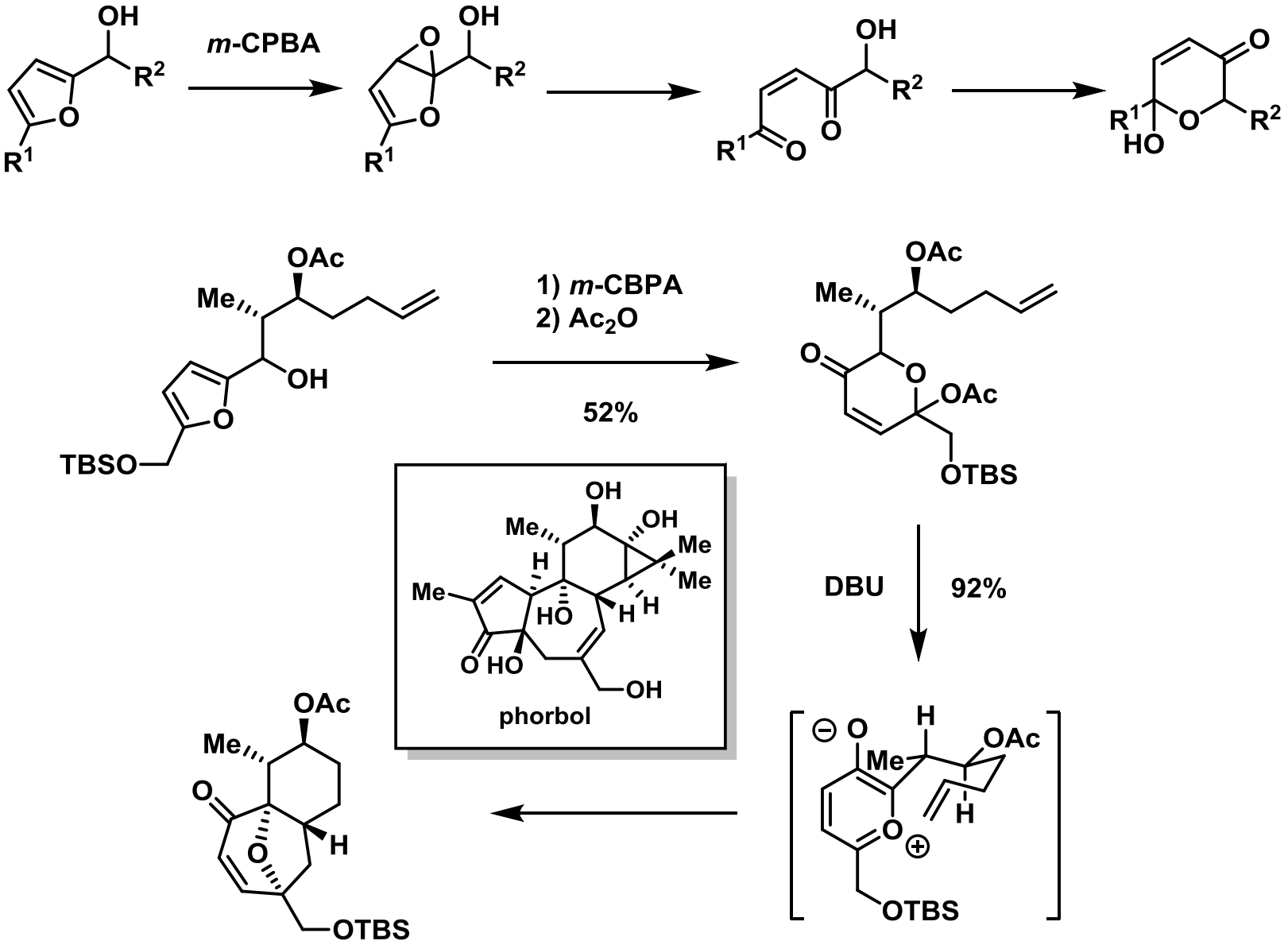
Oxidopyrylium [5 + 2] cycloaddition



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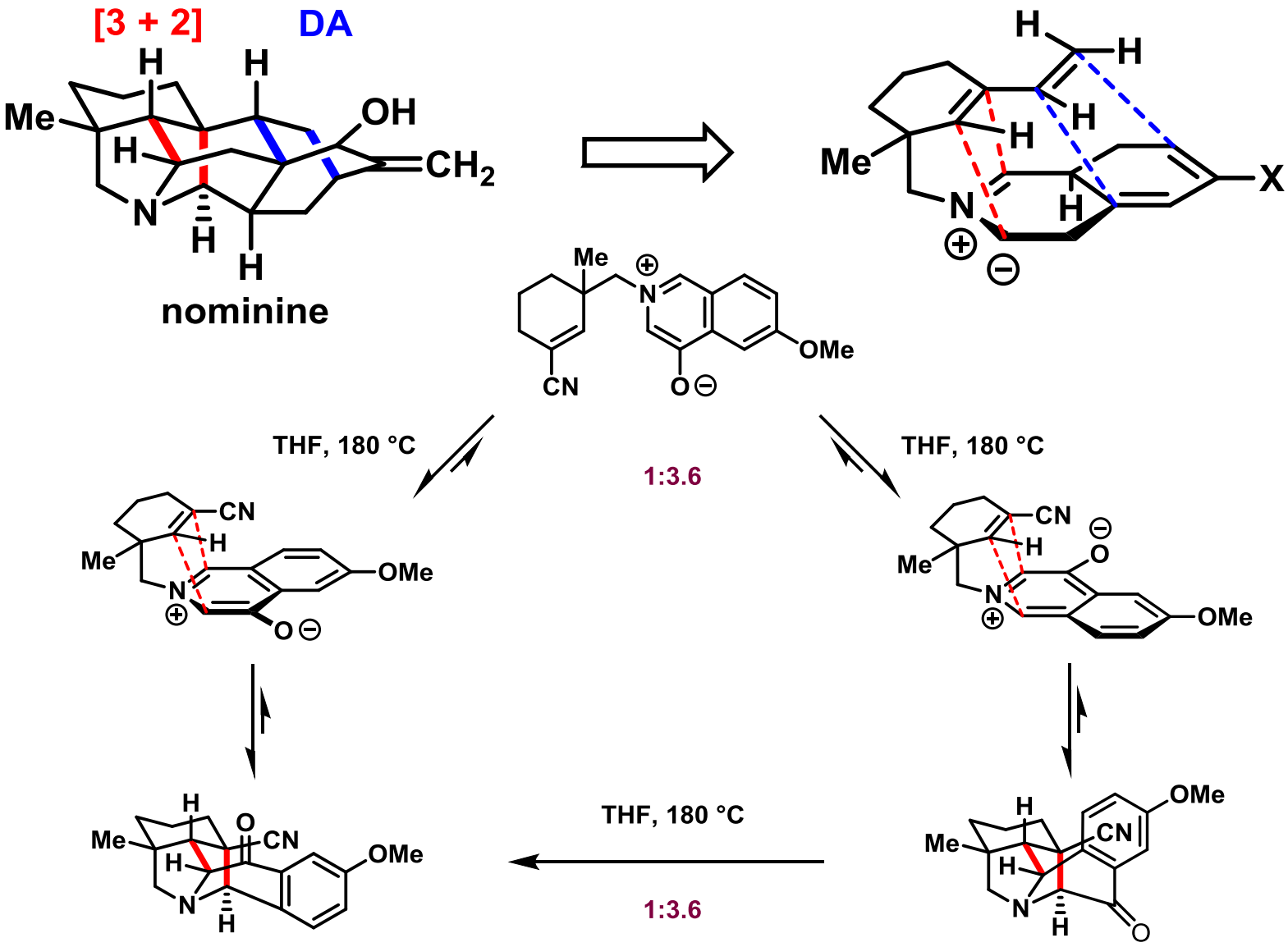
Oxidopyridinium [5 + 2] cycloaddition



Gin, et al. *J. Am. Chem. Soc*. **2006**, *128*, 8734.

谢　谢！

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