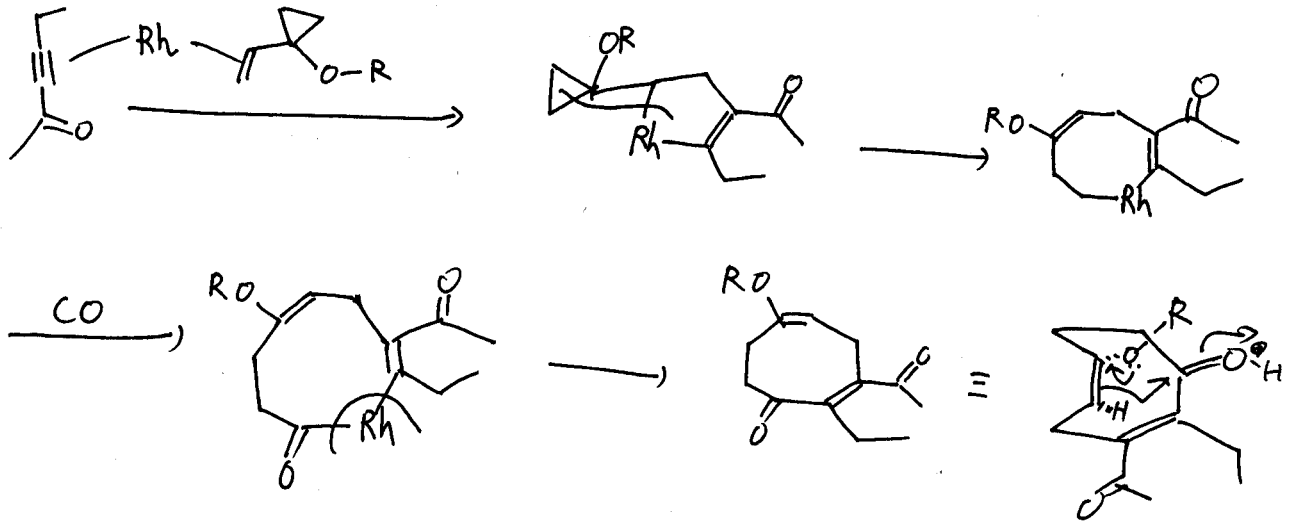


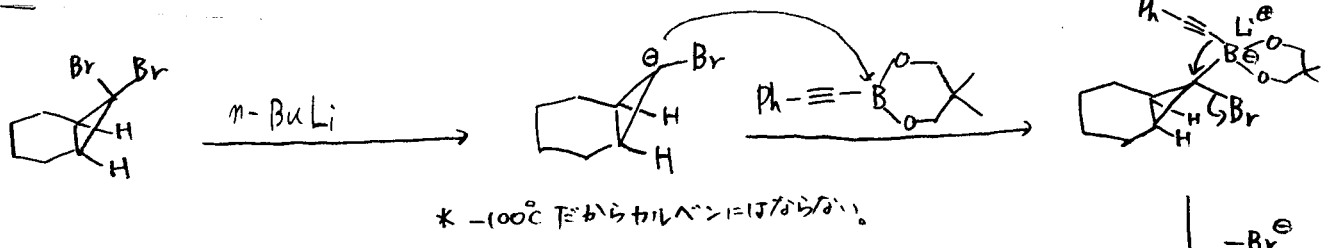
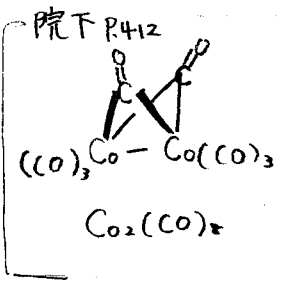
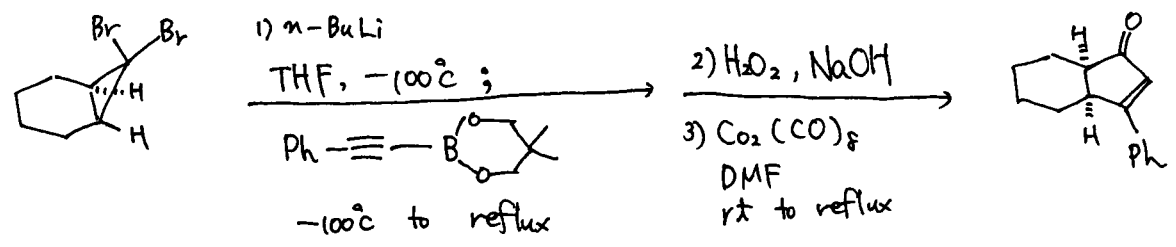
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1.

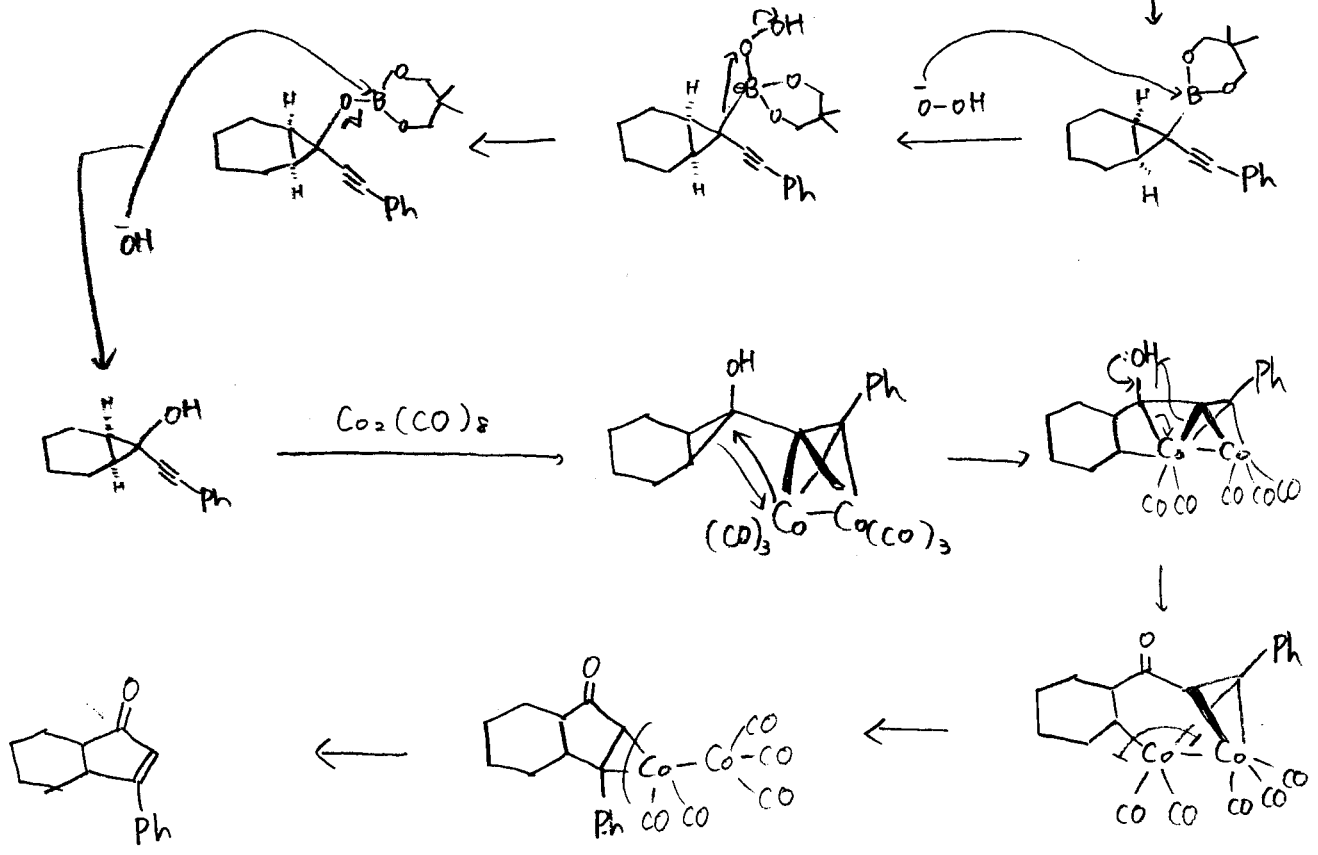


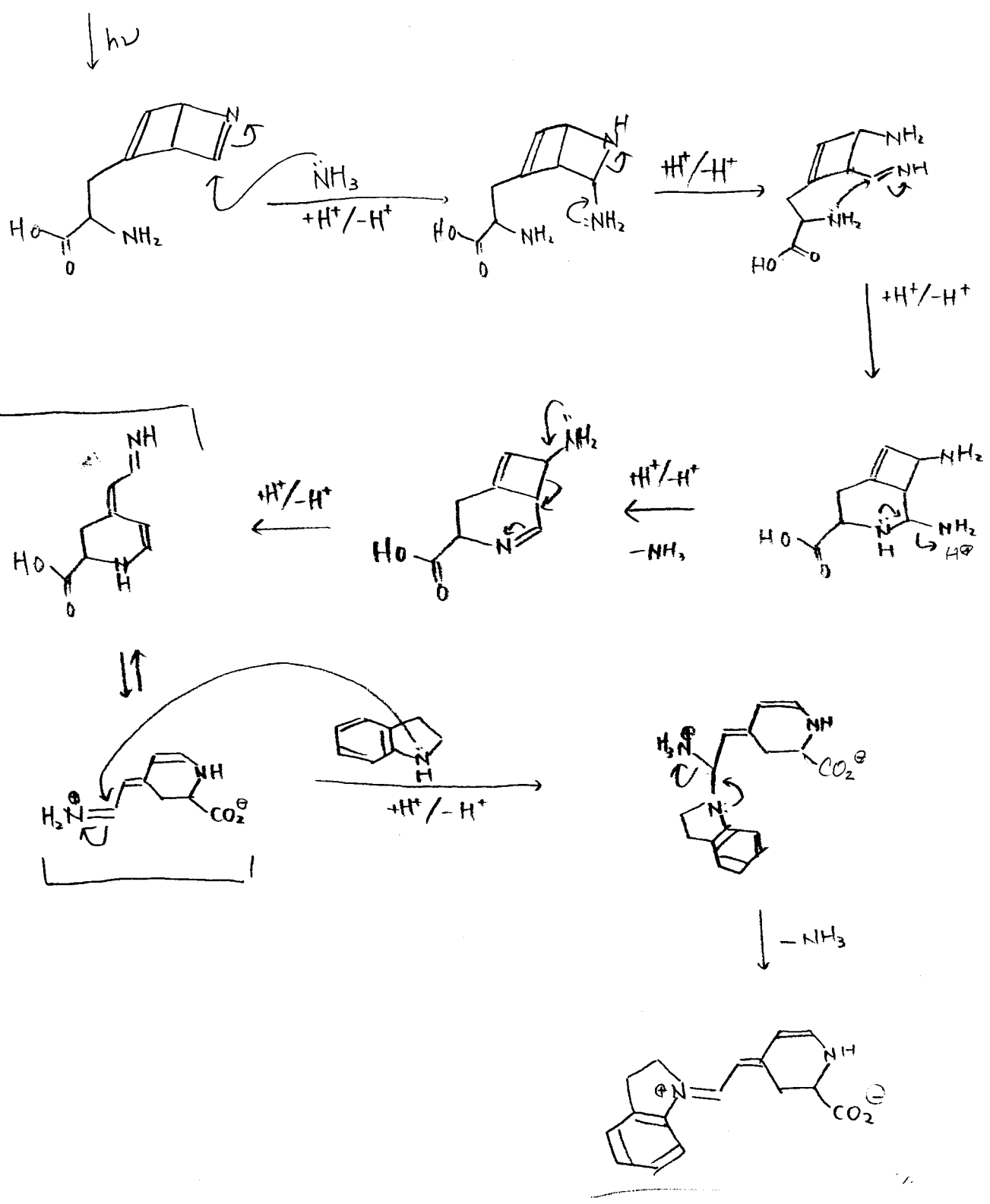
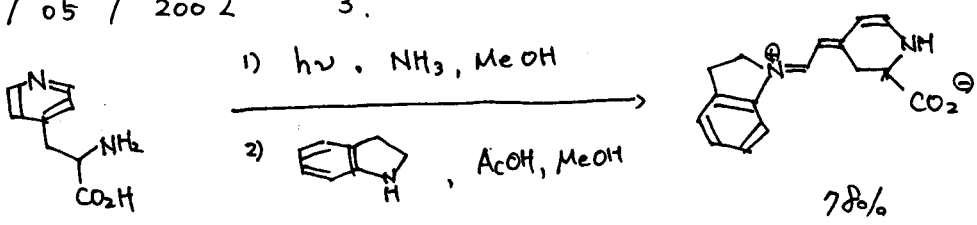
JACS (2002) 2876
P.A. Wender.

workup
H₃O⁺
↓
prod.



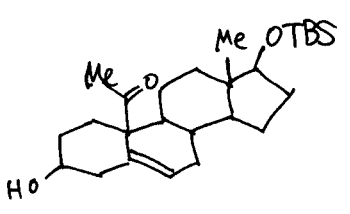
* -100°C 以下に操作する必要がある。





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4.



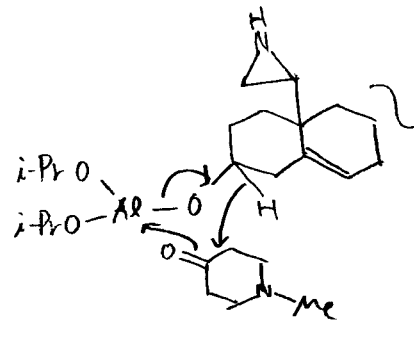
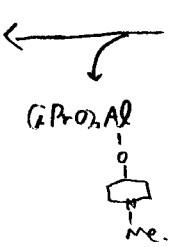
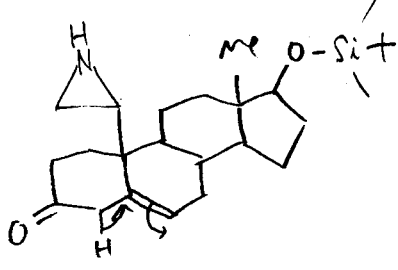
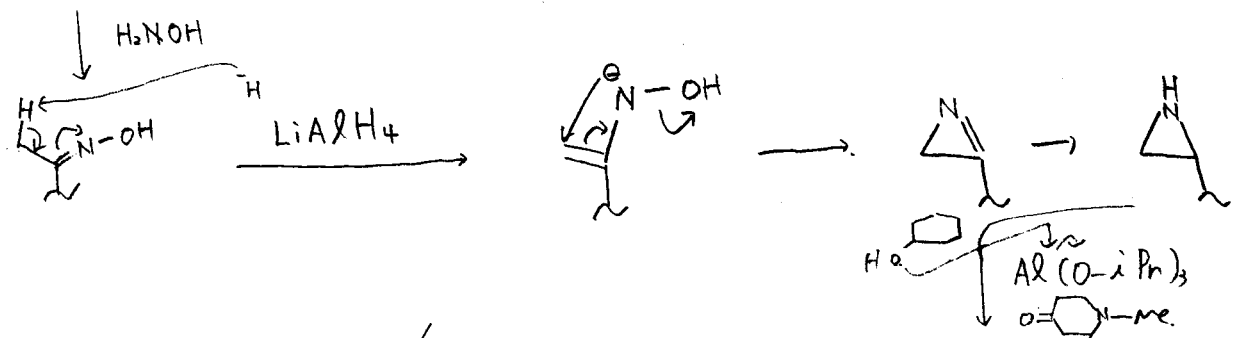
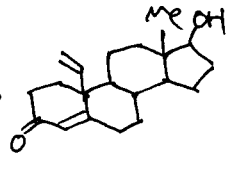
1) $\text{H}_2\text{NOH} \cdot \text{HCl}$, Py
reflux

2) LiAlH_4 , THF
reflux

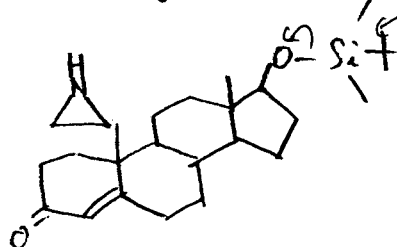
3) $\text{Al}(\text{O}-i\text{-Pr})_3$
N-methyl-4-piperidone
toluene, reflux, Dean-Stark

4) aq. HF, MeCN

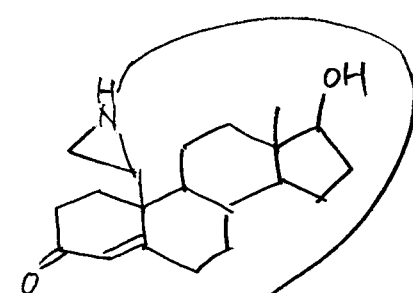
5) NaNO_2 , H_2O , AcOH



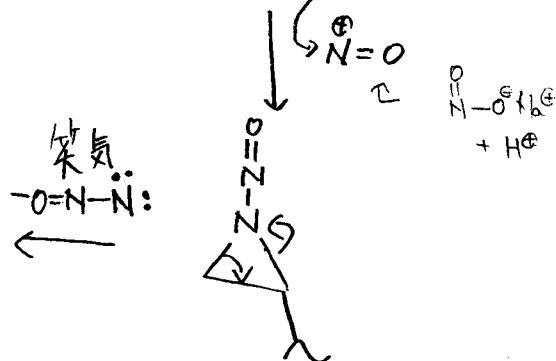
reflux.
(d.p. 不脱去)



F^{\ominus} , H_2O

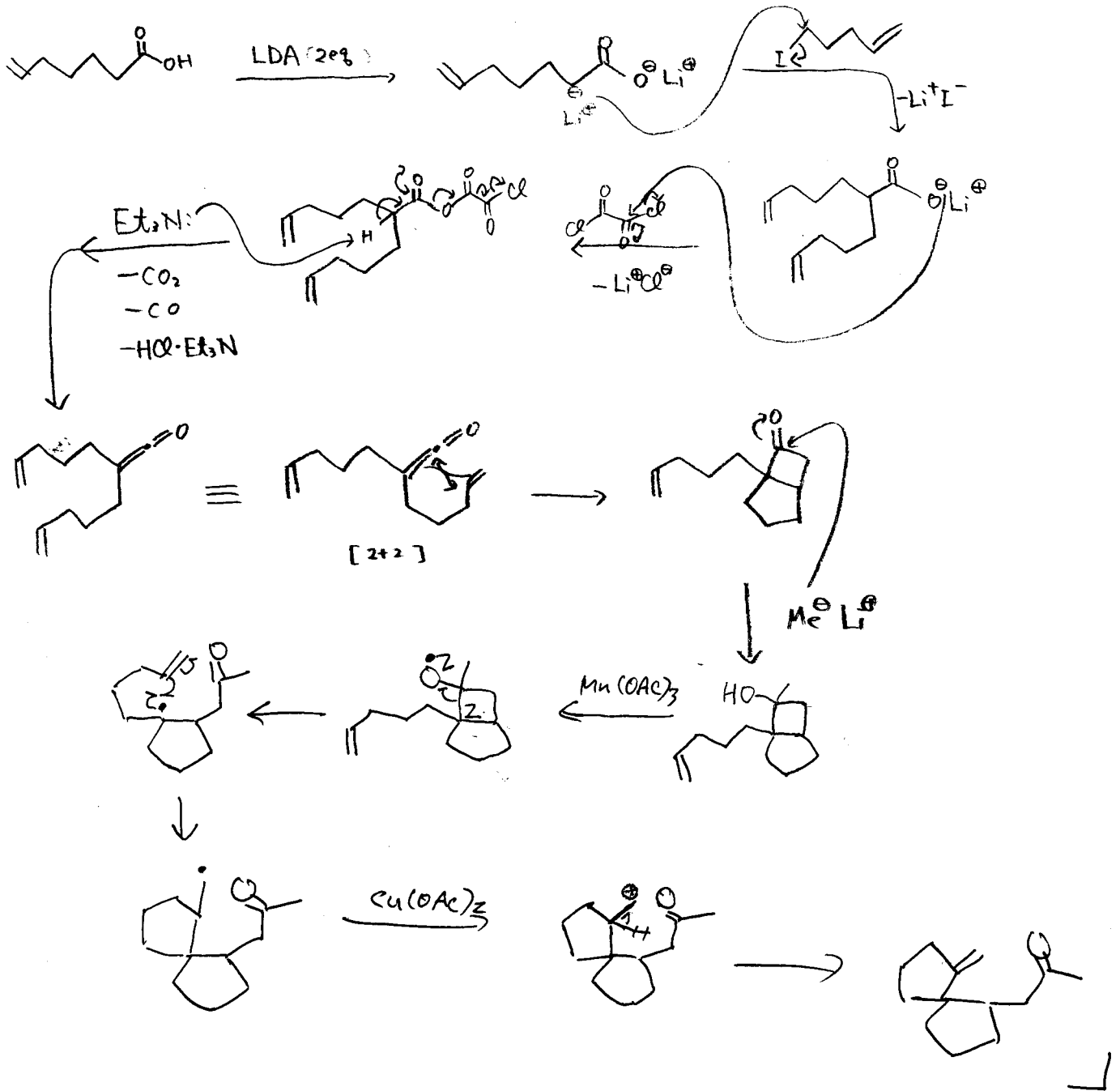
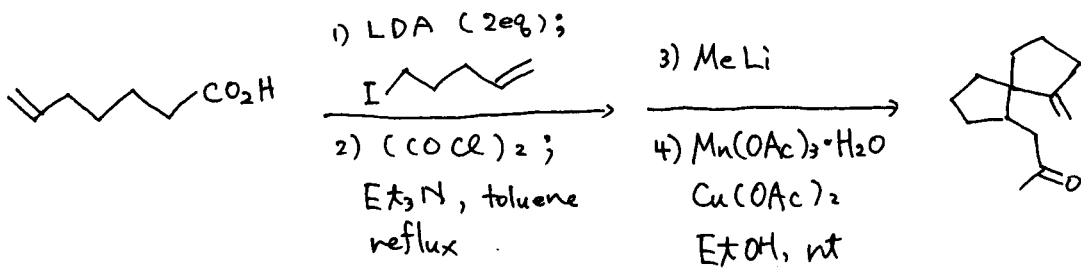


prod.

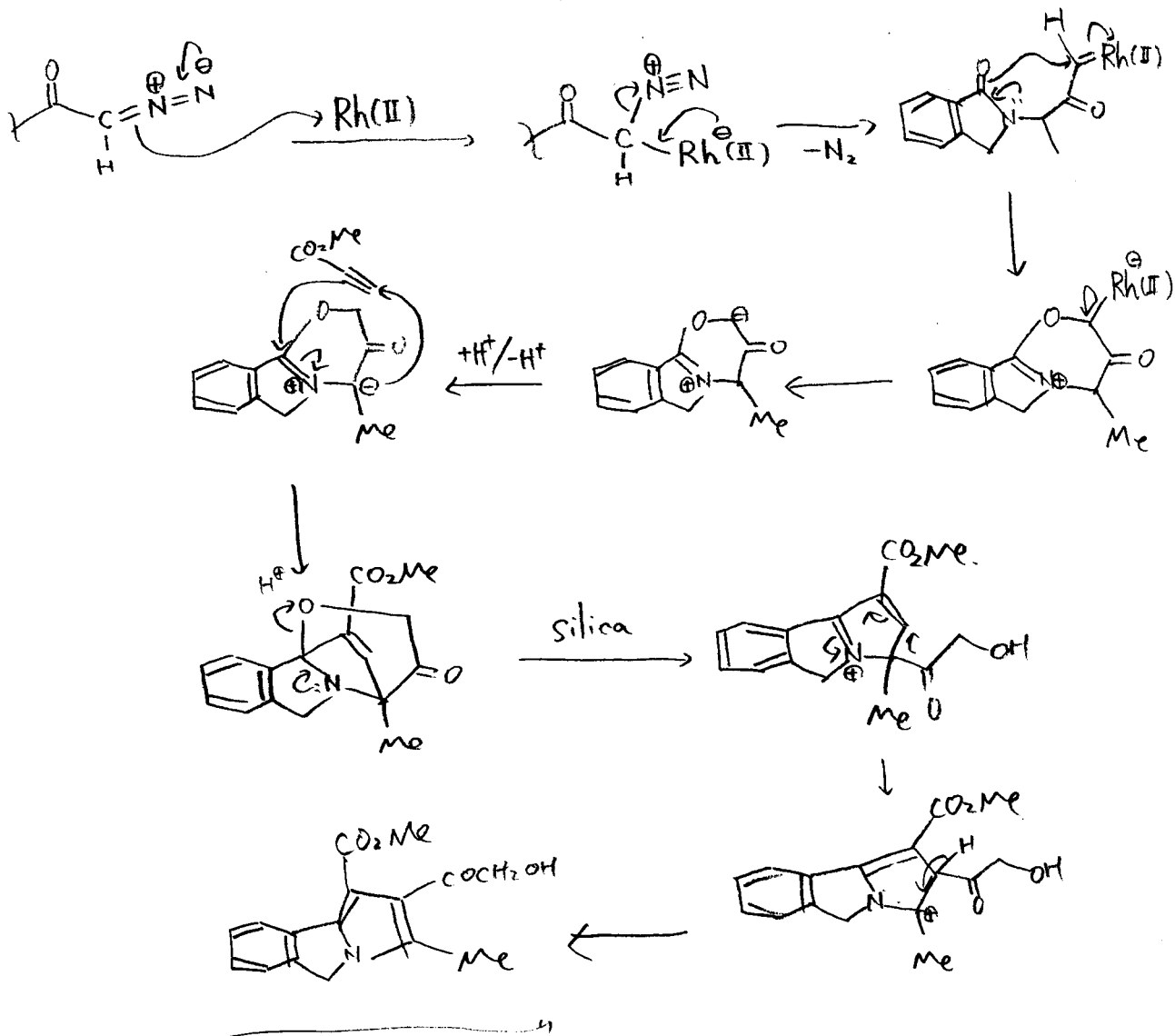
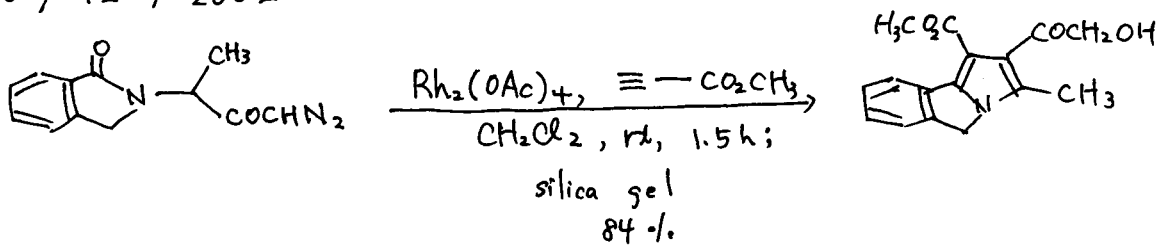


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5.

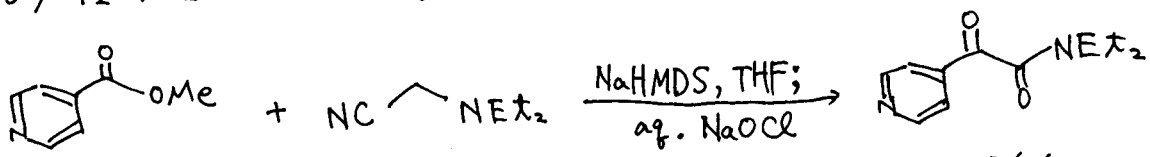


06 / 12 / 2002 1.



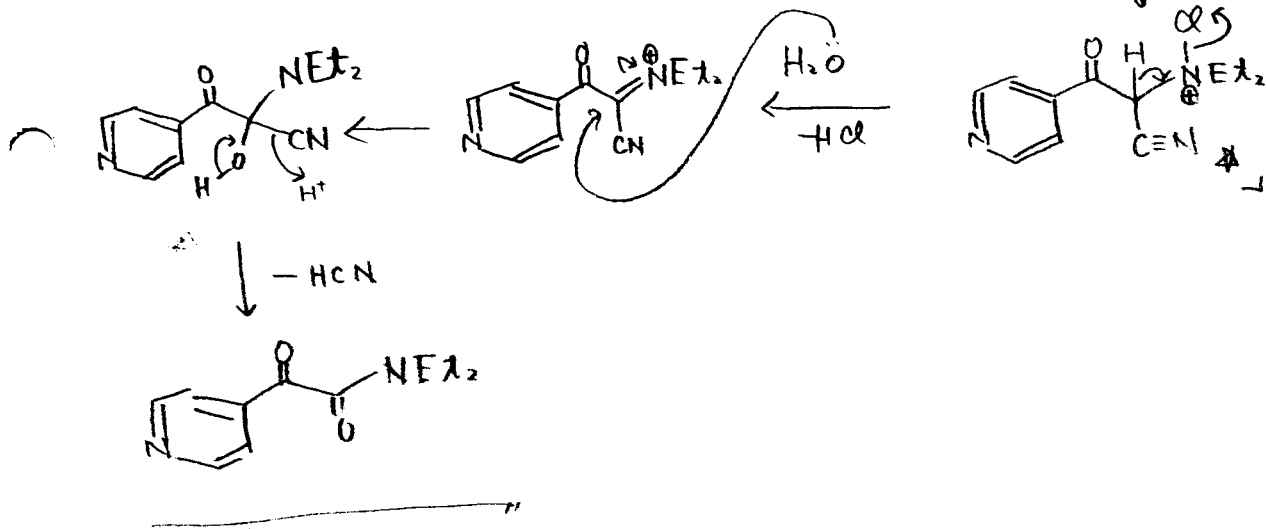
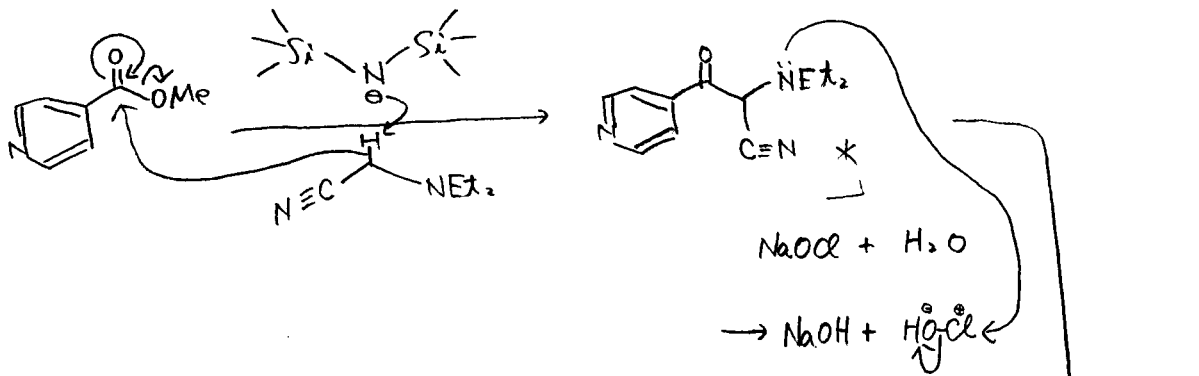
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2.

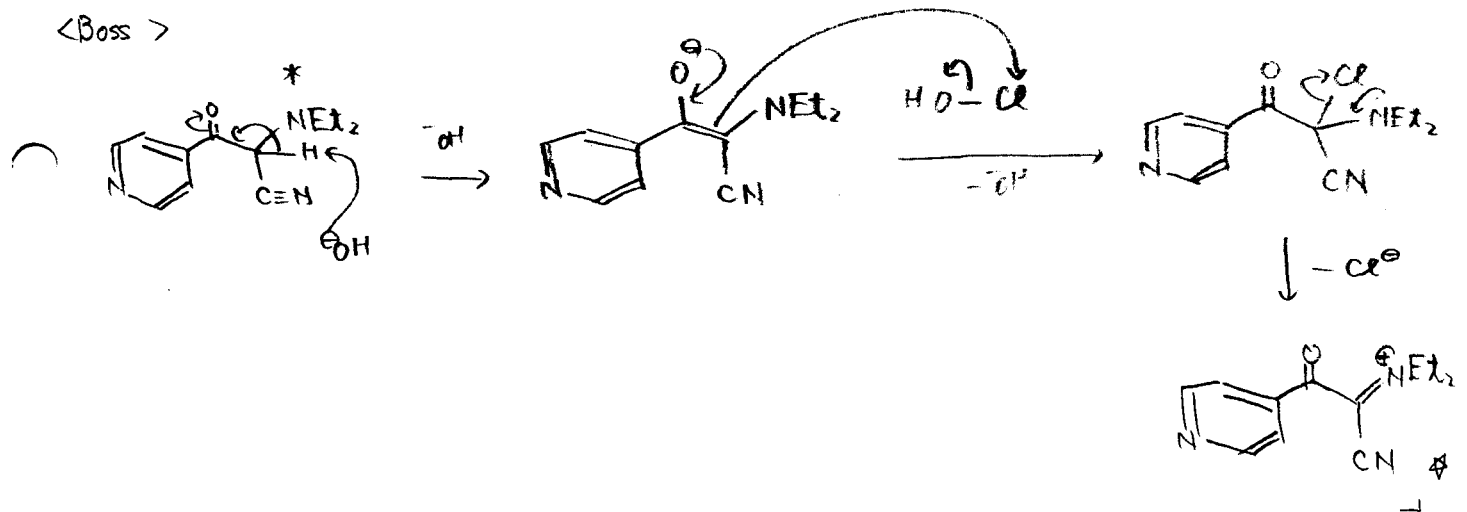


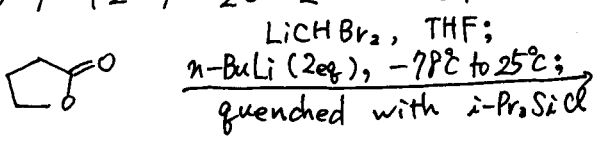
7/4-

T. Kubo

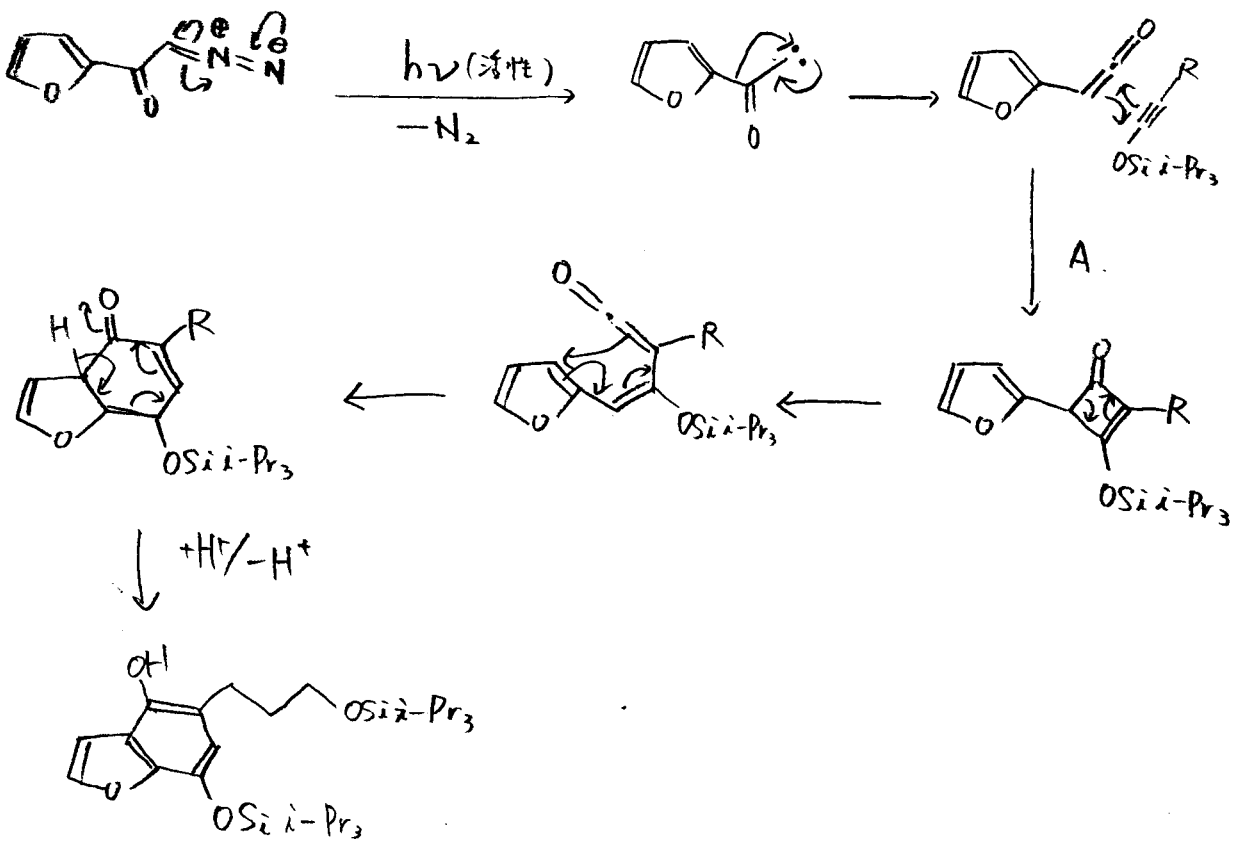
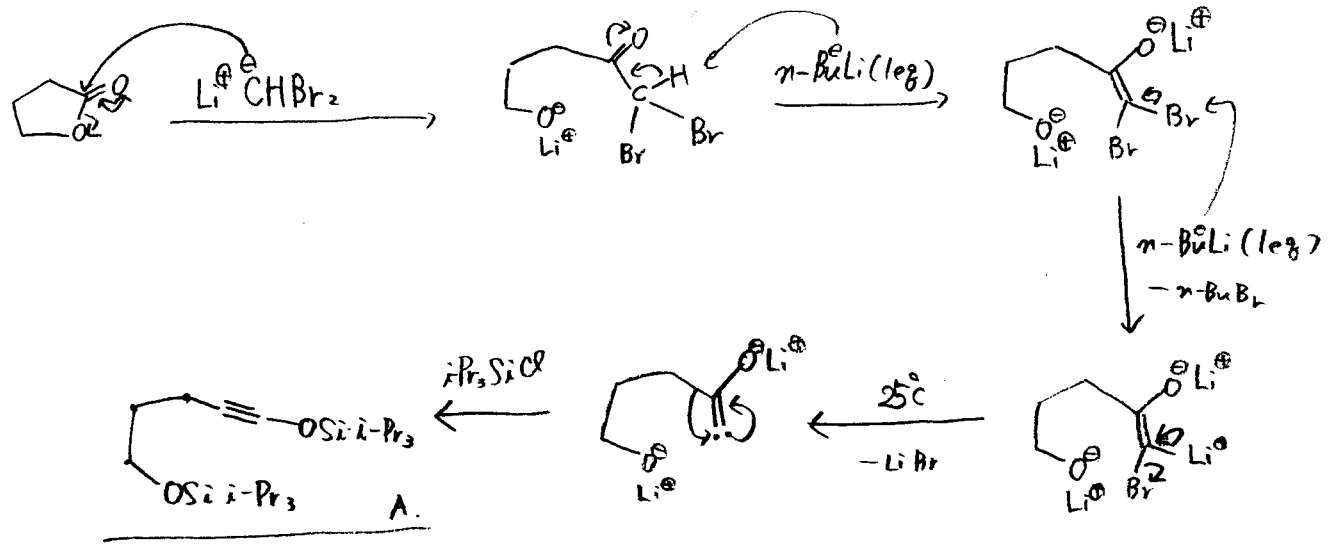
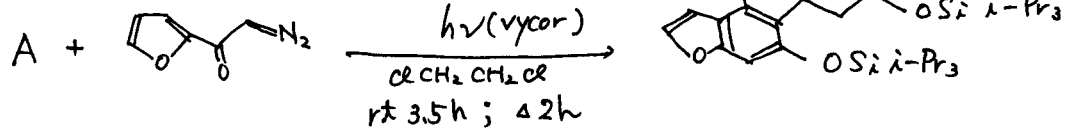


<Boss >

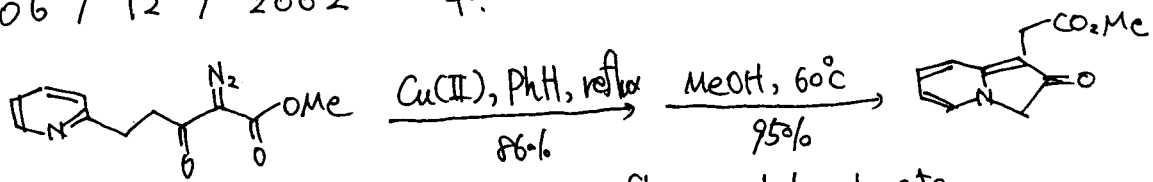




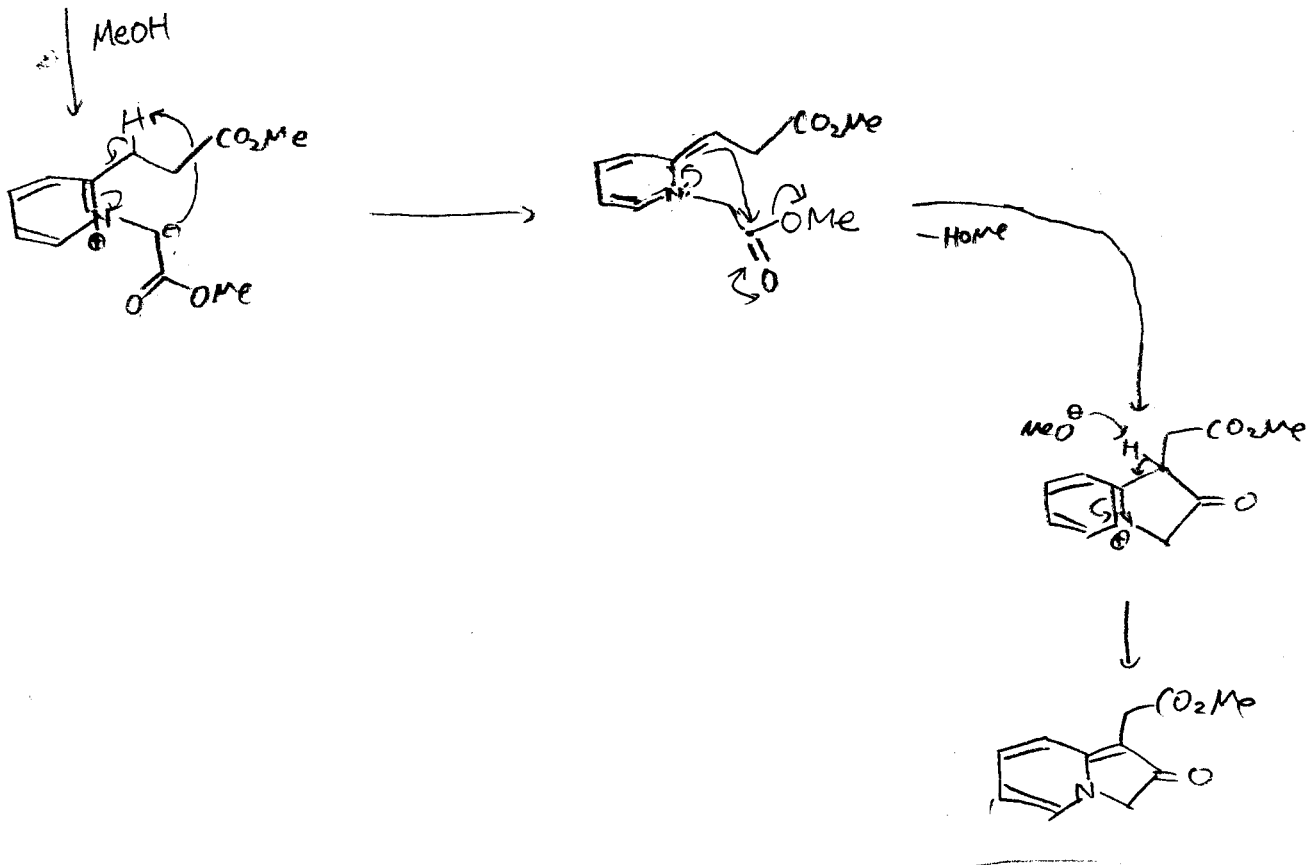
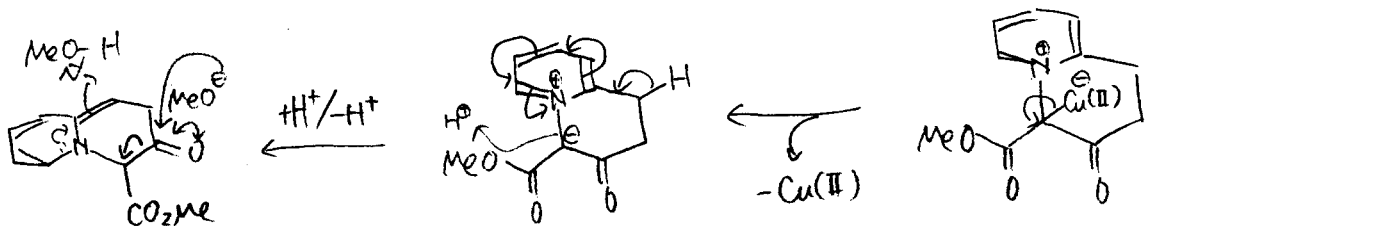
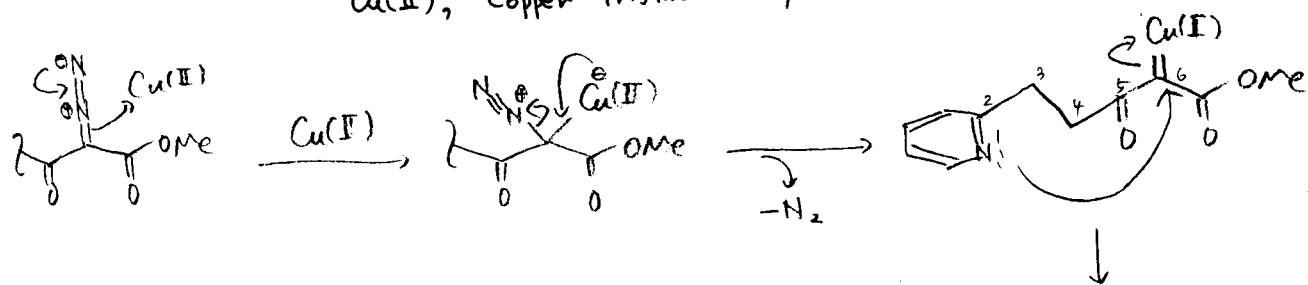
A



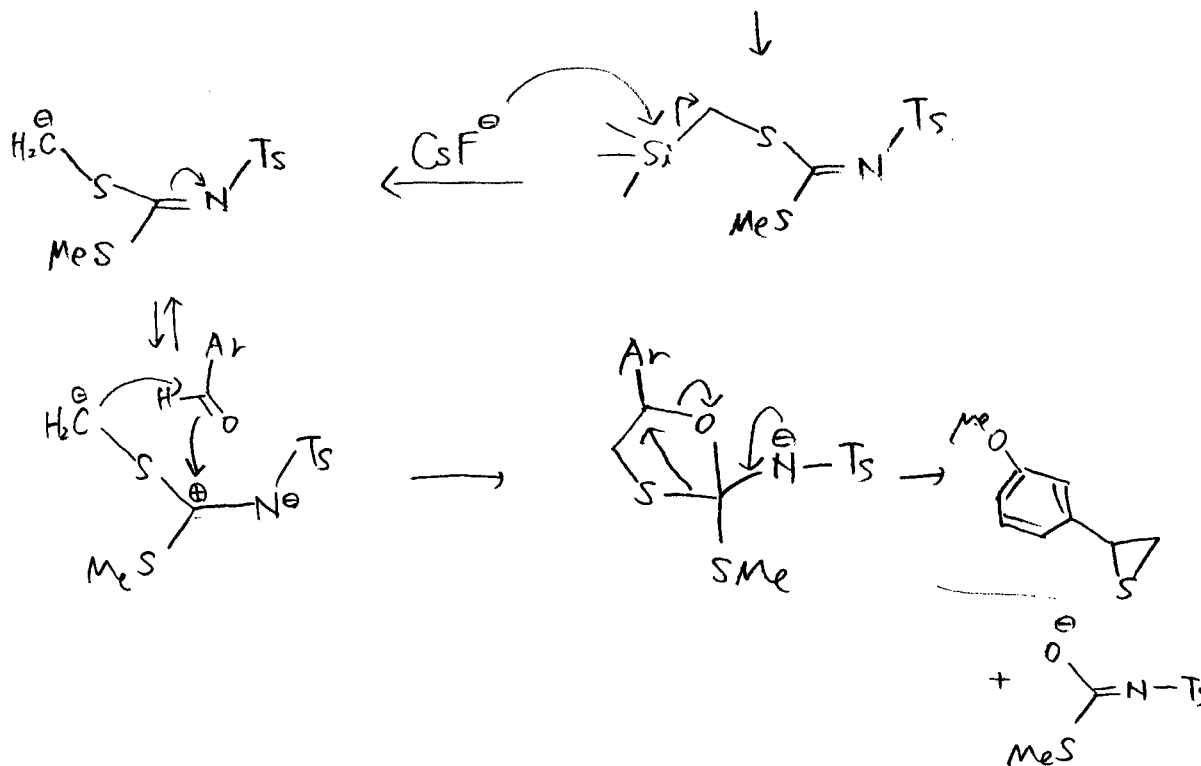
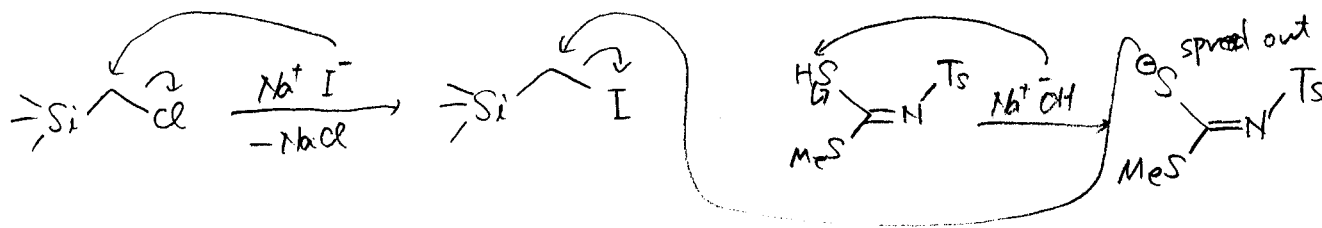
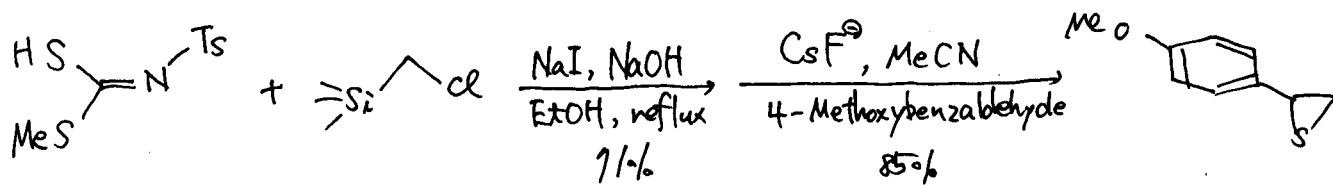
06 / 12 / 2002 4.



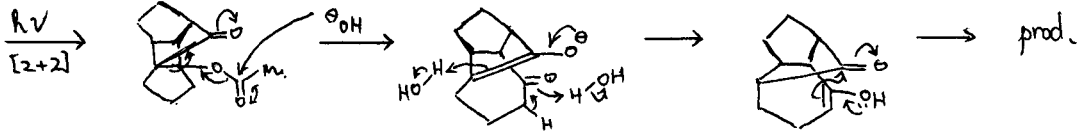
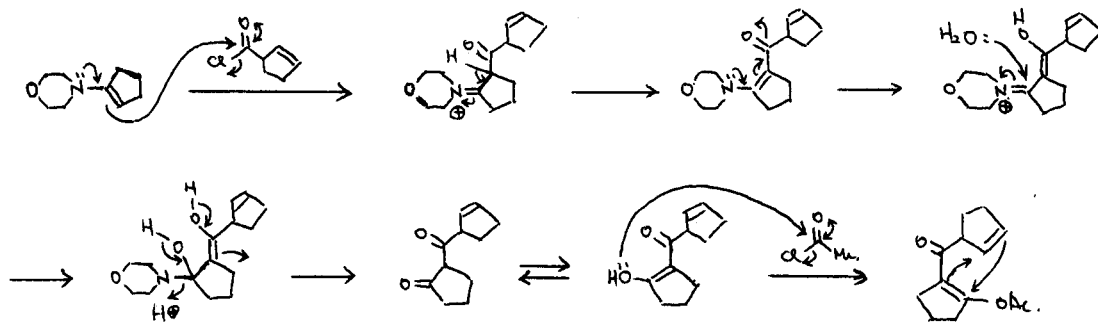
Cu(II); Copper trifluoroacetate



prod

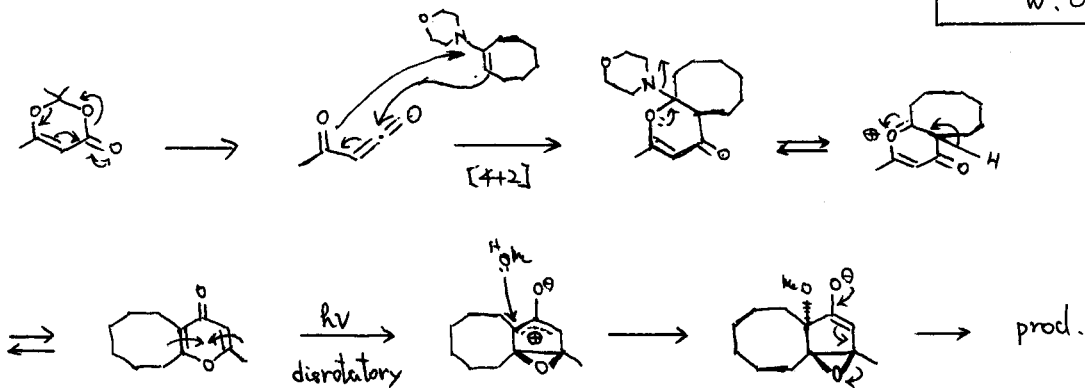


4.



JACS. 1978, 100, 2583
W. Oppolzer

5F



Synthesis 2001, Na8, 1268
Frederick G. West