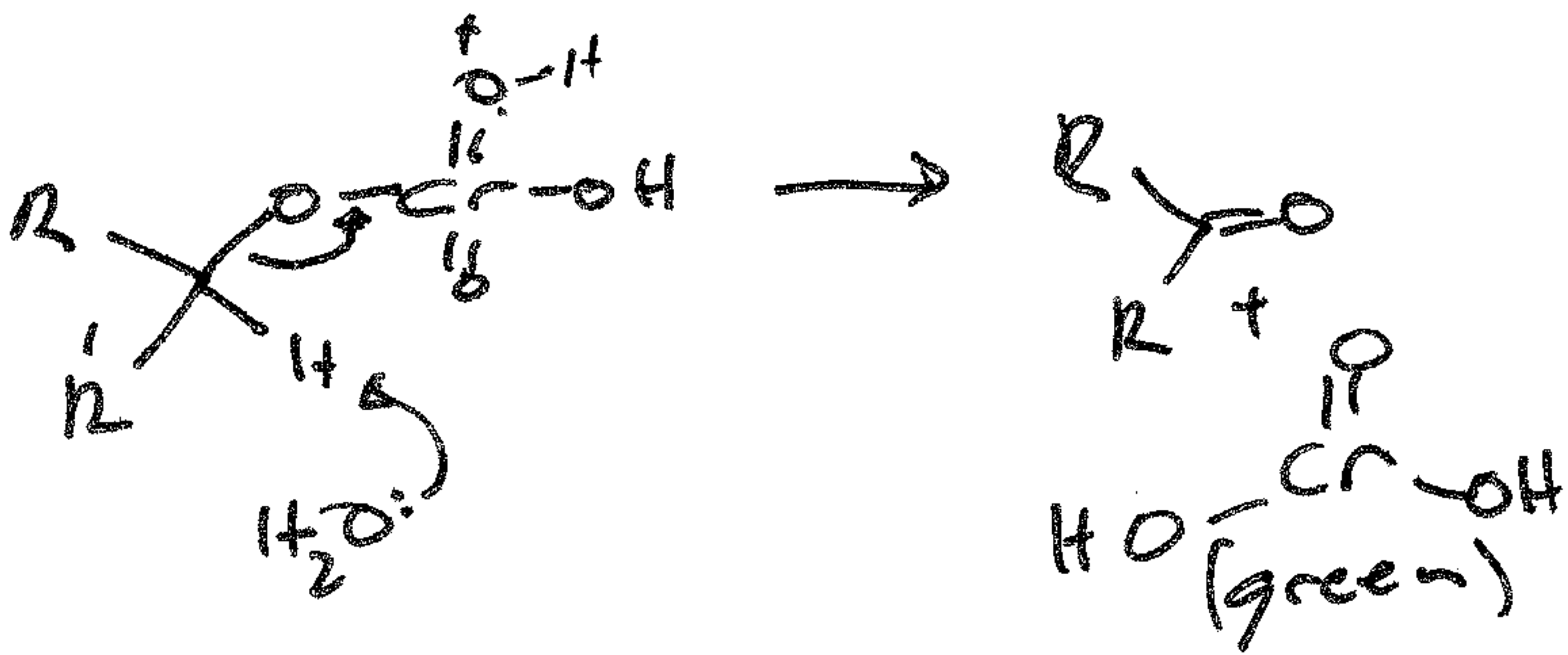
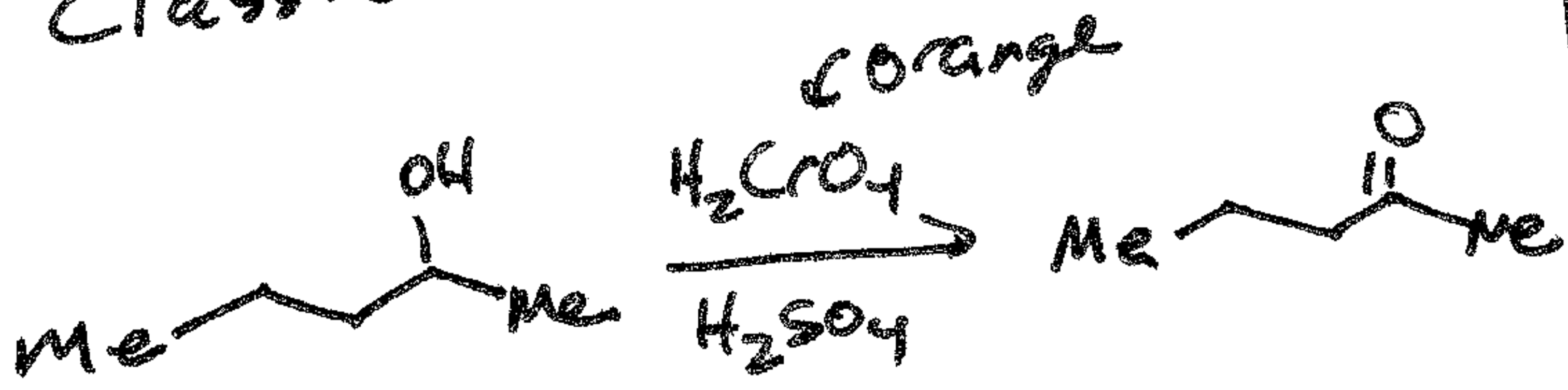
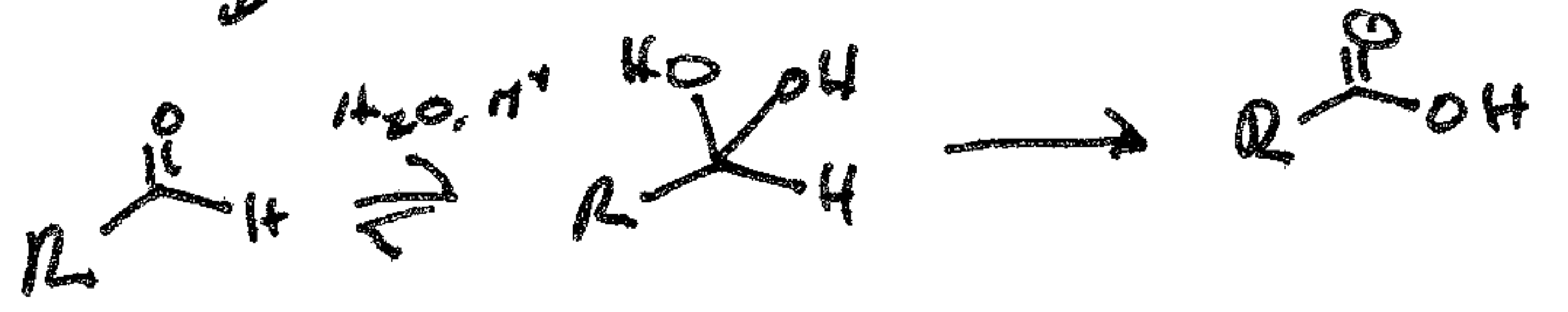
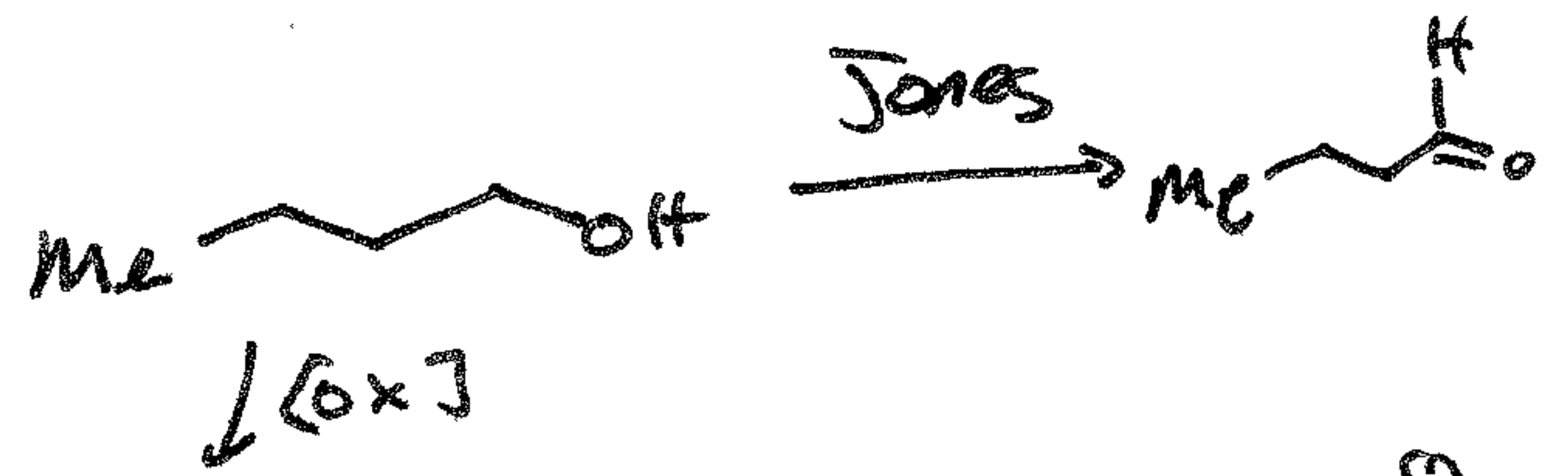


Alcohol & Ketone Oxidation

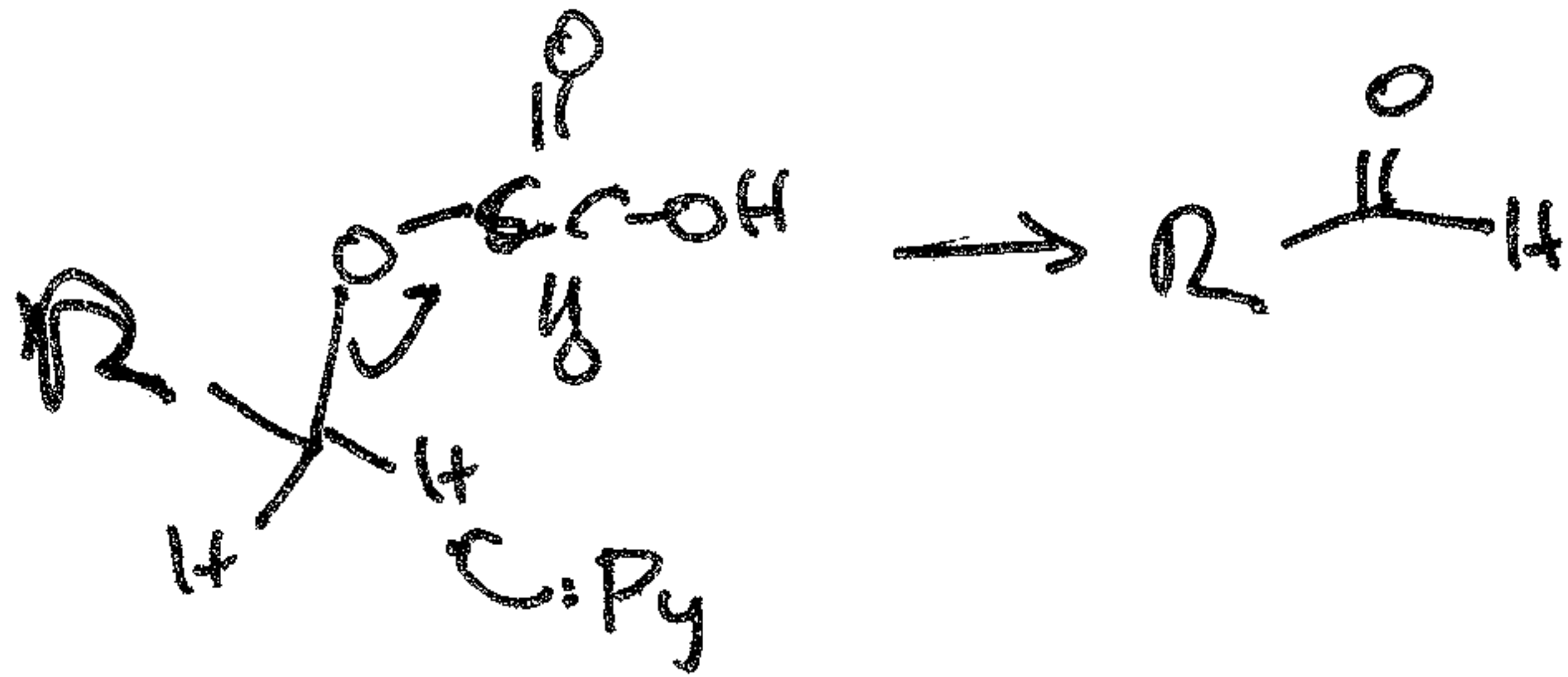
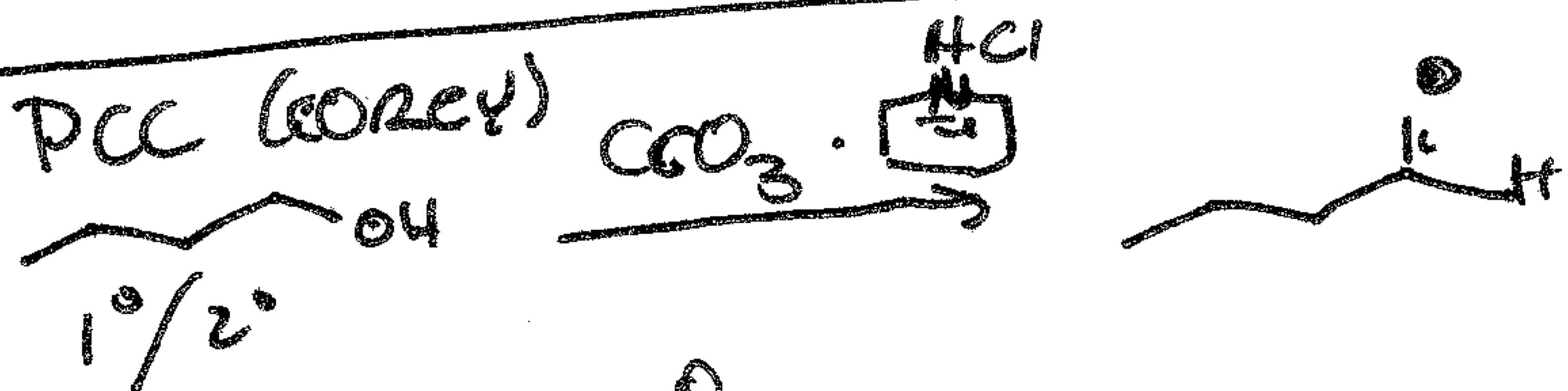
Classical - Jones Oxidation



however...



how to stop at aldehyde?

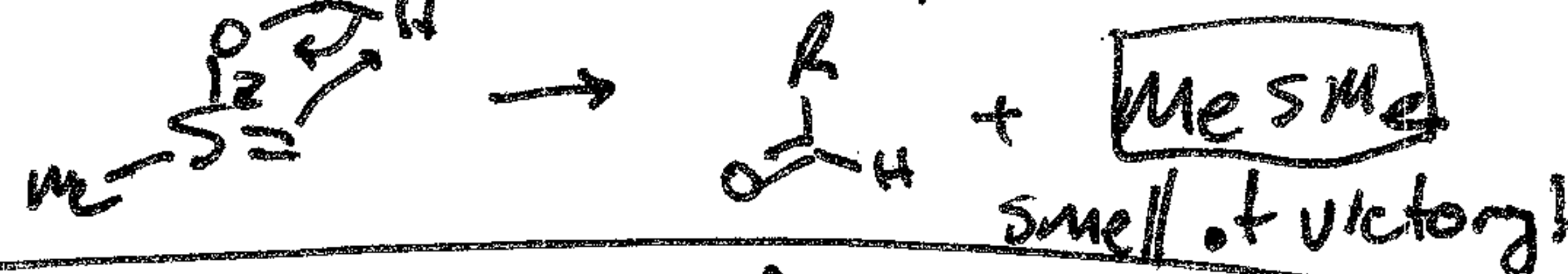
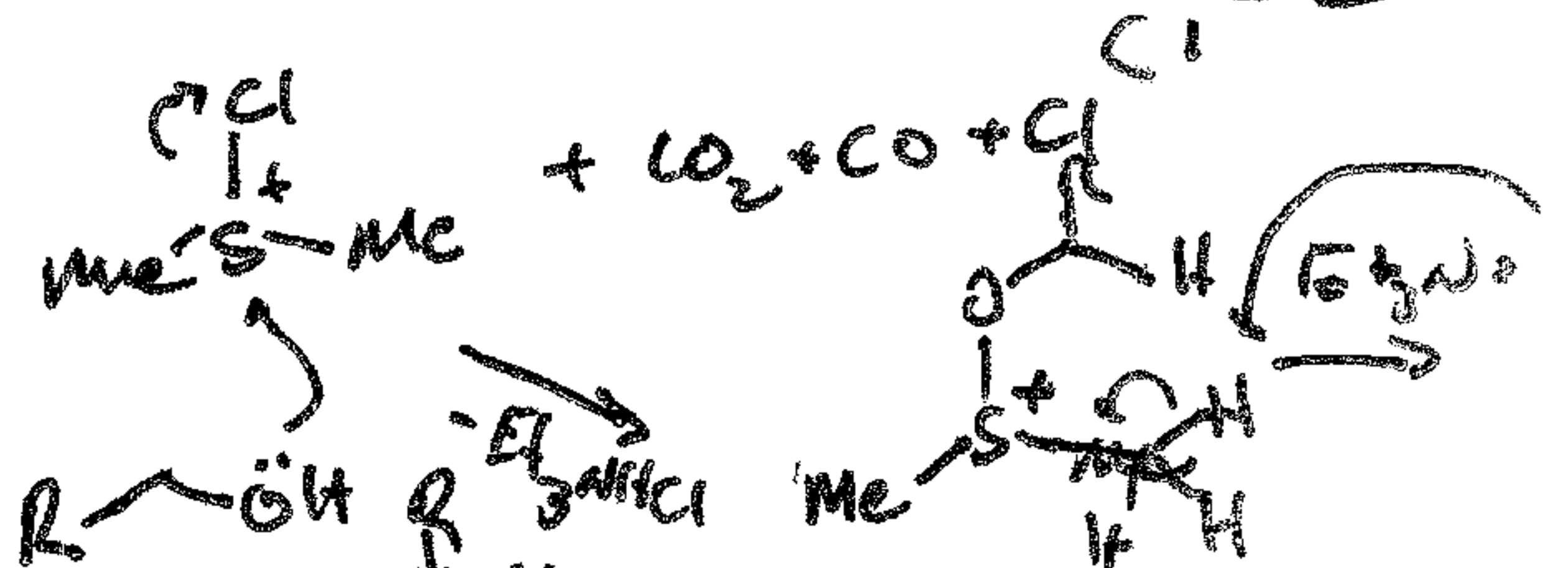
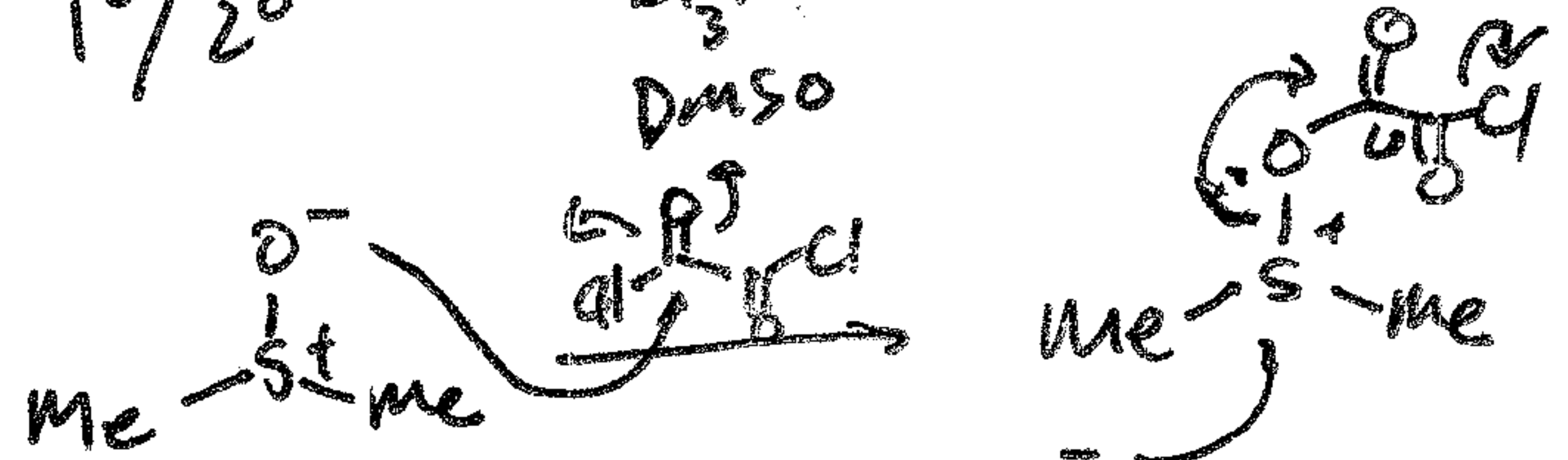
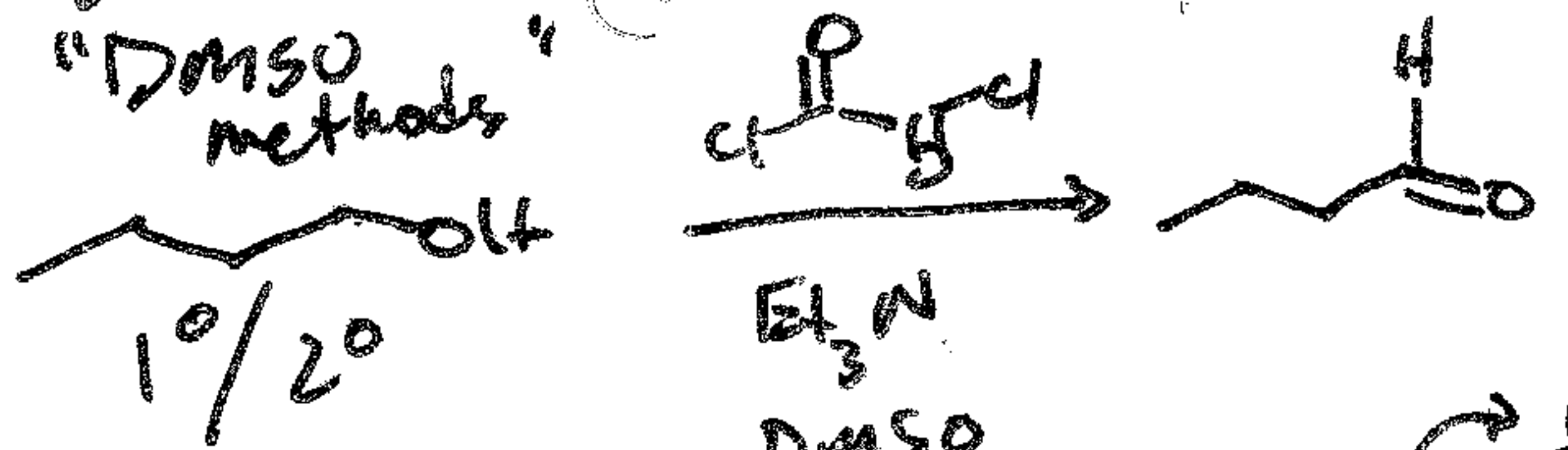


Anhydrous.

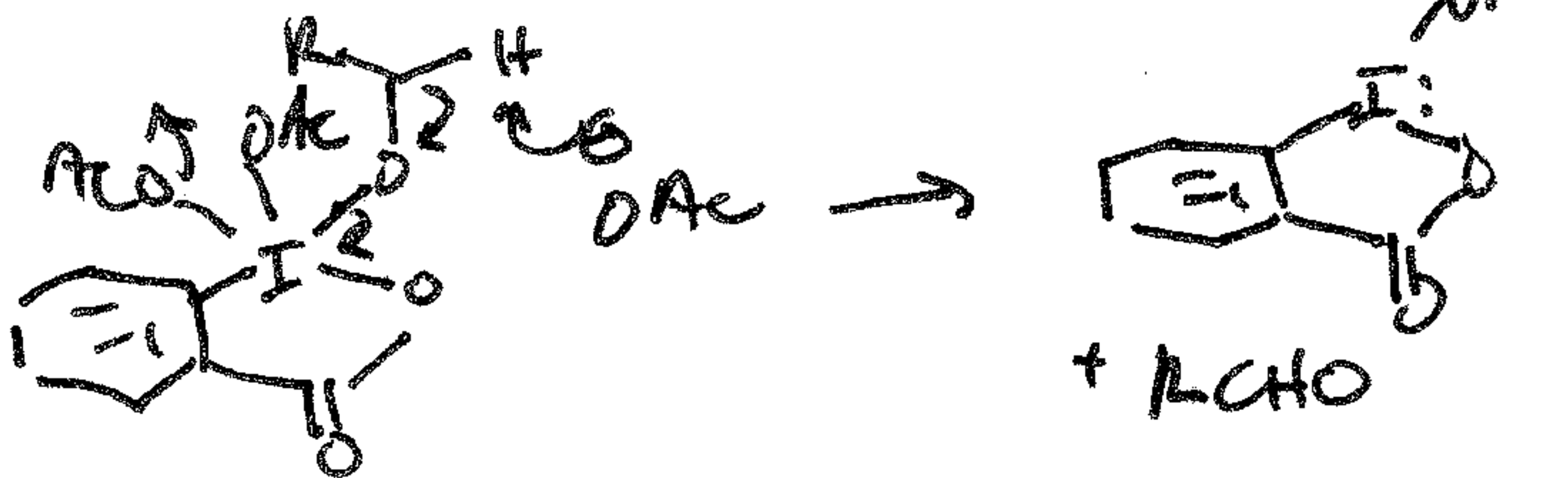
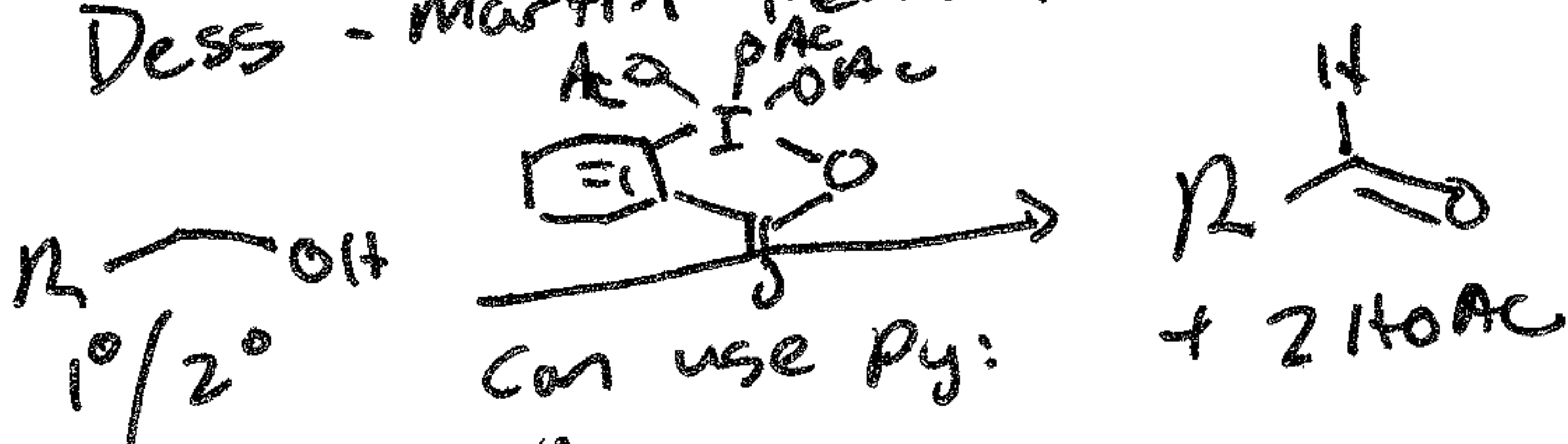
Cr Side-products toxic!

Swern "DMSO methods"

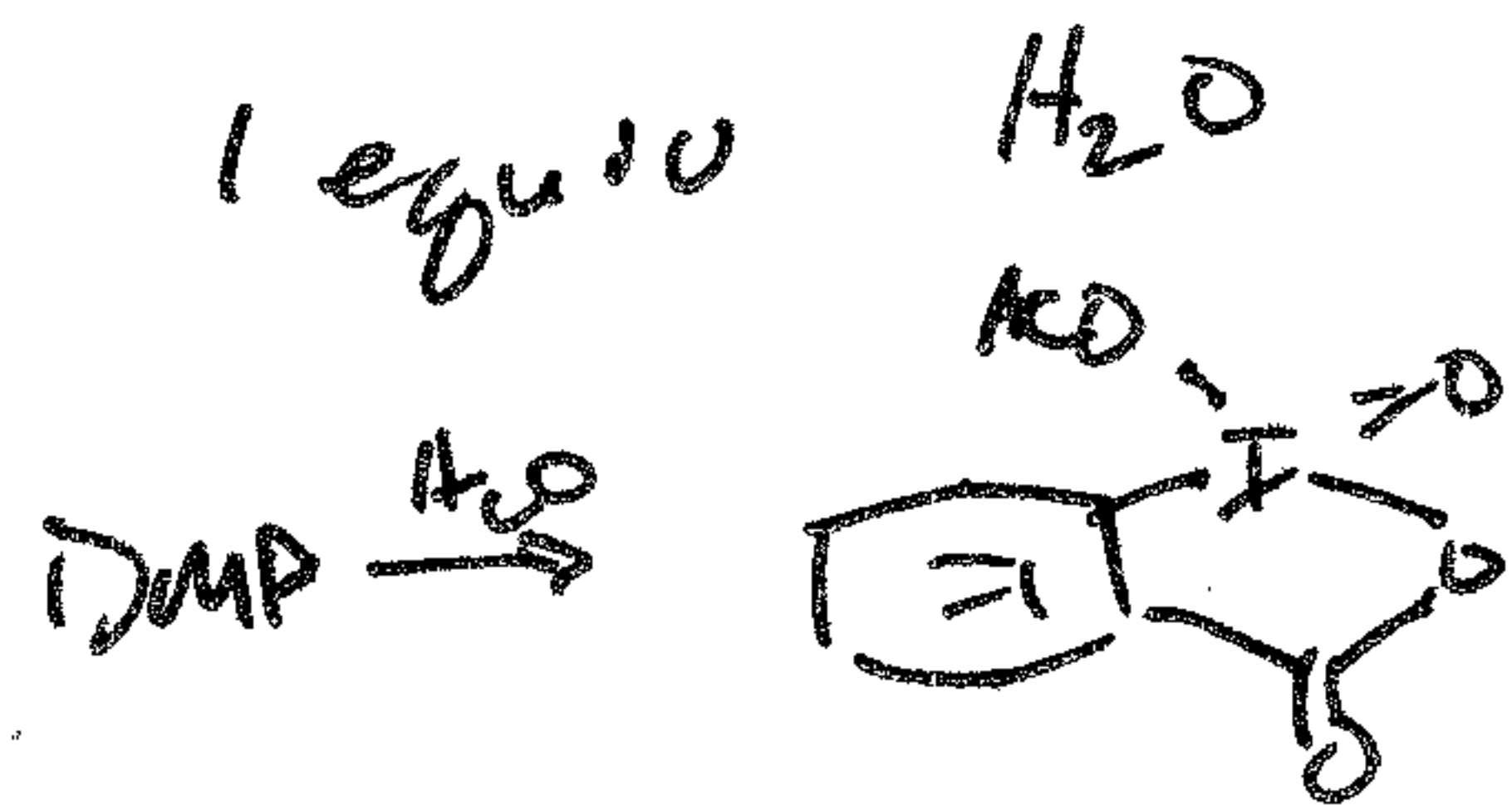
(Do SO₂ by next)



Dess - Martin Periodane

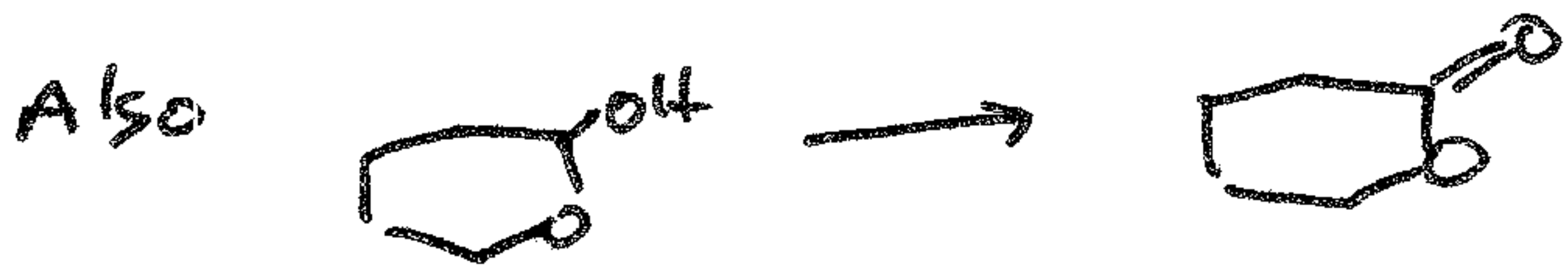
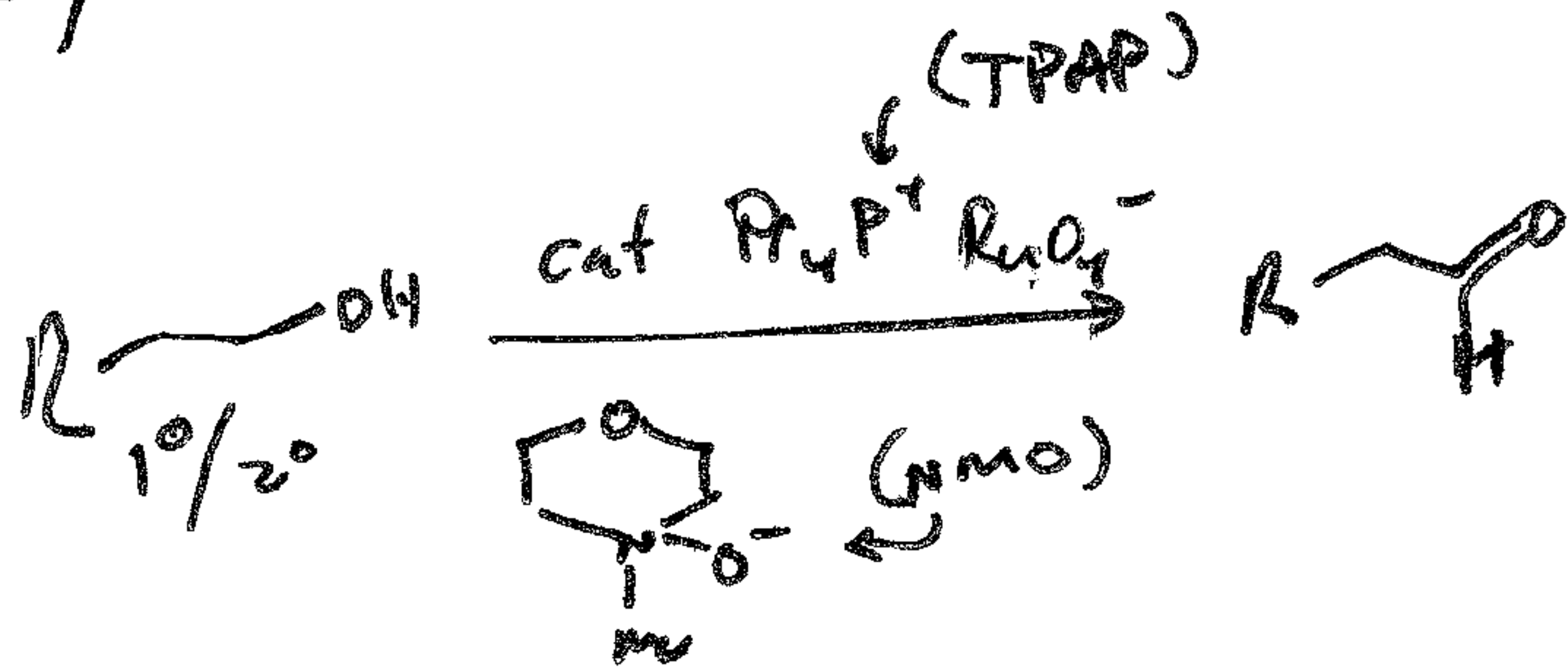


DMP more effective w/



Schreiber JOC, 1994, 59, 7549

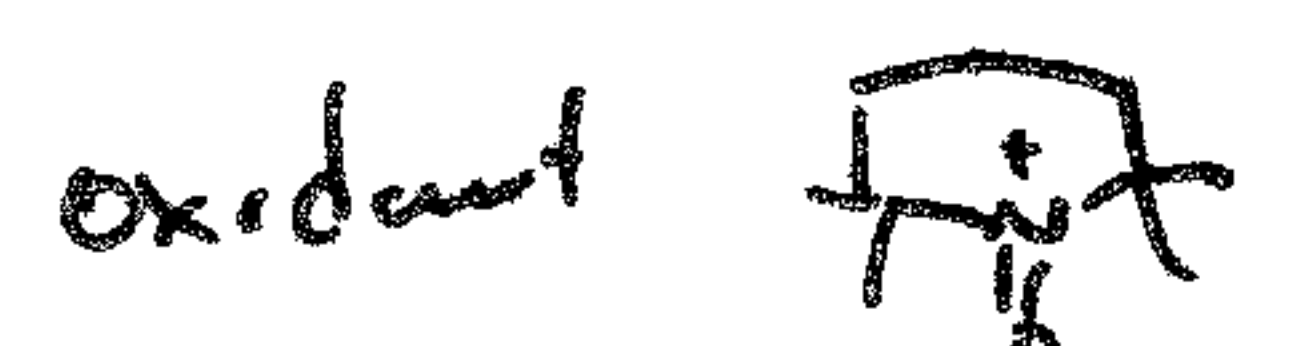
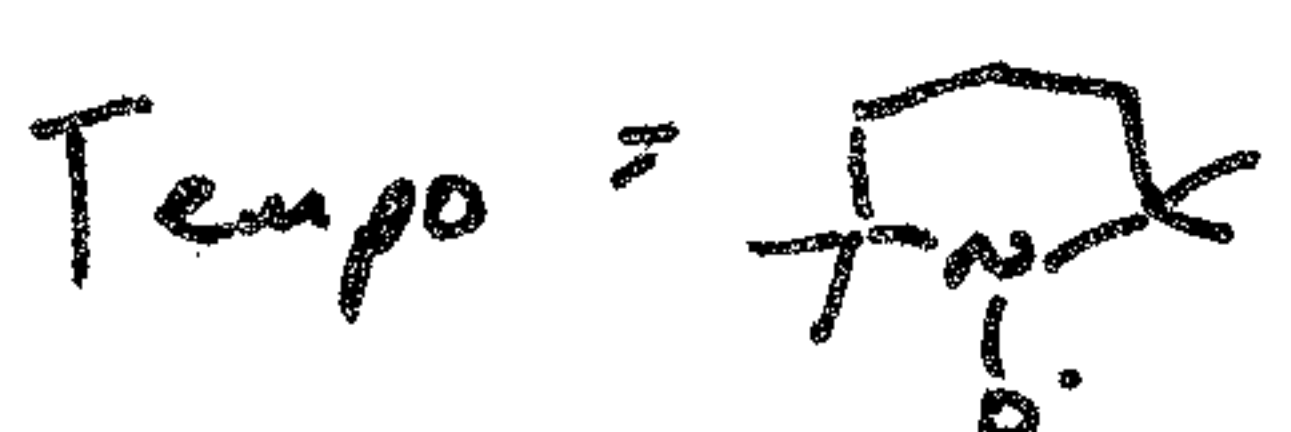
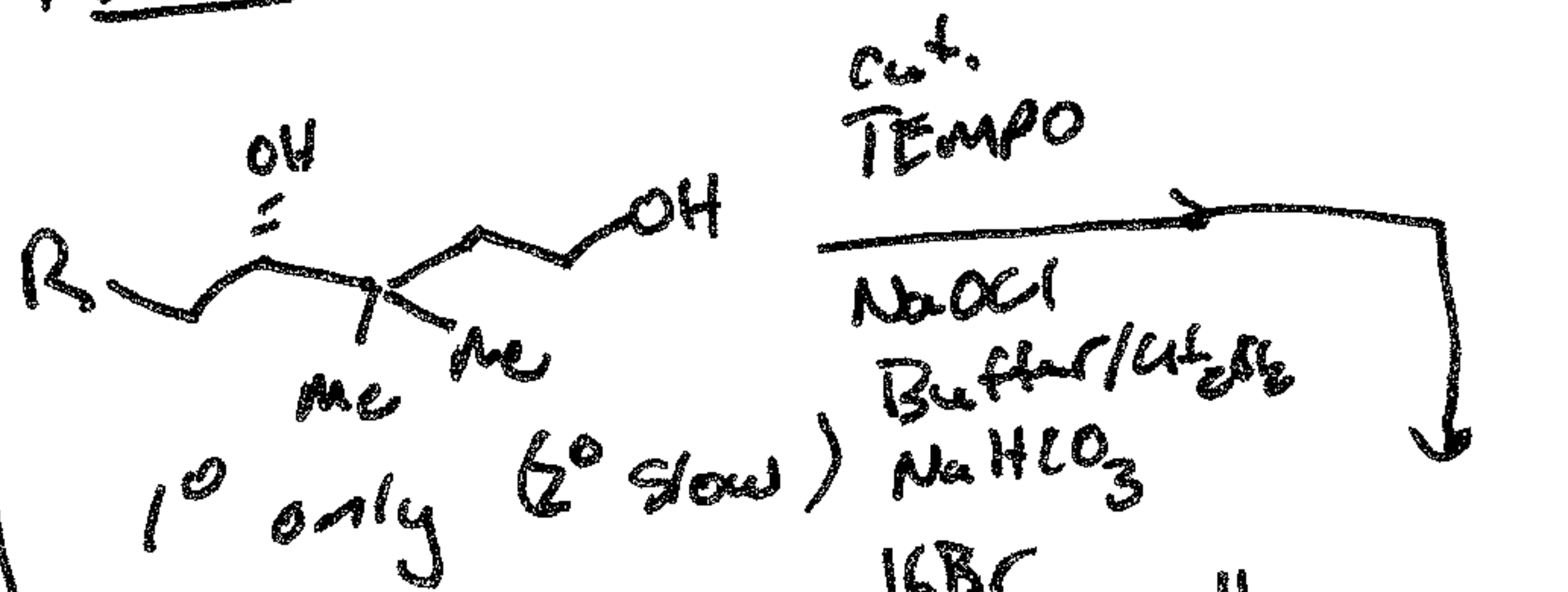
Key Oxidation (TPAP/NMO)



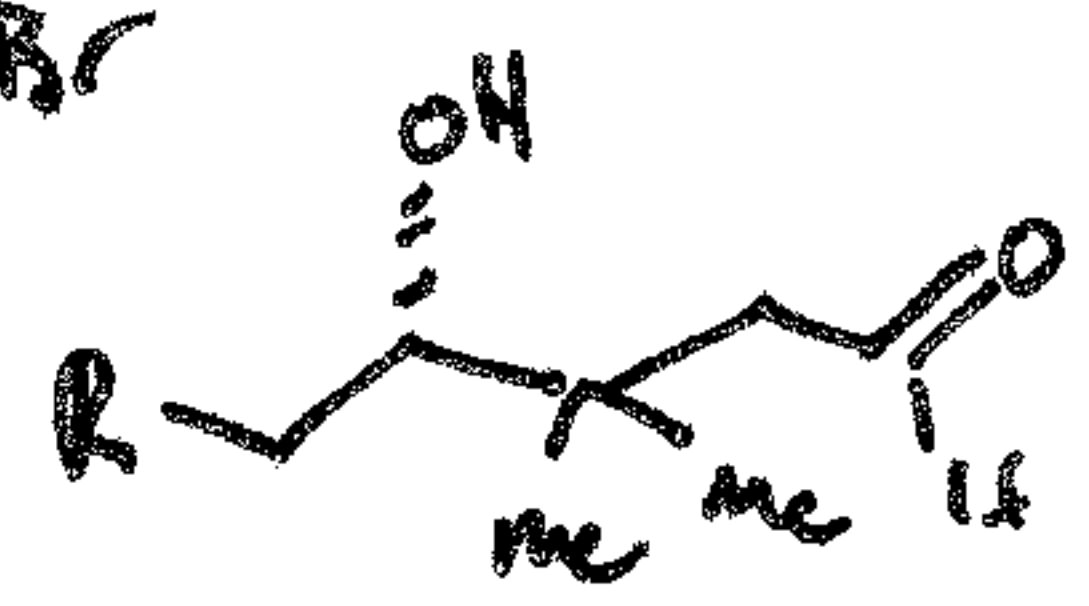
Review:

Key Synthesis, 1994, 639

TEMPO Version 1

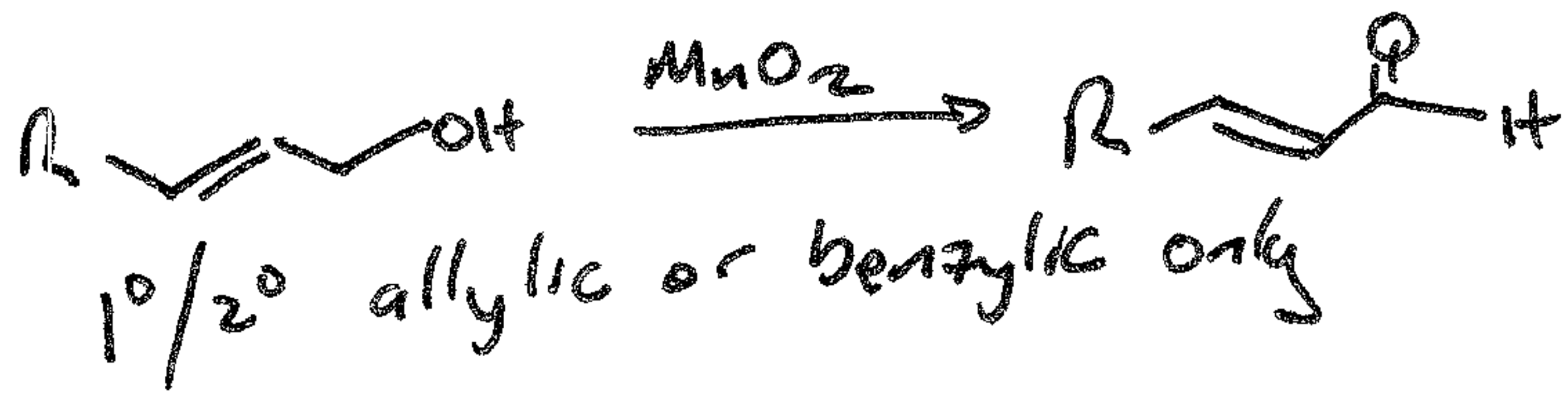


NaOCl = bleach

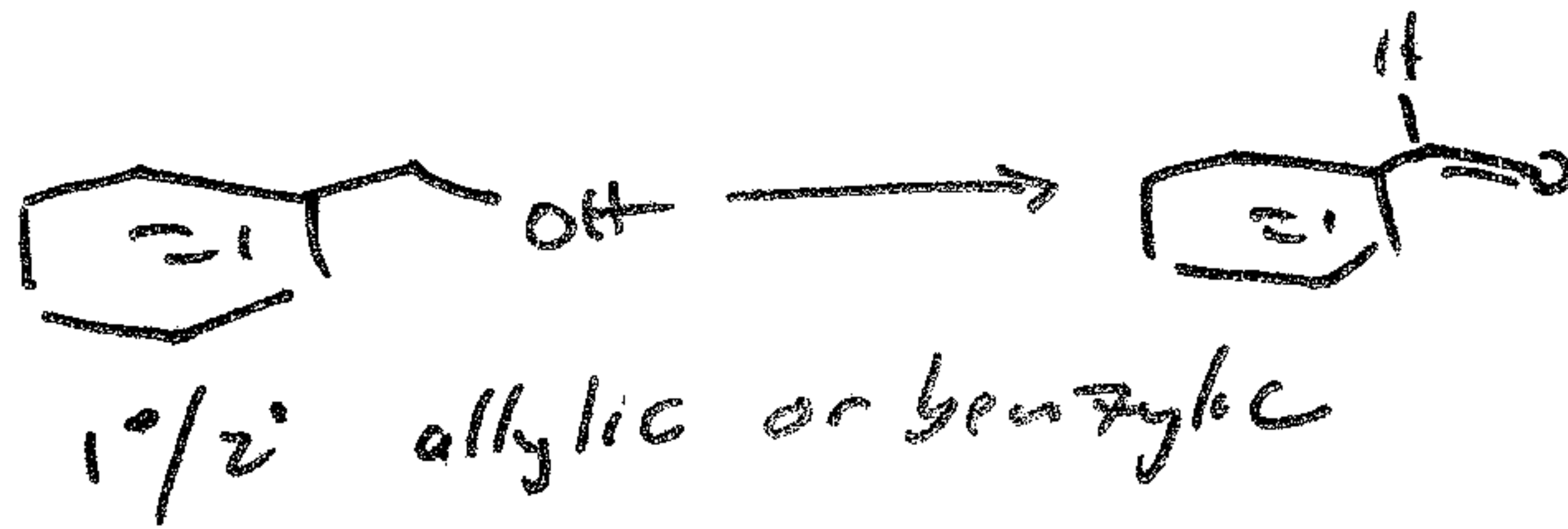
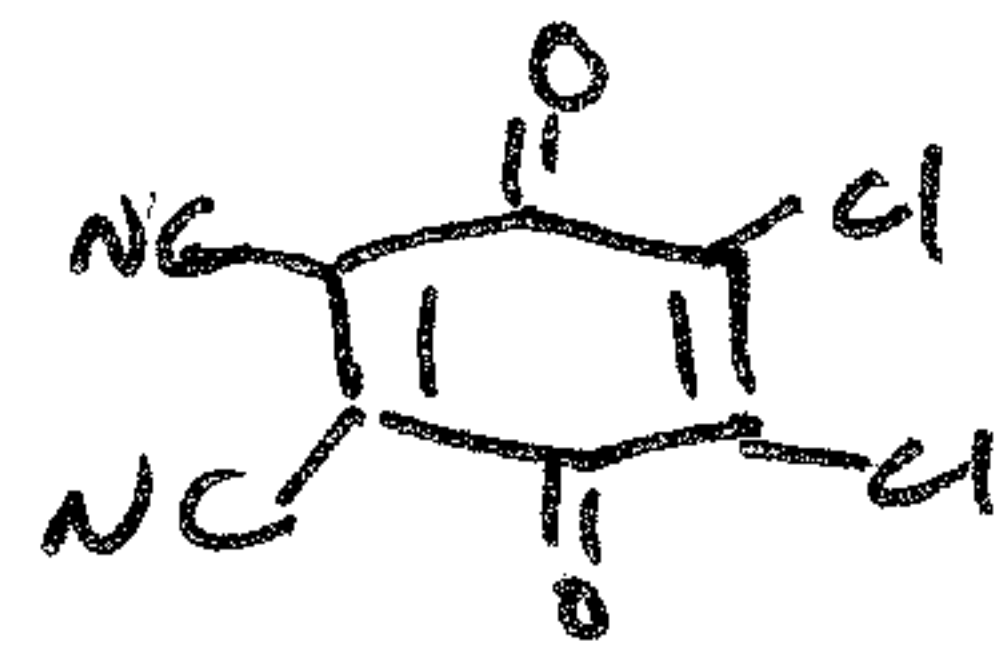


Anelli: JOC, 1987, 52, 2559

MnO₂

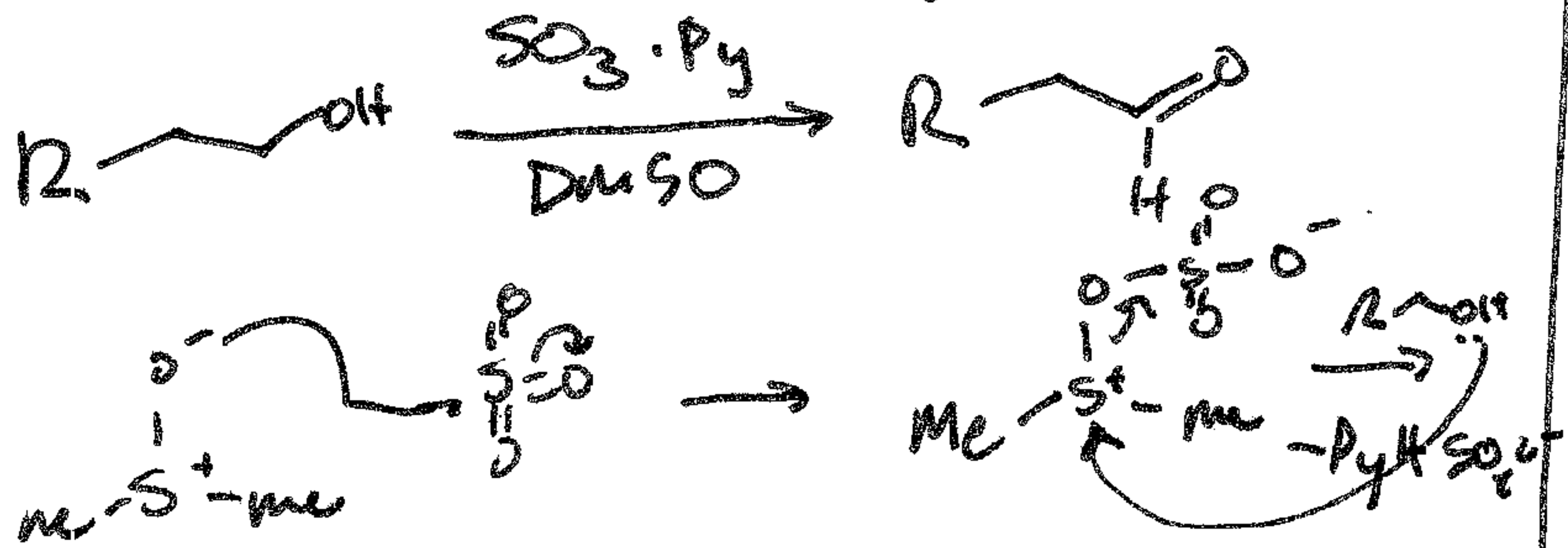


DBQ

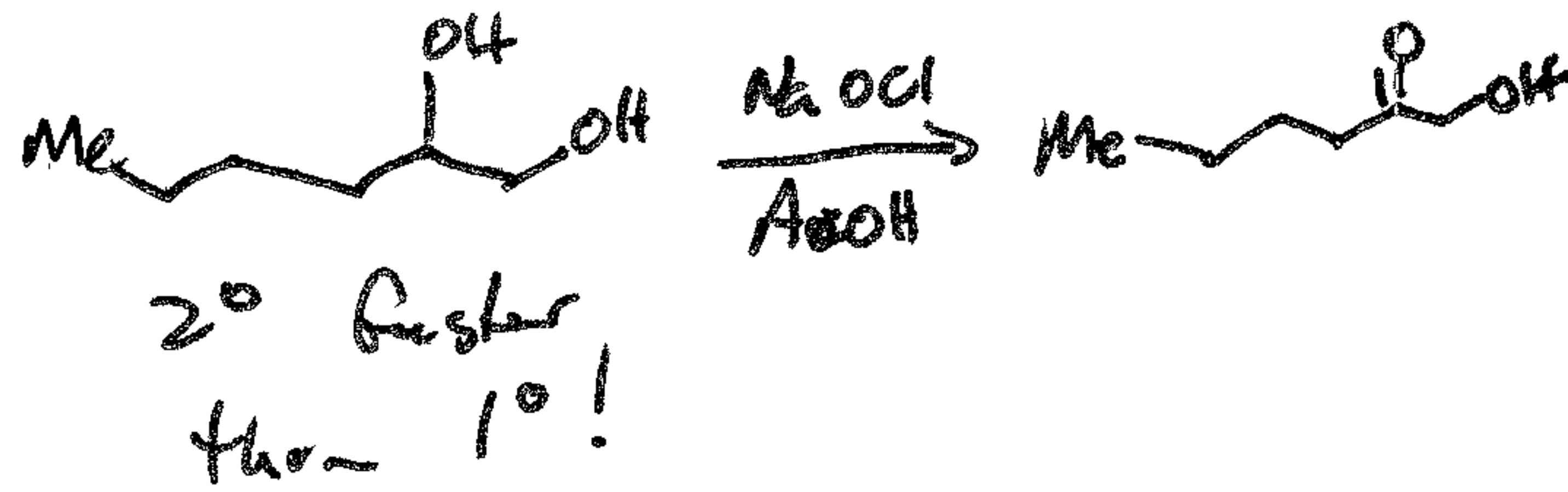


SO₃·Py

Parikh-Doering "Swern Like"

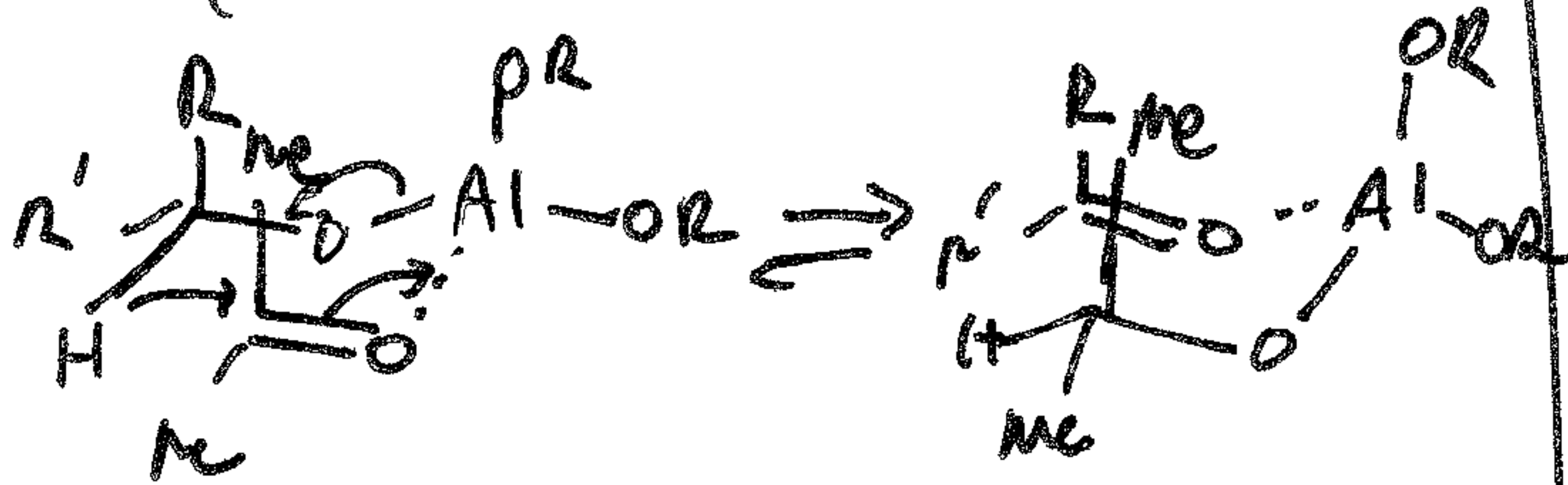
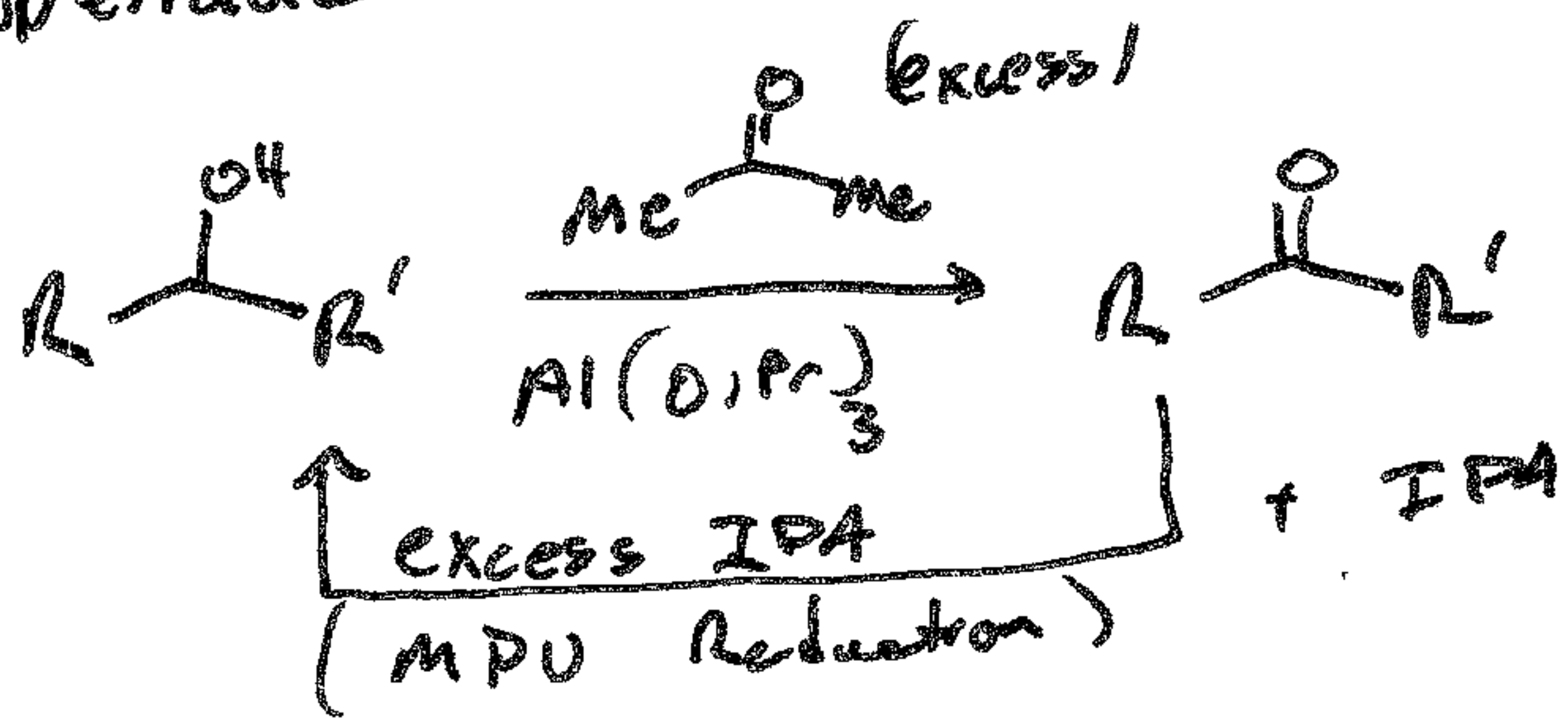


NaOCl (No tempo)

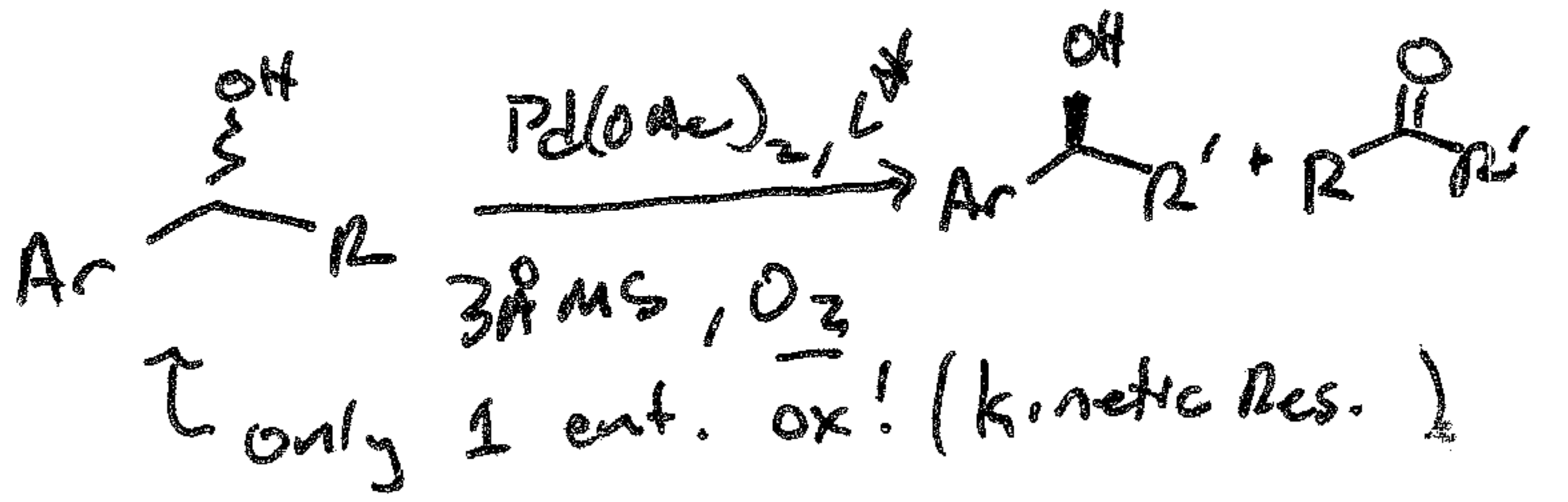


also can use Cu(OAc)_2

Oppenauer Oxidation



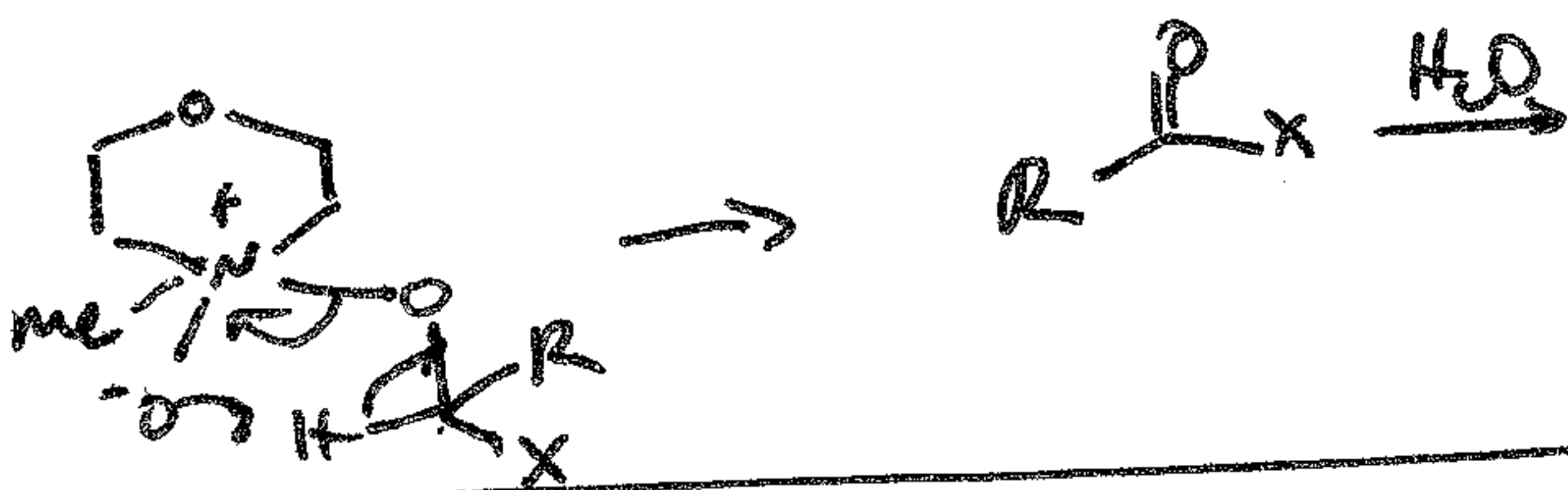
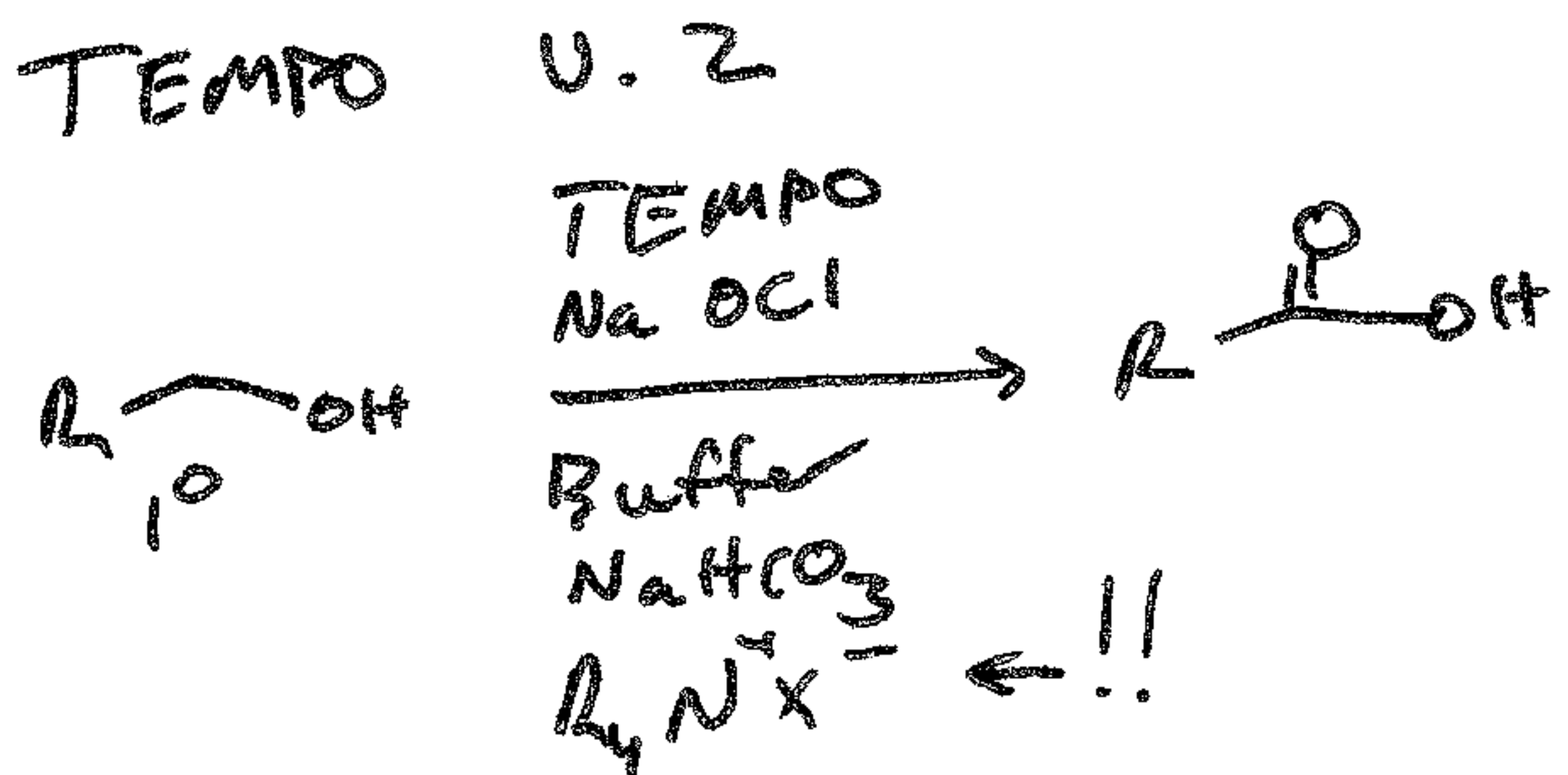
Pd Oxidations



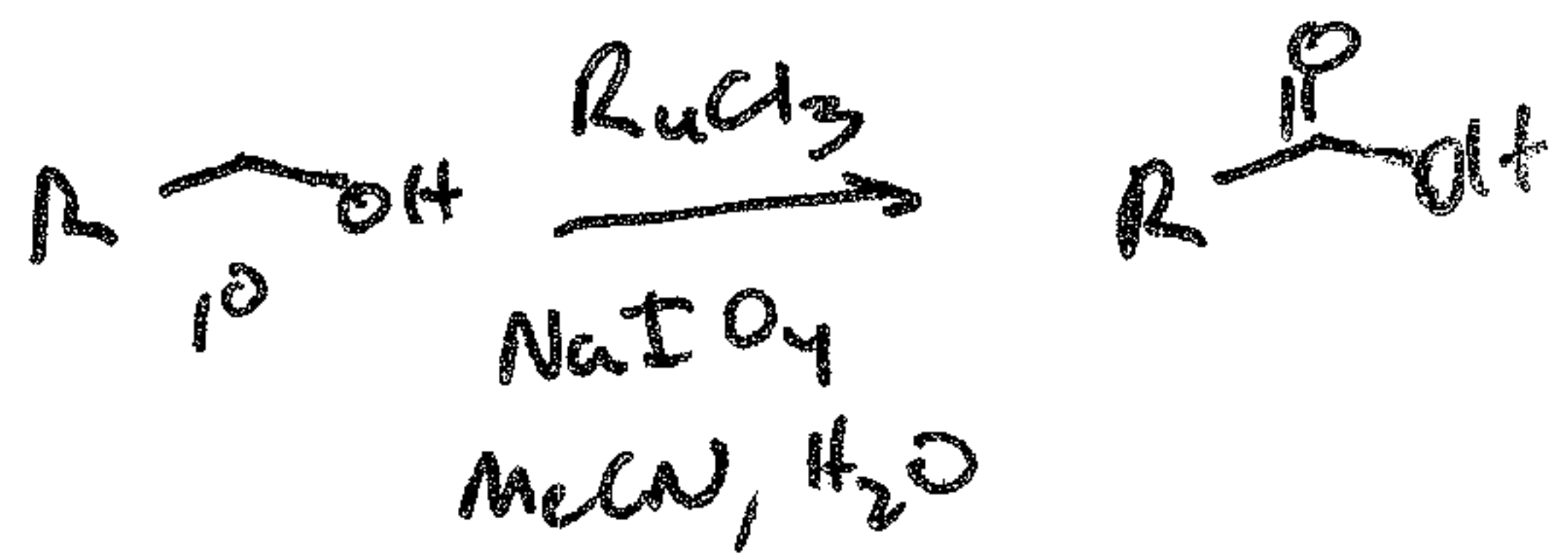
Stoltz, JACS, 2001, 7725
(also see M. Sigman, S. Stahl)

If you want acid...

Jones already discussed

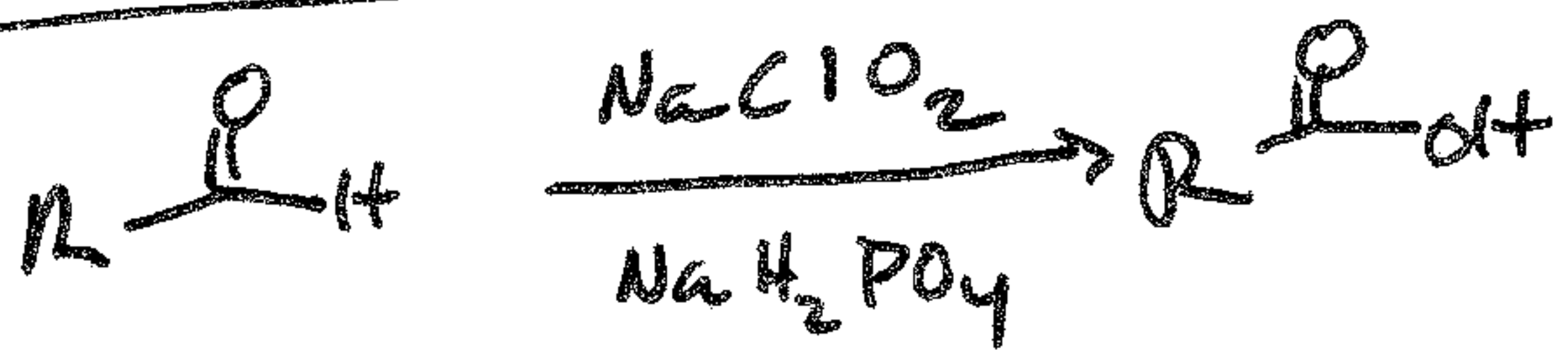
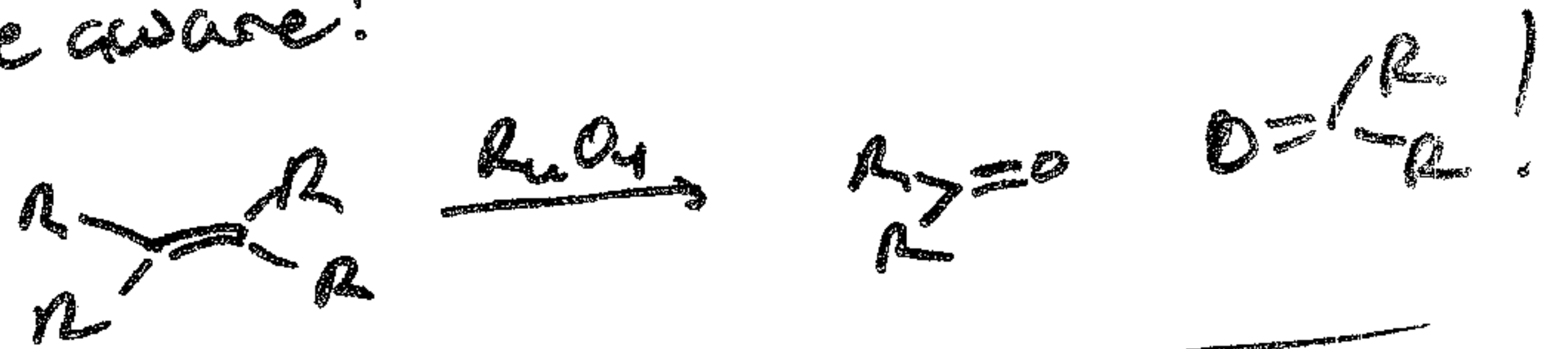


"RuO₄" very strong oxidant!!



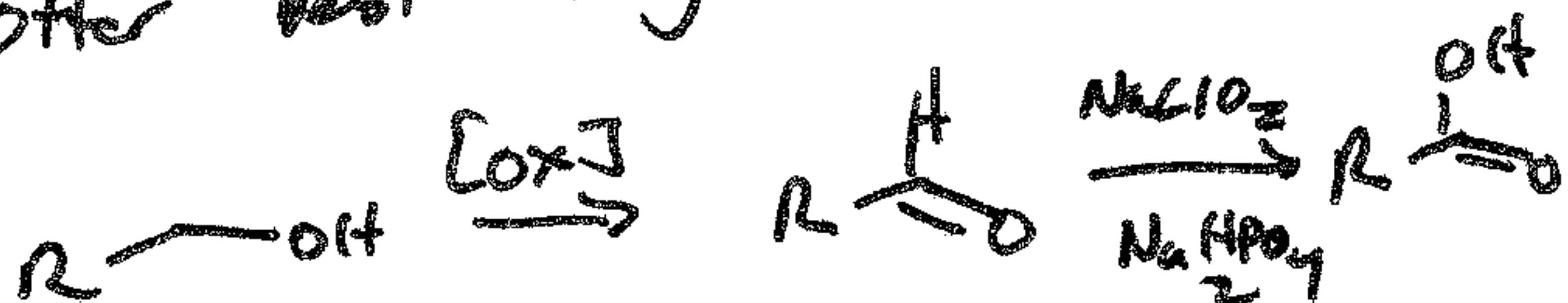
Djerassi JACS, 1953, 75, 3838
Sharpless JOC, 1981, 46, 3936 (MeCN)

Be aware!

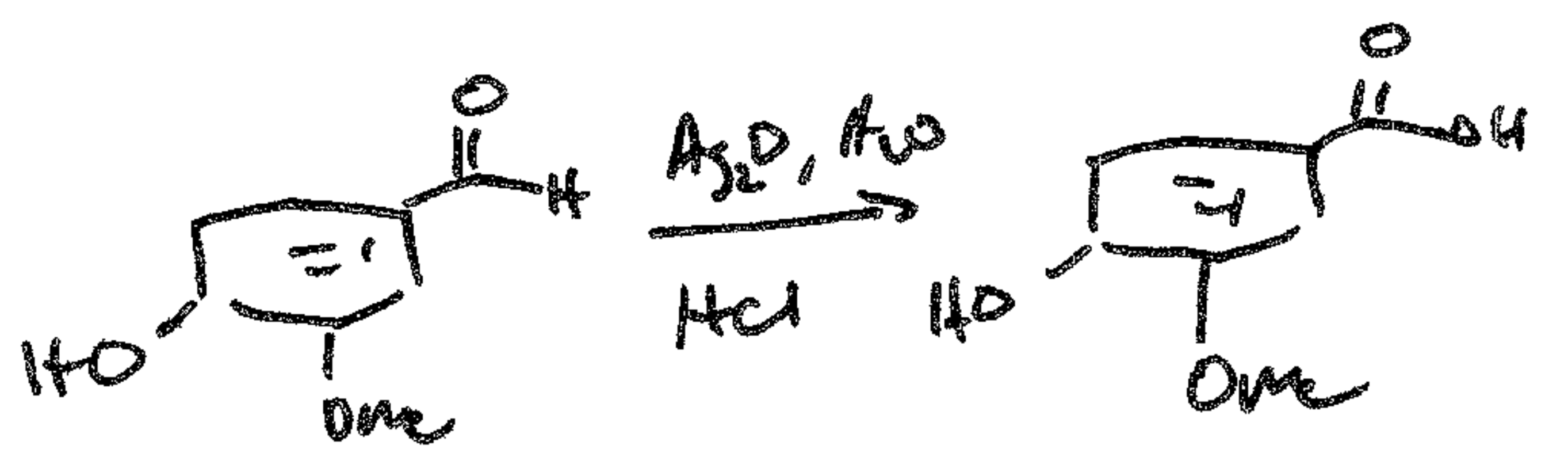


Lindgren Acta Chem Scand. 1973, 27, 888
Kraus JOC, 1980, 45, 4825

offer best way to acid from 1° ROH

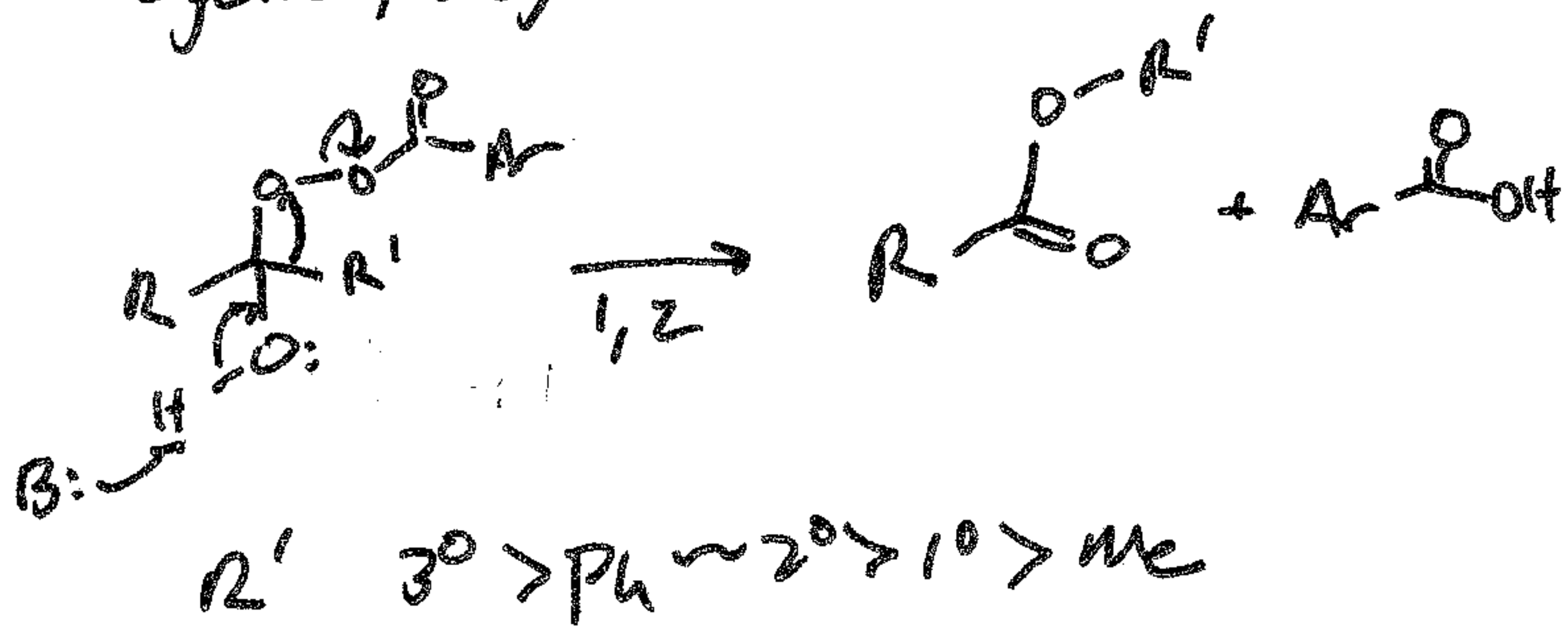
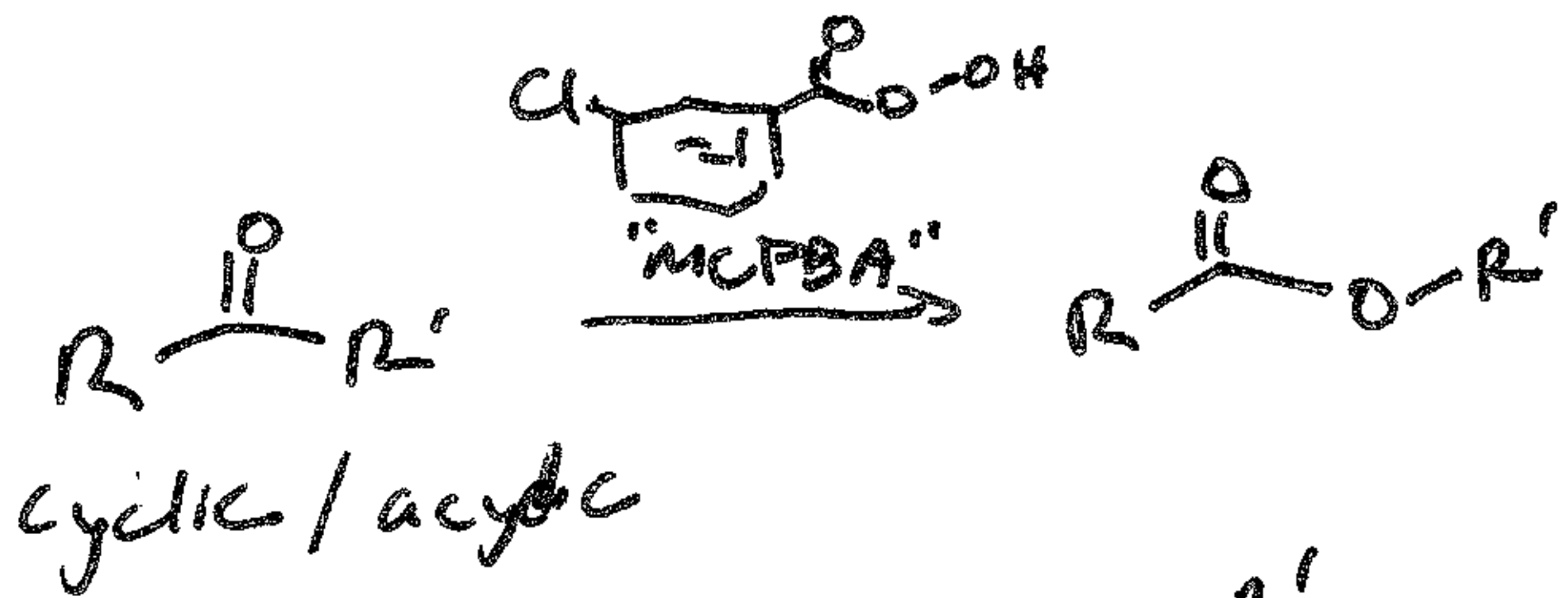


Ag₂O (classic)

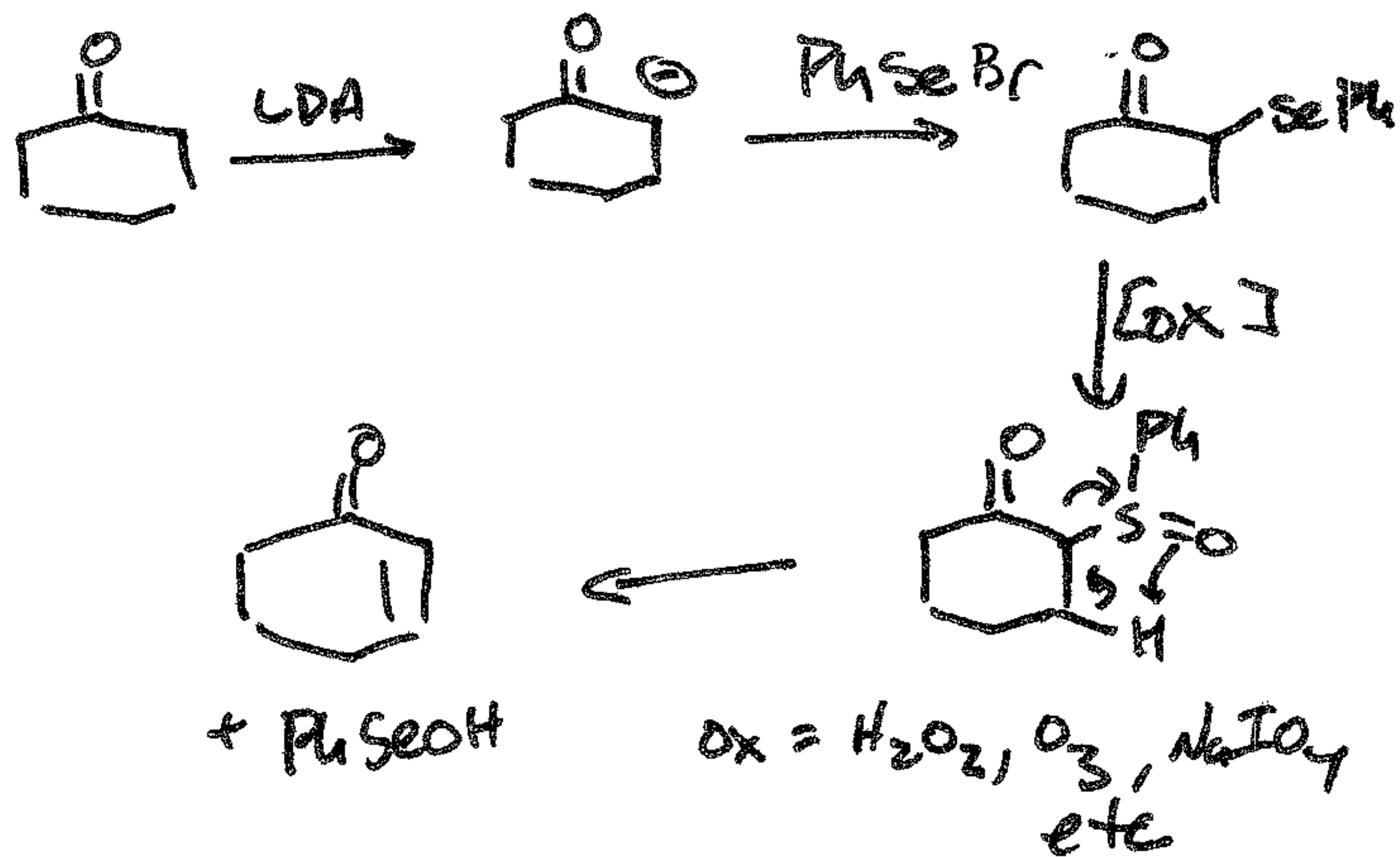


Org Synth. IV, 1963, 972

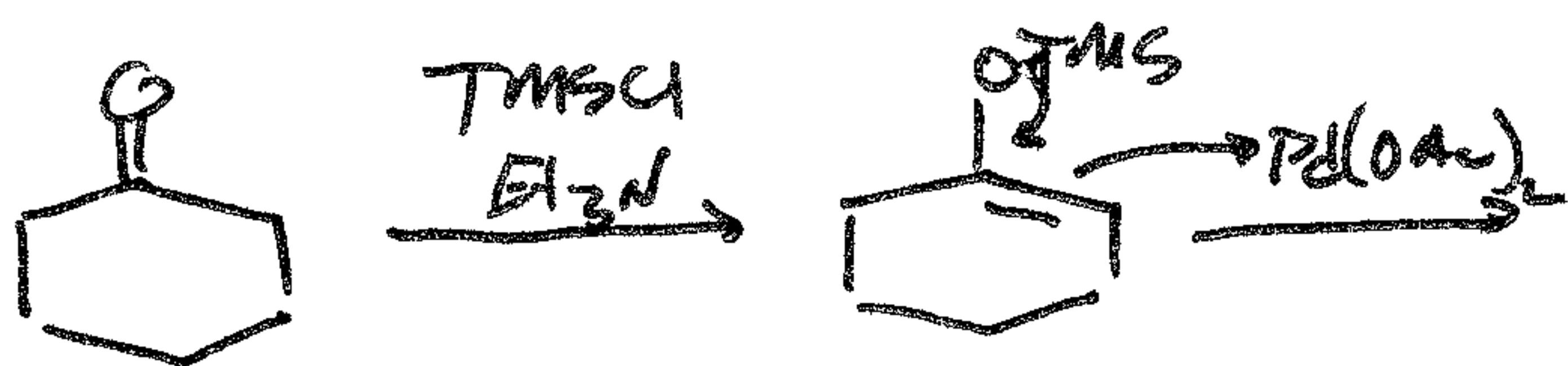
Oxidations of ketones



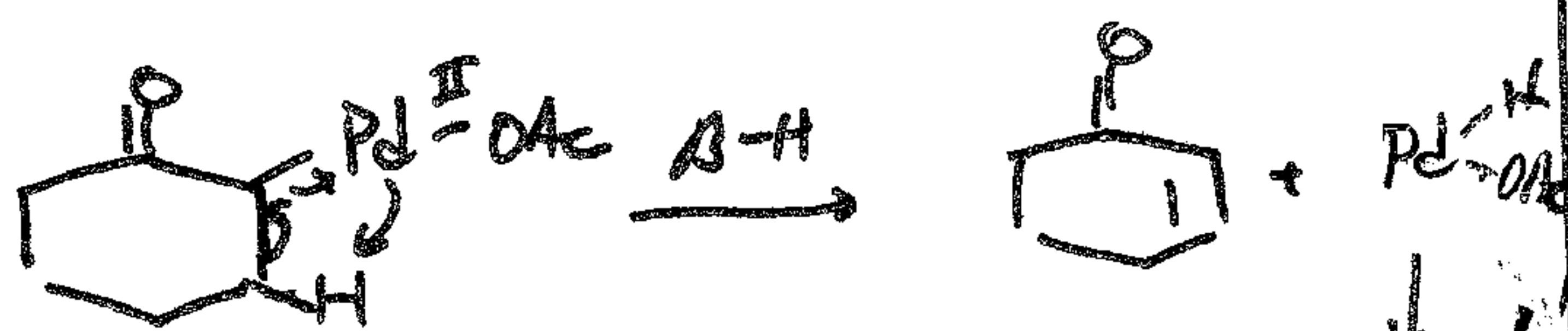
Ketone \rightarrow enone



Saegusa Oxidation JOC, 1978, 43, 1011



Cyclic or acyclic



most often stoichiometric in Pd

but w/ oxidants for Pd(0) can be cat.

IBX

