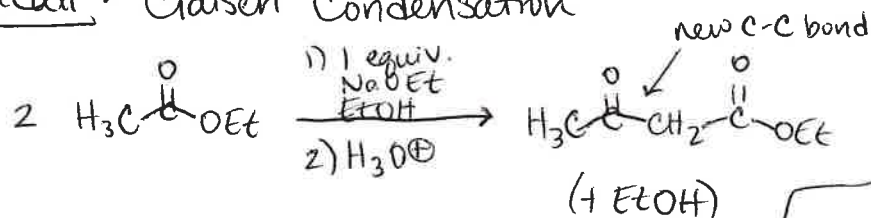


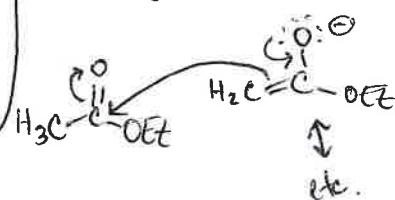
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 Day Monday Date 4/13/15
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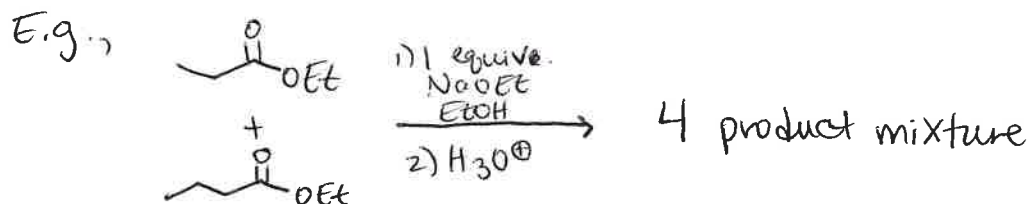
Recall: Claisen Condensation



Key step:

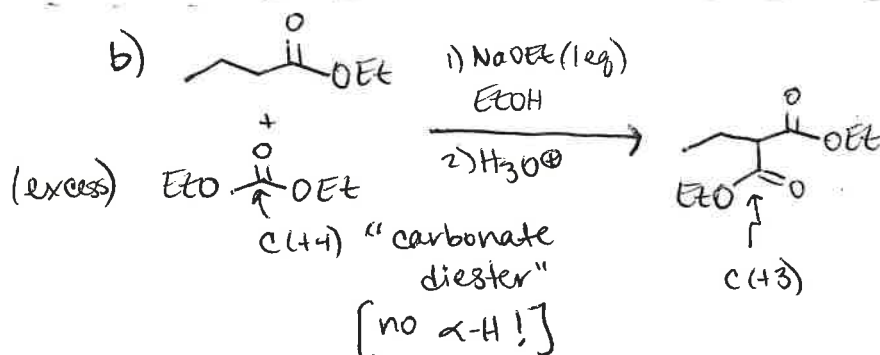
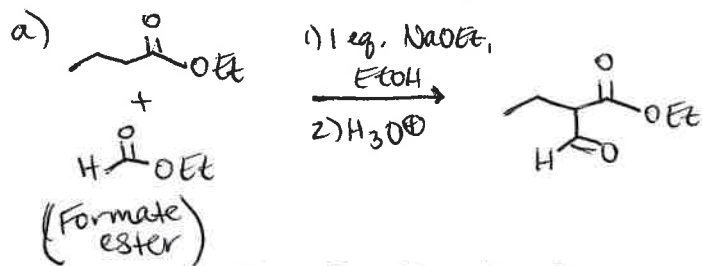


Note: Most "crossed" Claisen condensations are not useful ~~because~~



• Special cases that produce one major product...

1) one reactant does not have an α -H; thus this reactant cannot serve as nucleophile

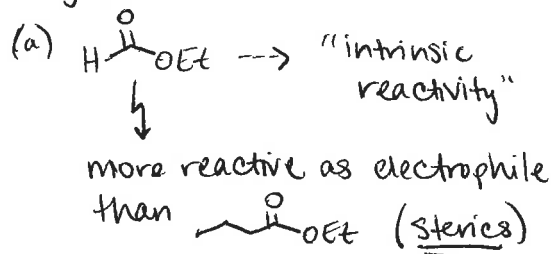


Course Chem 345 Lecturer Prof. Gellman
 Day Monday Date 4/13/15
 Notes Taken By Cassie Jarvis Total # of Pages 4

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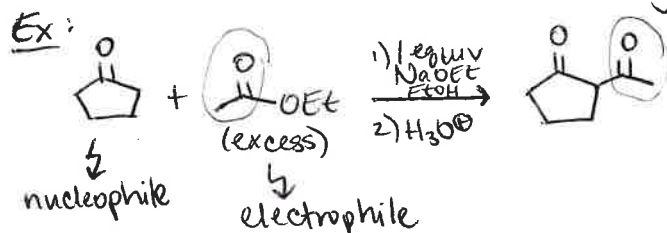
* Origins of selectivity:

- 1) 1 component lacks α H's $\therefore$ not nucleophile
- 2) Why no self-condensation of CC(=O)OCC?



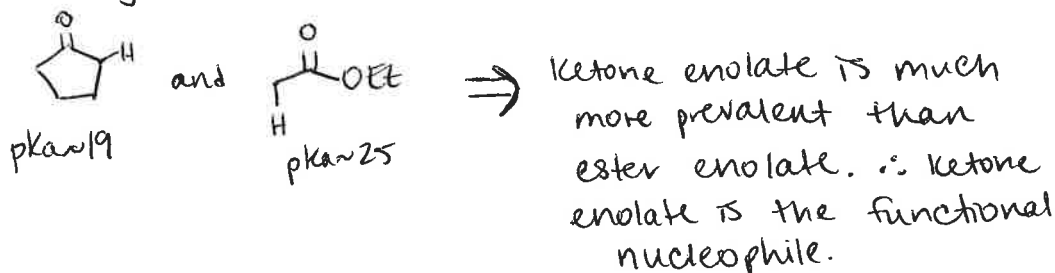
- (b) Use excess of CC(=O)OCC to ensure "proper rxn" (statistical effect)

2) Ketone + ester condensation to generate β -diketone



* Origin of selectivity:

- 1) Ketone self-aldol disfavored by steric repulsions (vide supra)
- 2) Why no ester self condensation?



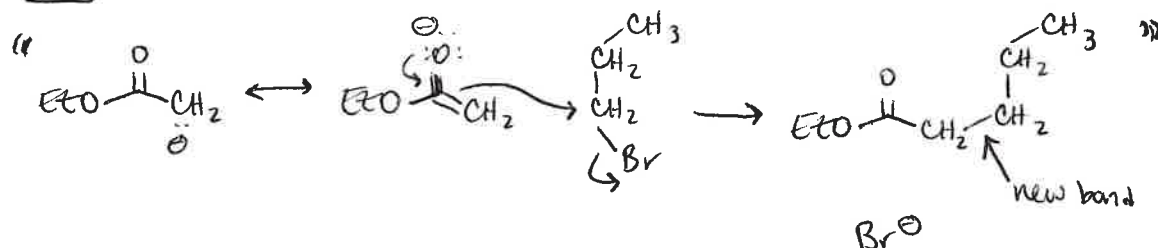
Course Chem 345 Lecturer Prof. Gellman
 Day Monday Date 4/13/15
 Notes Taken By Cassie Jarvis Total # of Pages 4

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⇒ § 22.5 D - Synthetic utility of Claisen condensations

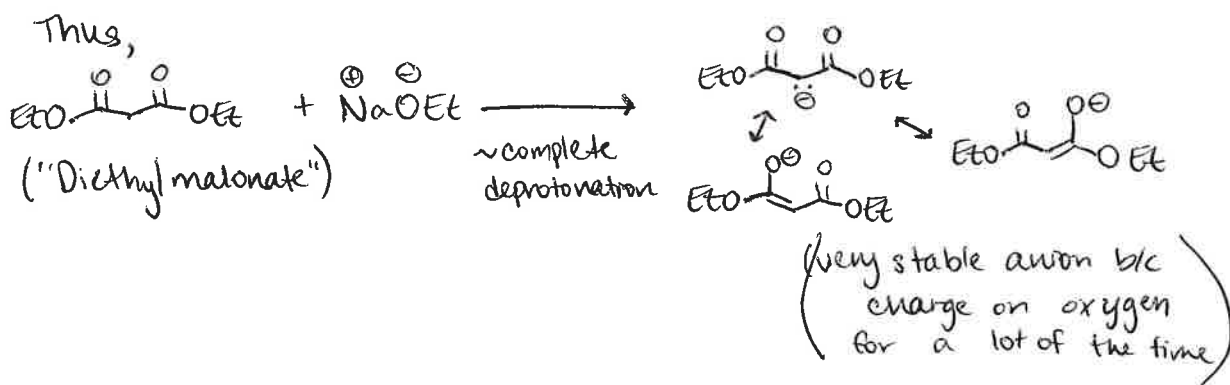
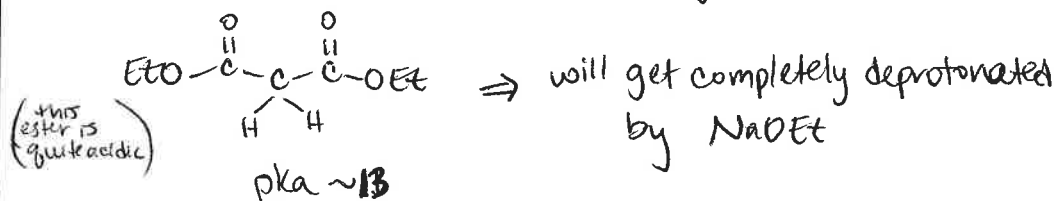
• S_N2 of enolates → introduction of alkyl groups α to carbonyl

* Goal:



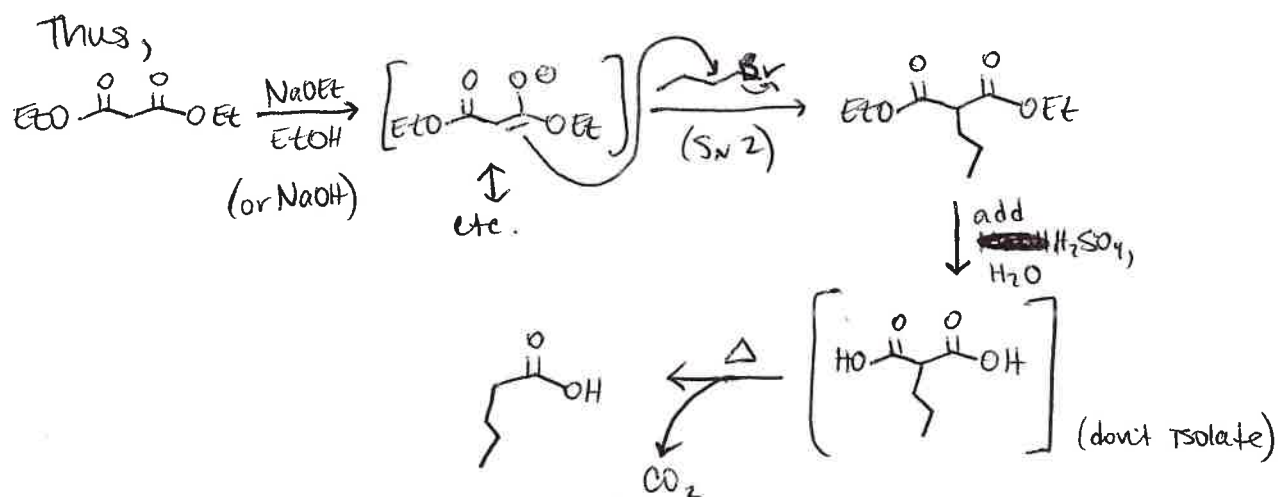
- Problem: If we use NaOEt, generate only low concentration of enolate; Claisen condensation competes w/alkylation

* Solution #1 - "increase acidity"

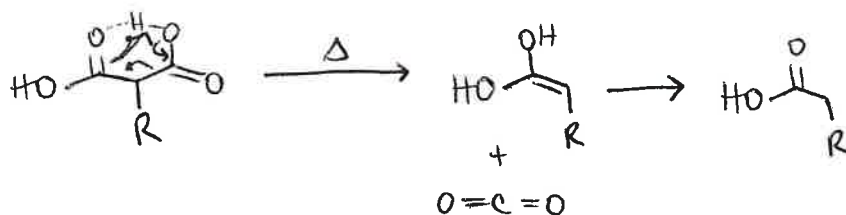


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Note:



(can remove extra carbonyl that gave us acidification @ beginning)

pp. 977-978