

“Challenges are what make life interesting, and overcoming them is what makes life meaningful.”

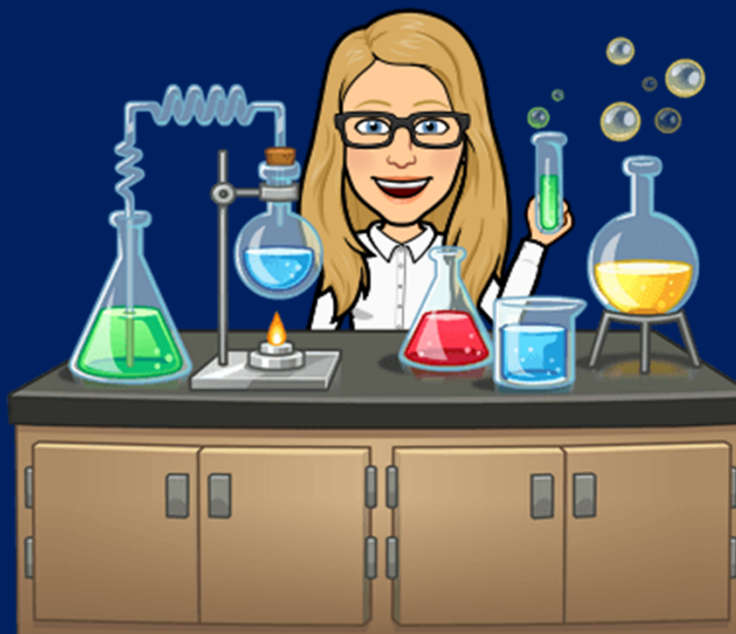
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CHM 3150 Organic Chemistry II
10/23/25

For clicker question voting, go to:
<https://pollev.com/lauriestarke263>



Today's Ch. 21 Topics: Aldol & Claisen Reactions

**Daily
To-Do**

**Flipped
Lectures**

Step 2

- Read Klein-Starkey Sections:

- 21.4 Aldol Reaction
- 21.5 Claisen Condensations

- Work through SkillBuilders:

- 21.2 Drawing Enolates
- 21.3 Aldol Predict/Mechanism
- 21.4 Crossed Aldol
(problems 21.16-21.29)

Enols & Enolates Part 2

46 minutes

skeleton notes pages 21-5 through 21-9

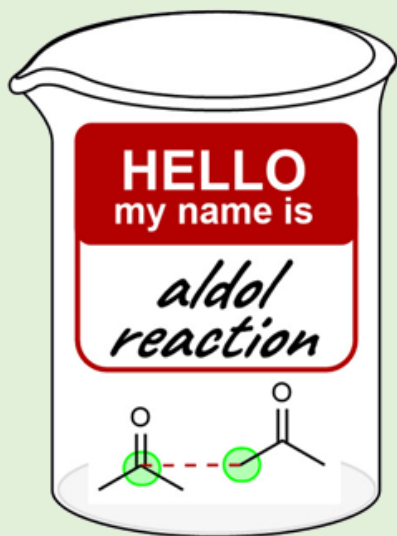
Ch. 21 Part 2

✓ Watch

✓ Read

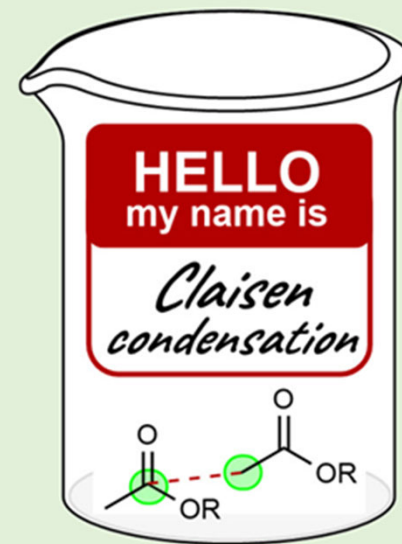
✓ Practice

Flipped Lecture



Aldol Condensation	39:38
Aldol Condensation	39:39
Aldol Mechanism	41:26
Aldol Mechanism: In Base, Deprotonate First	41:27
Aldol Mechanism	45:28
Mechanism for Loss of H ₂ O	45:29
Collapse of CTI and β -elimination Mechanism	47:51
Loss of H ₂ O is not E2!	48:39
Aldol Summary	49:53
Aldol Summary	49:54
Base-Catalyzed Mechanism	52:34
Acid-Catalyzed Mechanism	53:01
Acid-Catalyzed Aldol Mechanism	54:01
First Step: Make Enol	54:02
Acid-Catalyzed Aldol Mechanism	56:54
Loss of H ₂ O (β elimination)	56:55
Crossed/Mixed Aldol	60:55
Crossed/Mixed Aldol & Compound with α H's	60:56
Ketone vs. Aldehyde	62:30
Crossed/Mixed Aldol & Compound with α H's Continue	63:10
Crossed/Mixed Aldol	65:21
Mixed Aldol: control Using LDA	65:22
Crossed/Mixed Aldol Retrosynthesis	68:53
Example: Predict Aldol Starting Material (Aldol Retrosynthesis)	68:54
Claisen Condensation	72:54
Claisen Condensation (Aldol on Esters)	72:55
Claisen Condensation	79:52
Example 1: Claisen Condensation	79:53
Claisen Condensation	82:48
Example 2: Claisen Condensation	82:49

Aldol Reactions & Claisen Condensation



Ch. 21 Free Red Ink Homework

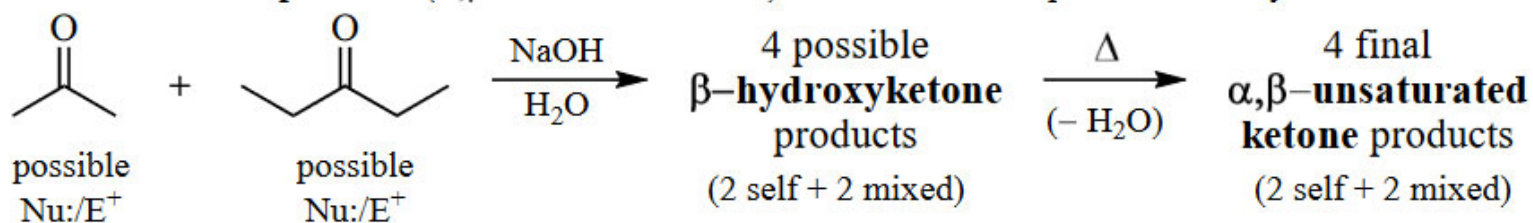
Organic Chemistry II CHM 3150, Dr. Laurie S. Starkey, Cal Poly Pomona

"Messy Aldol" Homework

Name: _____

Before working on this homework, review Mechanisms 21.4, 21.6 and work on SkillBuilders 21.2, 21.3.

Predict the possible aldol products for the following reaction (**provide 8 structures**). Choose one of the **mixed aldol final products** (α,β -unsaturated ketone) and show the complete base-catalyzed mechanism.



*draw the four
Aldol Reaction
products
(β -hydroxyketones)*

Δ

Up Next: More Enols/Enolates!

Step 3

- Read Klein 21.6 **Conjugate Addition Reactions**
- Work through **Conceptual Checkpoints** 21.30, 21.31, 21.34, 21.35

[Enols & Enolates Part 3](#)

31 minutes

skeleton notes pages 21-10 through 21-13




Step 4

- Read Klein-Starkey Section 21.7 **Synthesis Strategies**

[Enols & Enolates Part 4](#)

19 minutes

skeleton notes page 21-14

- Work through **SkillBuilders**:
 -  21.6 Which Enolate Reaction to Use?
 -  21.7 Acetoacetate Ester Synthesis
 -  21.8 Malonic Ester Synthesis (problems 21.36 - 21.43)

- *FYI (not on exam) Stork Enamine Synthesis, SkillBuilder 21.5 (problems 21.32 & 21.33)*

Ch. 21 Part 3 & 4

- ✓ Watch
- ✓ Read
- ✓ Practice