



Aldol Condensation

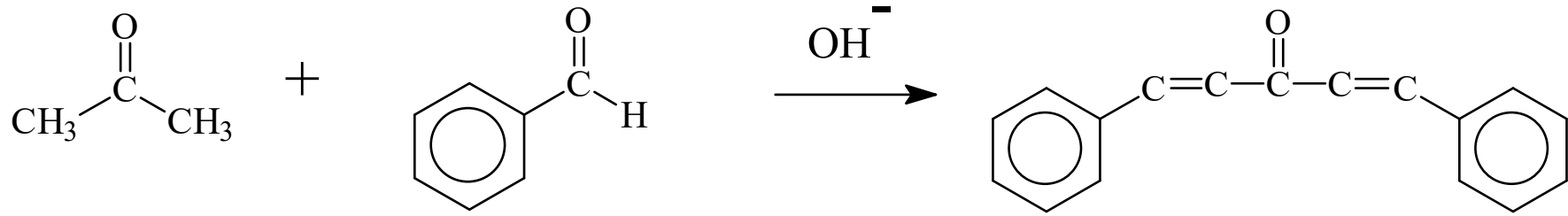
醛酮縮合反應

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實驗方程式

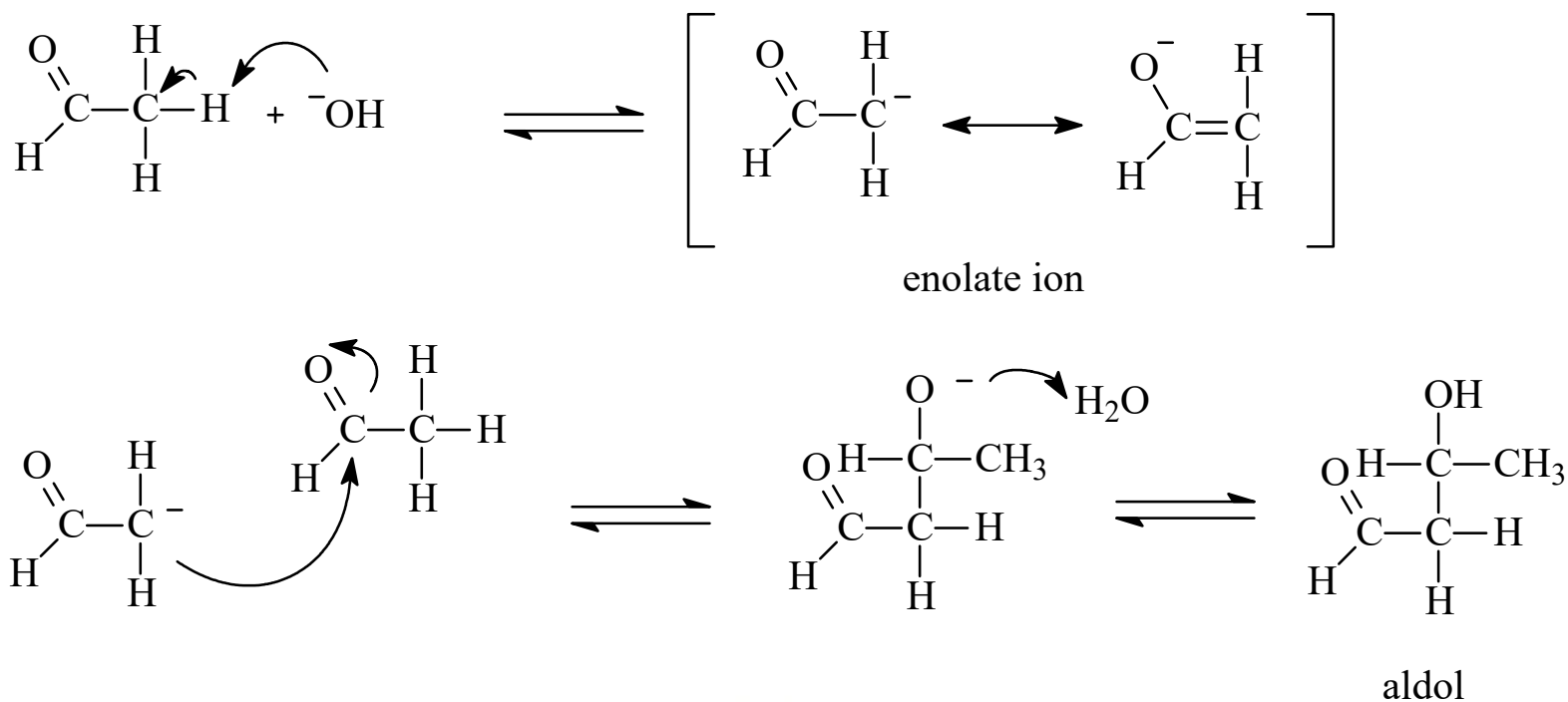




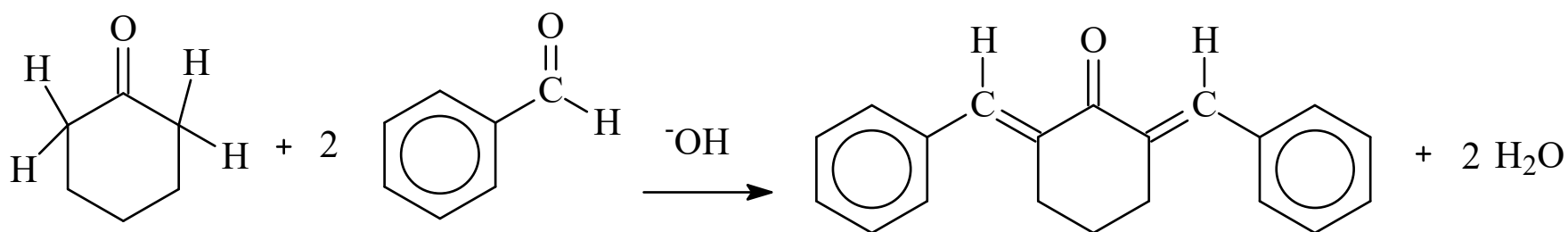
**α -H的carbonyl化合物，
其 α -H具有弱酸性，其pKa如下**

	$\text{CH}_3\overset{\text{O}}{\parallel}\text{CCH}_3$	$\text{CH}_3\overset{\text{O}}{\parallel}\text{CH}$	$\text{CH}_3\overset{\text{O}}{\parallel}\text{CCH}_2\overset{\text{O}}{\parallel}\text{CCH}_3$	$\text{CH}_3\overset{\text{O}}{\parallel}\text{COH}$
pKa	20	17	9	5

在鹼性中，會使 α -H解離而形成enolate，enolate為一強親核試劑(nucleophile)，會攻擊醛或酮的碳原子形成aldol。

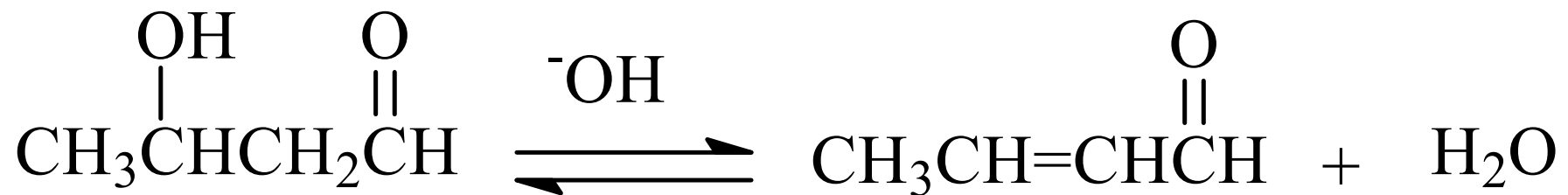


不同種的兩個化合物進行
Aldol Condensation時稱為
cross aldol condensation

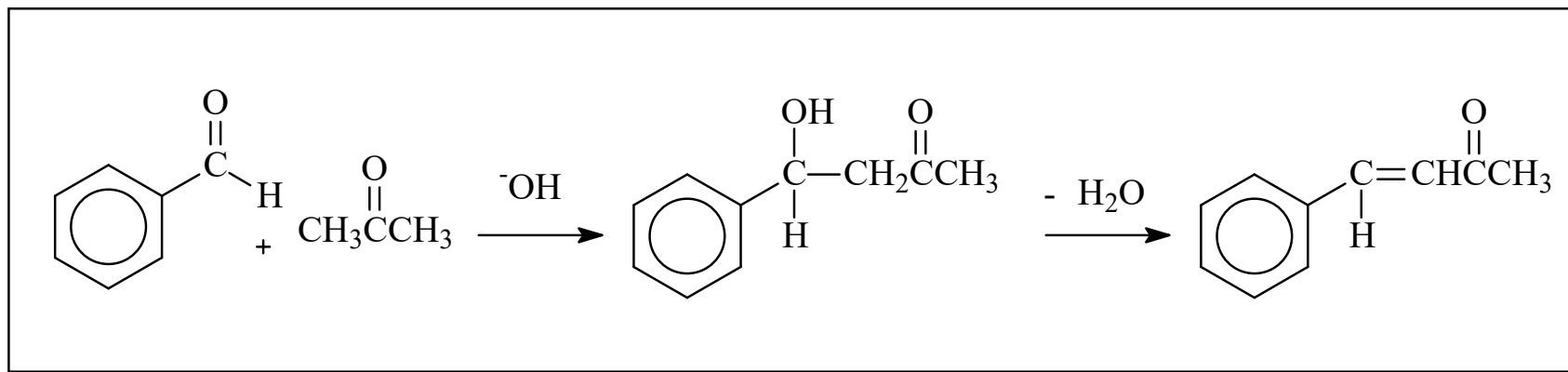




aldol為一 **β -hydroxy aldehyde**或**ketone**
，也有機會形成具共軛系統的，
 α ， β -unsaturated carbonyl化合物



芳香性醛與非芳香性酮進行的縮和稱為
Claisen-Schmidt縮和



0.86mL(17 d) benzaldehyde in a 50mL beaker

↓(ice-water bath)

add 0.30mL (6d) acetone

↓(ice-water bath)

add 5mL 95% ethanol

↓(ice-water bath)

add 2mL 40% NaOH_(aq) dropwise

↓(ice-water bath)

stir 15 mins in ice-water bath (yellow solid form)

↓

stir 5 mins in r.t.

add 10mL ice water stir 5 mins



suction filter (wash with 20mL dist. H₂O)



collect solid



oven dry



calculate the % yield

1. 繳交產物並告知產物淨重。
2. 實驗問題：1, 2

環己酮理論產量 $0.0049\text{mol} \times 274 = 1.358\text{g}$

丙酮 $4.08 \times 10^{-3}\text{mol} = 0.858\text{g}$



The End !

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