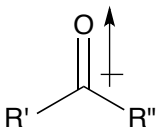
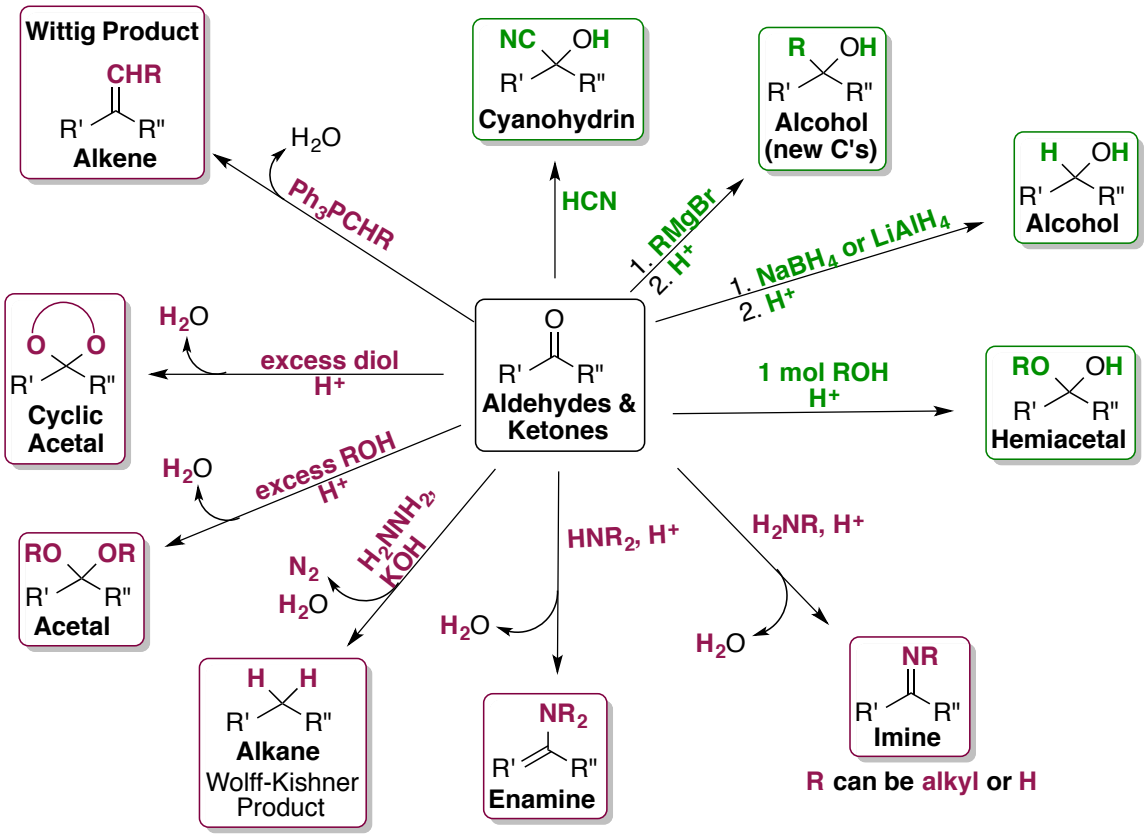
ALDEHYDES & KETONES

NUCLEOPHILES (*R = alkyl, aryl, vinyl, allyl, and in some cases H*)	**ELECTROPHILES**
C-nuc: Grignard Reagents, **RMgBr** Cyanide, **NC:$^-$** Wittig Reagents, **Ph_3P=CHR**	 **Aldehydes** R' = H R" = alkyl, aryl, vinyl, allyl **Ketones** R', R" = alkyl, aryl, vinyl, allyl
O-nuc: Water, **H_2O** Alcohols and diols, **ROH**	
N-nuc: **NH_3**, Amines, **H_2NR, HNR_2**	
H-nuc: **"H:$^-$"** from **$NaBH_4$** or **$LiAlH_4$**	

REACTION SUMMARY STARBURST

NUCLEOPHILIC ADDITIONS & NUCLEOPHILIC ADDITION/DEHYDRATION

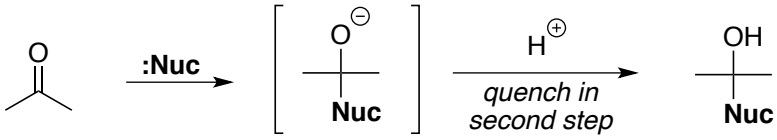


BASICS FOR REACTION MECHANISMS OF ALDEHYDES & KETONES

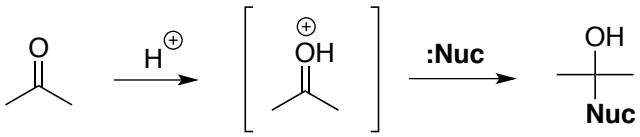
(ADD THE ARROWS)

NUCLEOPHILIC ADDITION

Basic conditions

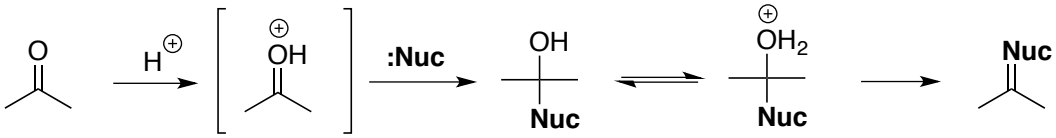


Acidic conditions



NUCLEOPHILIC ADDITION/DEHYDRATION

Acidic conditions



THE COMBO!

(NUCLEOPHILIC ADD'N/DEHYDRATION) + (NUCLEOPHILIC ADD'N) = ACETAL MECHANISM