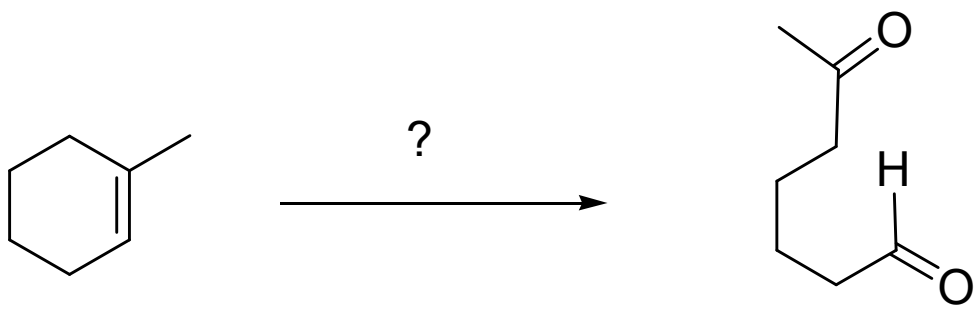
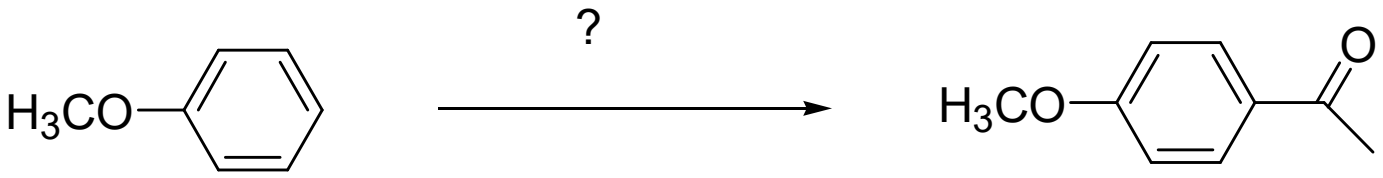
ALDEHYDY, KETONY

Syntéza aldehydů a ketonů



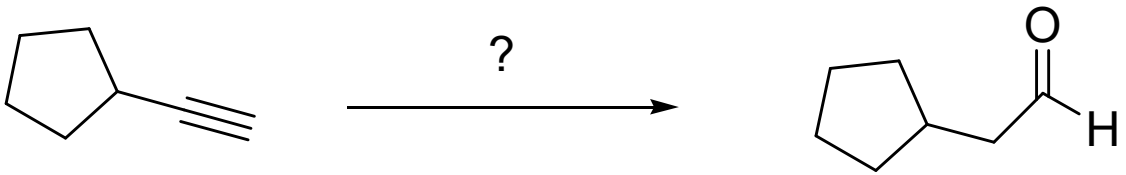
1) O_3
2) Zn, H^+

Syntéza aldehydů a ketonů

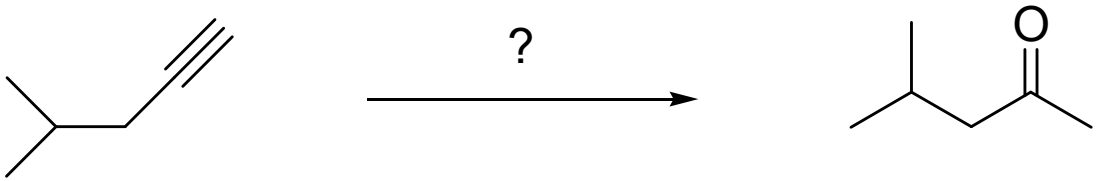


1) $(CH_3CO)_2O$, $AlCl_3$, CS_2
2) HCl, H_2O

Syntéza aldehydů a ketonů

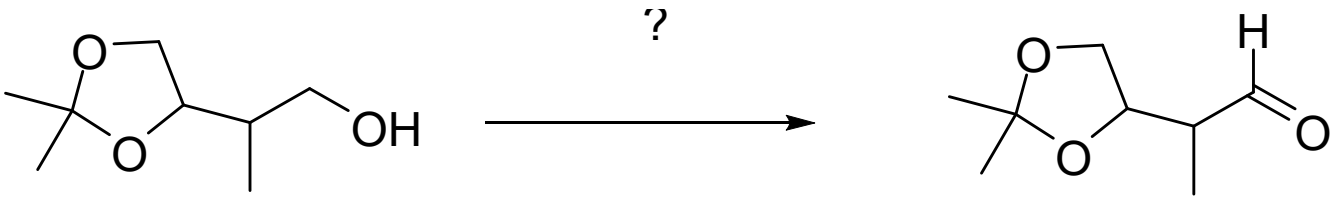


1) BH_3
2) H_2O_2, NaOH

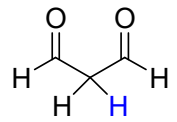
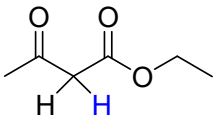
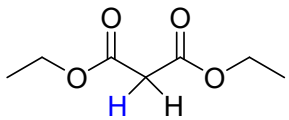
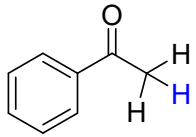
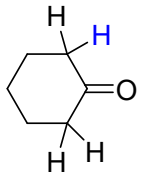
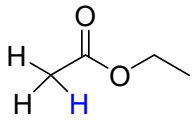


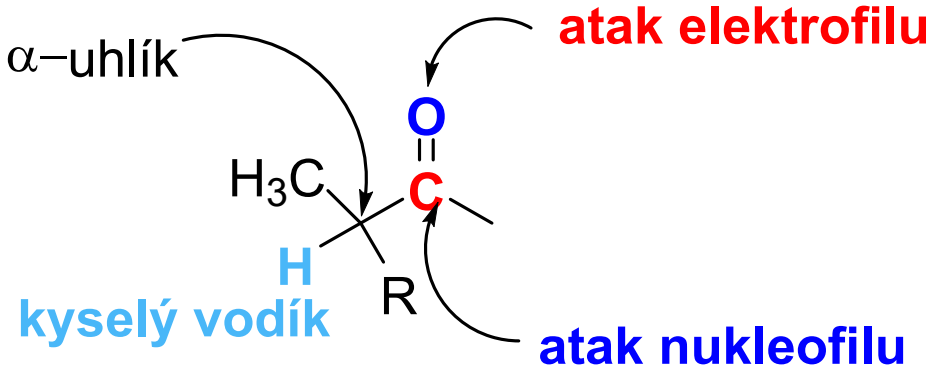
Hg^{2+}, H^+, H_2O

Syntéza aldehydů a ketonů

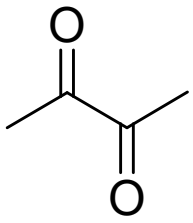


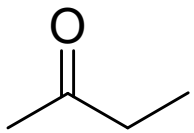
PCC, CH_2Cl_2

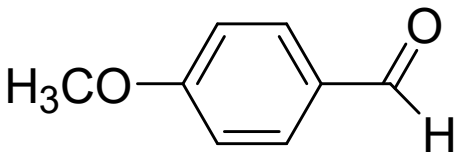
	pK_a
	5,0
	10,7
	12,9
	15,8
	16,7
	24,5

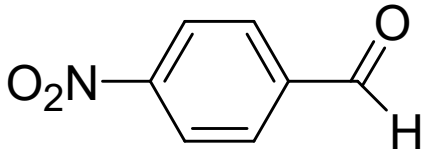


Která ze sloučenin v uvedených dvojicích je reaktivnější při adiční reakci na karbonyl



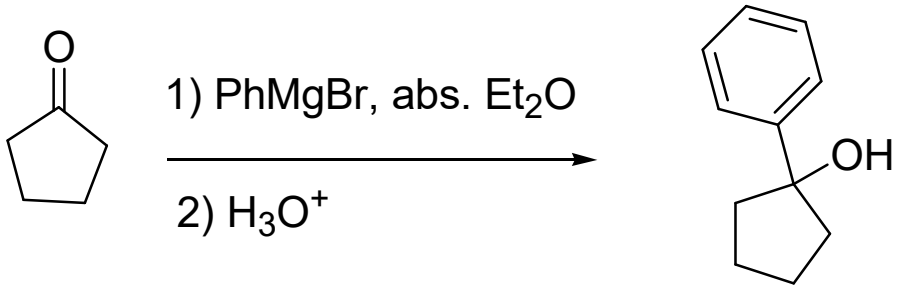


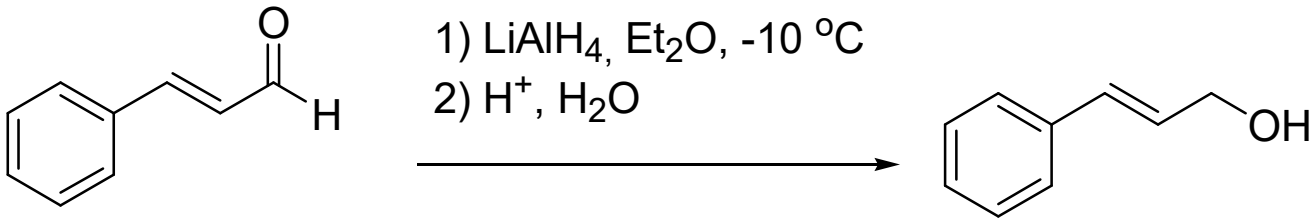


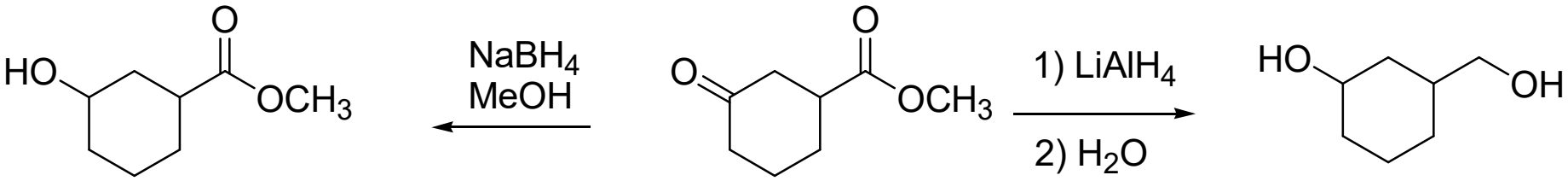


TYPY REAKCÍ KARBONYLOVÉ SKUPINY

1)Nukleofilní adice

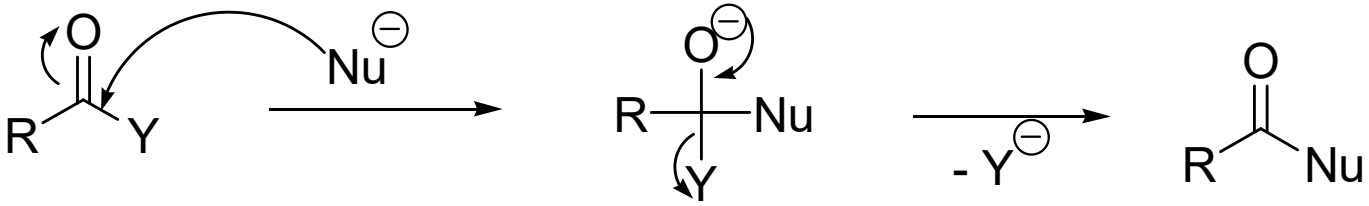




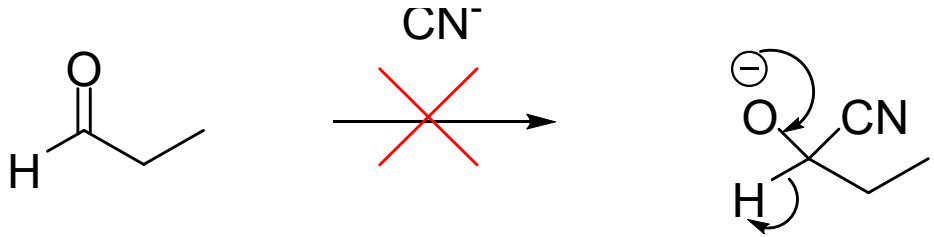


TYPY REAKCÍ KARBONYLOVÉ SKUPINY

2) Nukleofilní acylová substituce

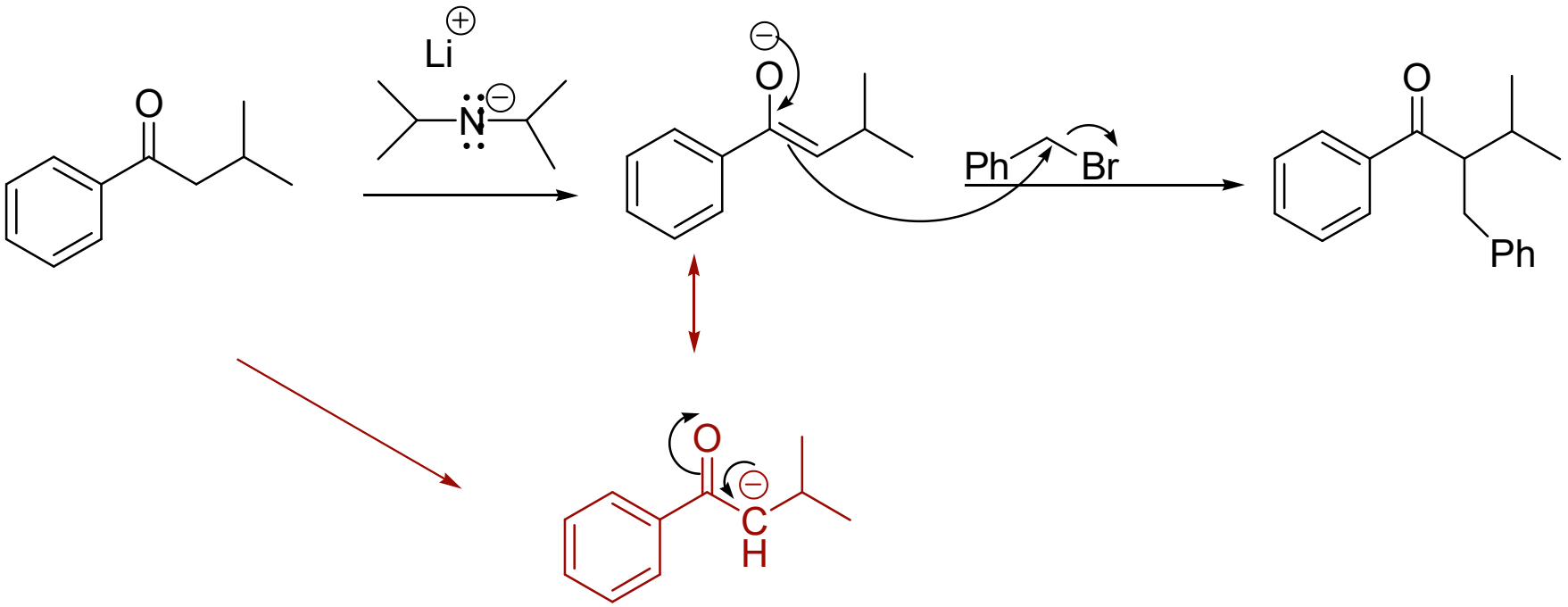


ne u aldehydů a ketonů vysvětlete !!!



TYPY REAKCÍ KARBONYLOVÉ SKUPINY

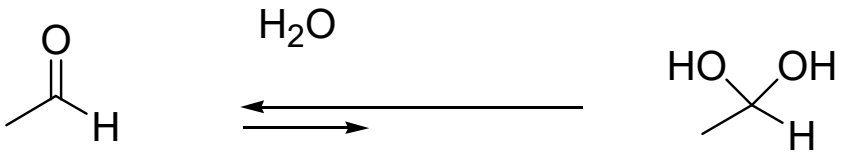
3) Substituce na alfa-uhlíku

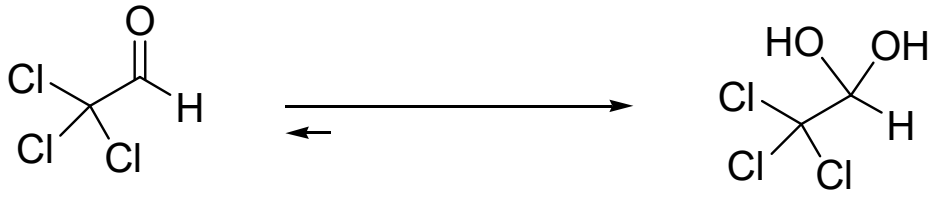


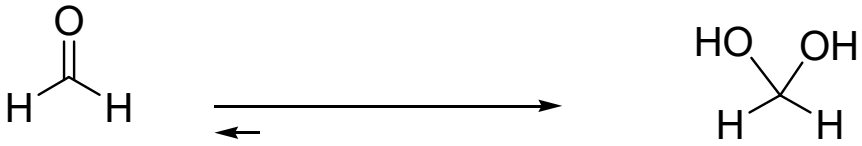
»TYPY REAKCÍ KARBONYLOVÉ SKUPINY

4) Reakce typu aldolizace – reagují dvě molekuly karbonylové sloučeniny

Tvorba hydrátů

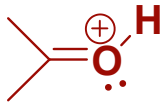




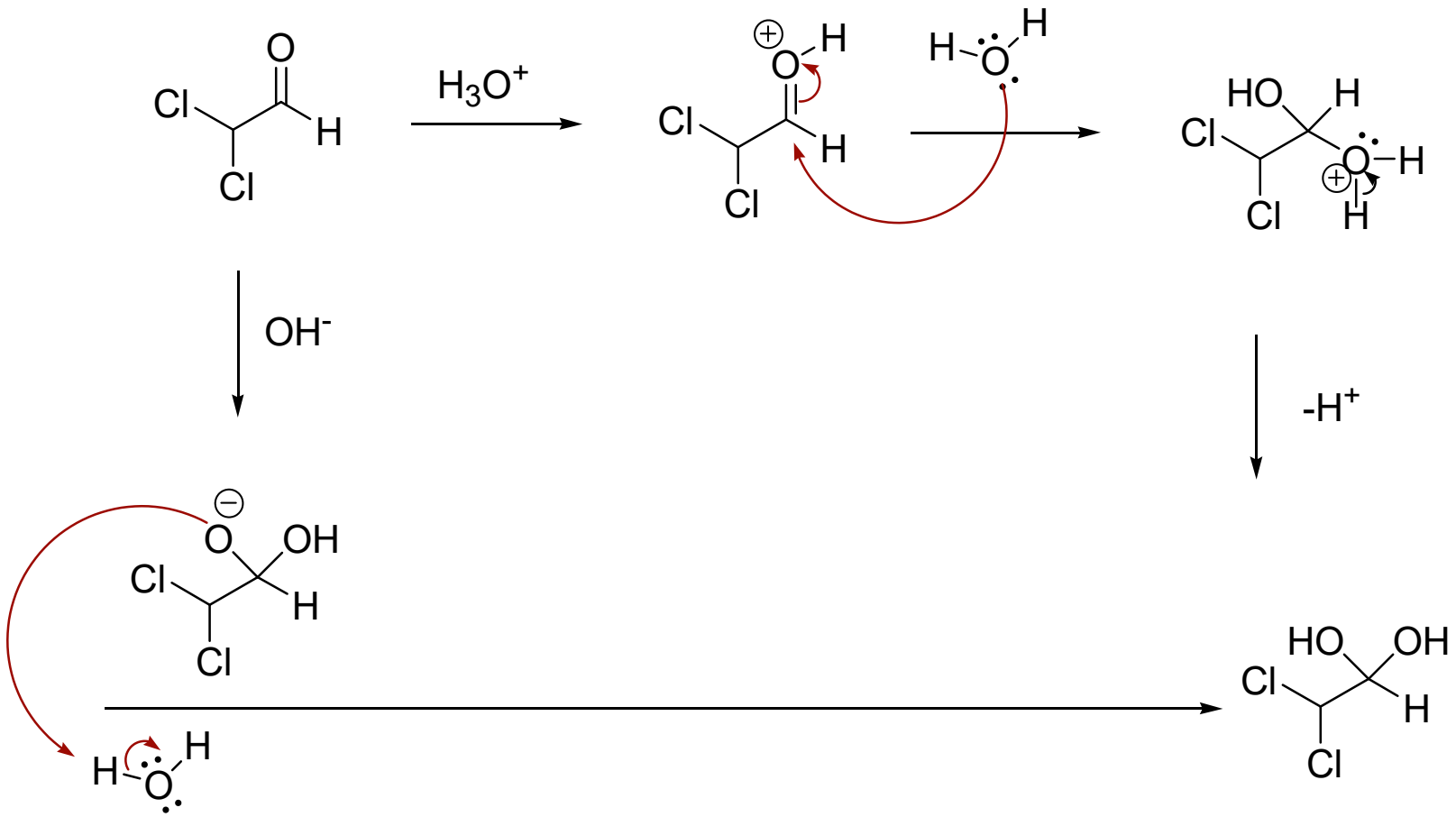


více než 99,9 %

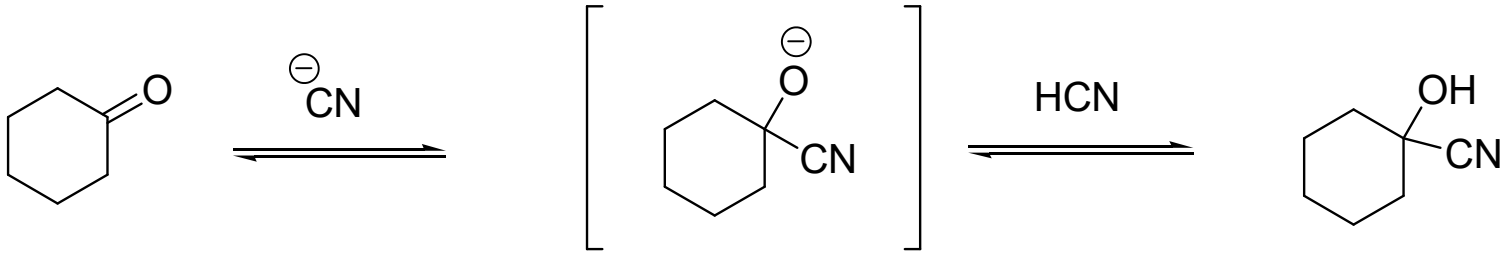
hydratace může být kysele i bazicky katalyzovaná

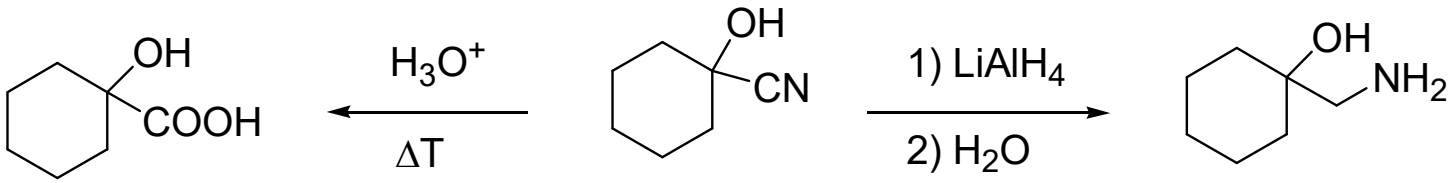


pK_a = - 8

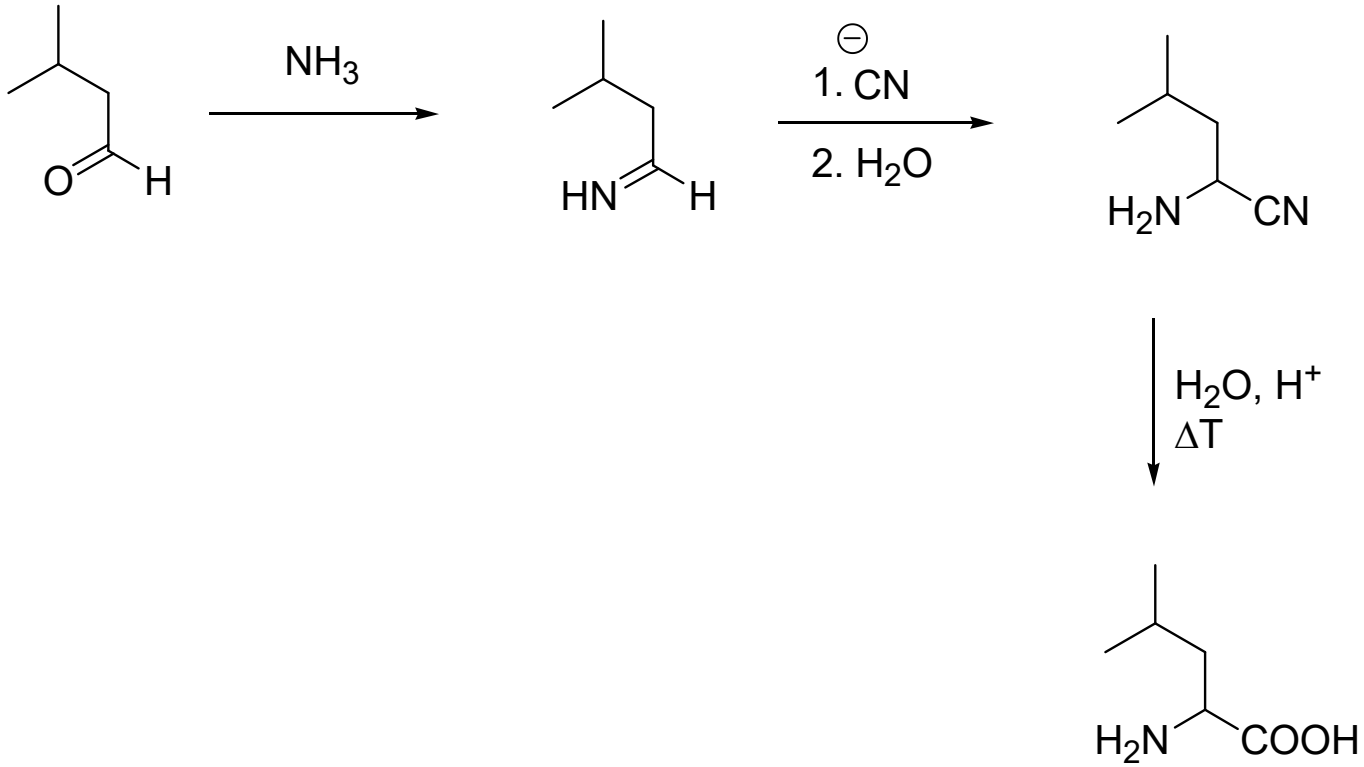

Cl
O
H
Cl
H_3O^+
Cl
O
H
H
H
O
H
Cl
HO
H
Cl
O
H
Cl
H
OH^-
$-H^+$
O
OH
Cl
H
Cl
H
O
H
HO
OH
Cl
H
Cl

Tvorba kyanhydrinů

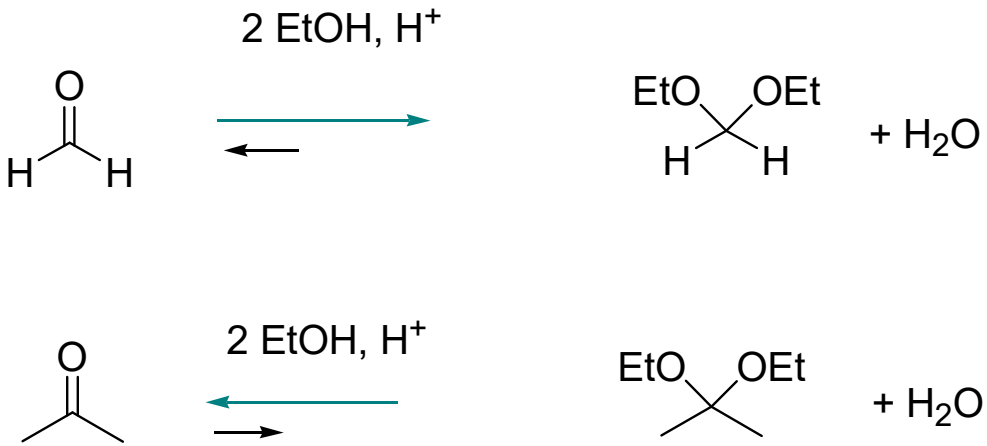


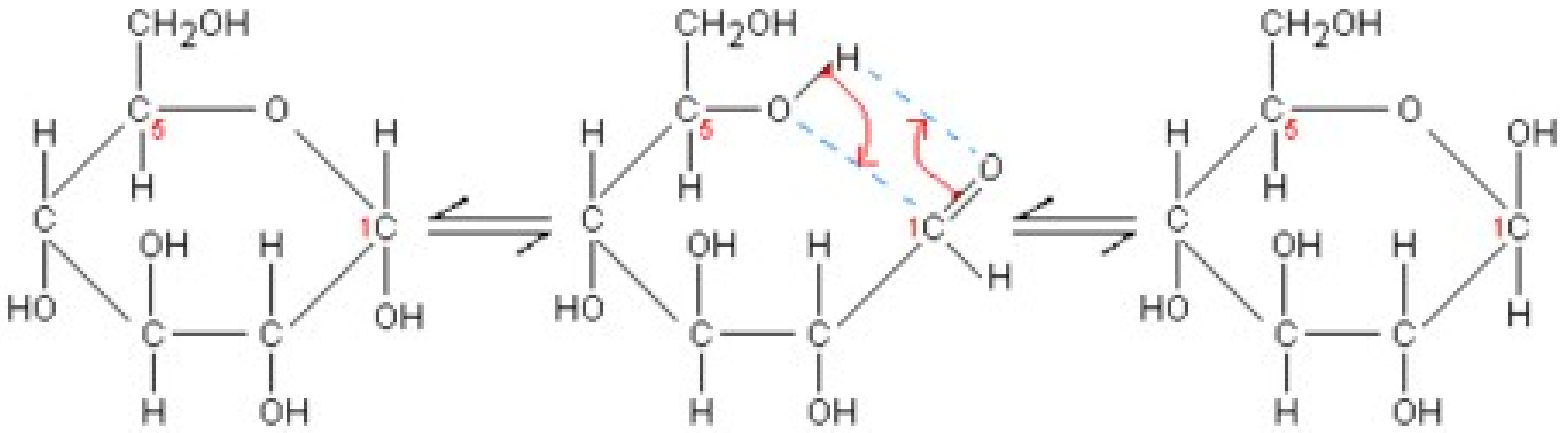


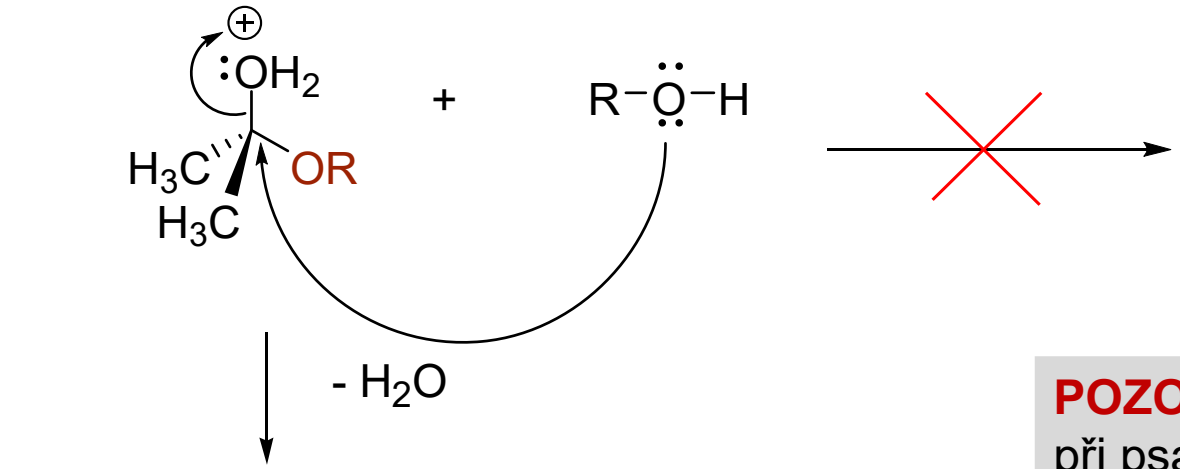
Laboratorní syntéza aminokyselin



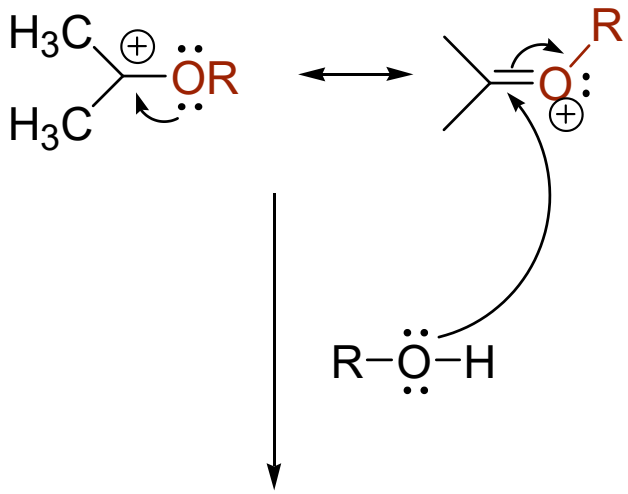
Tvorba hemiacetalů a acetalů

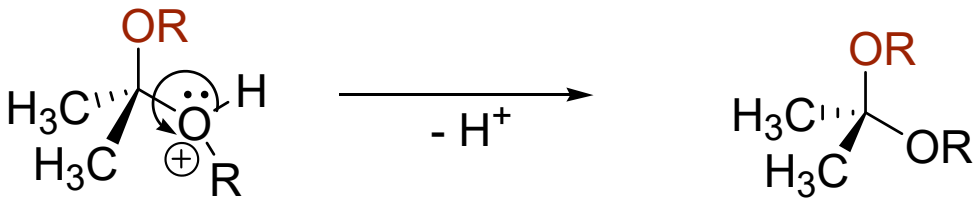



α-D-glukopyranosa
D-glukosa
(acyklická forma)
β-D-glukopyranosa

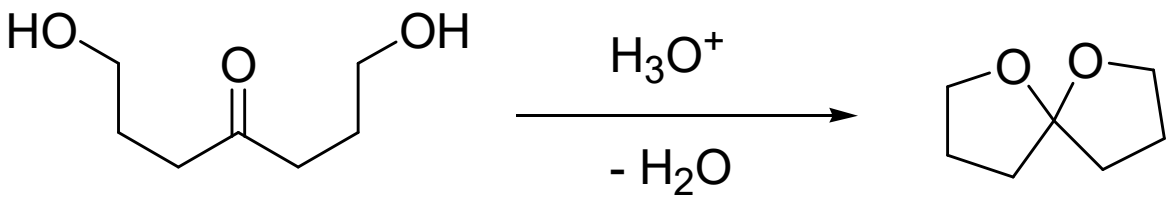


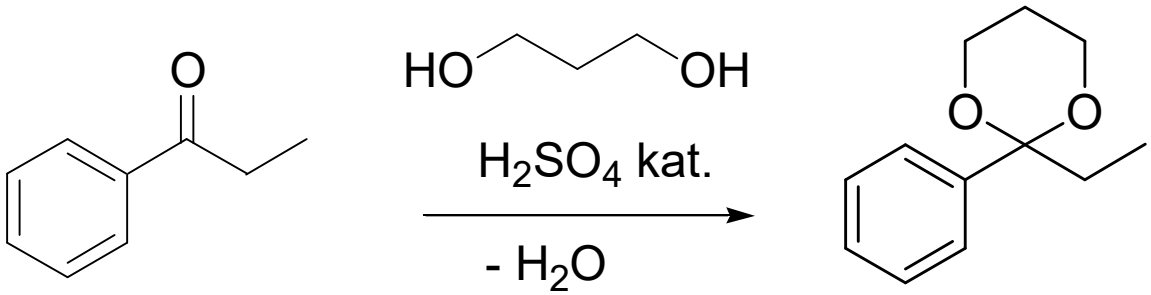
POZOR
při psaní mechanismu



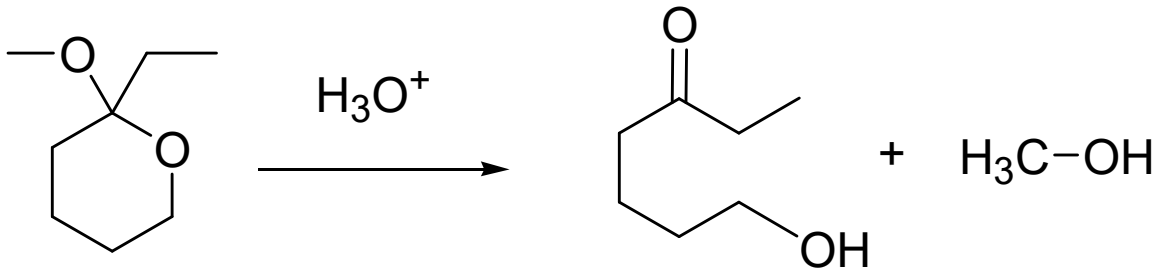


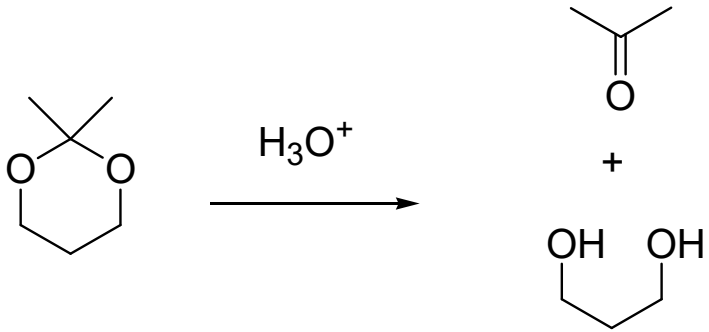
Doplňte produkty reakcí



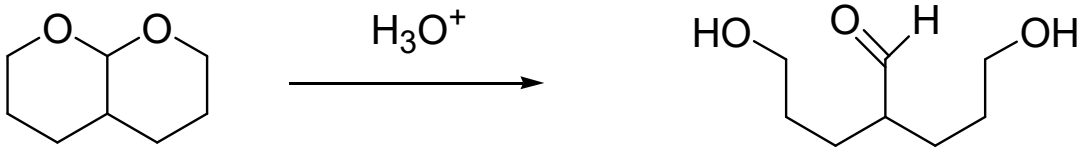


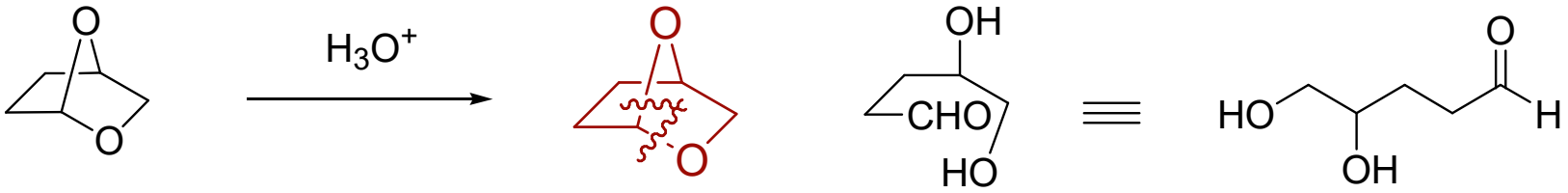
Doplňte produkty reakcí



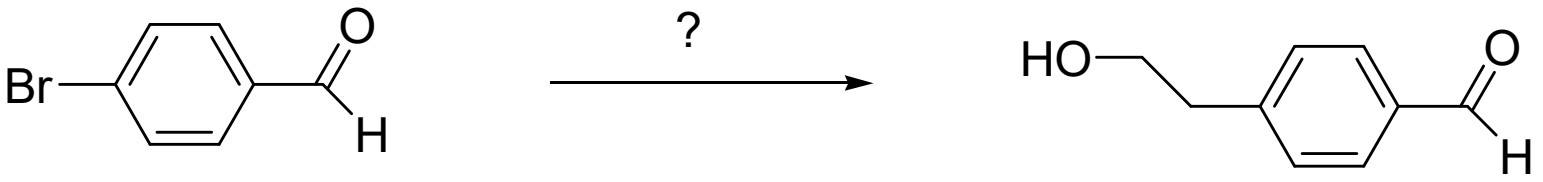


Doplňte produkty reakcí

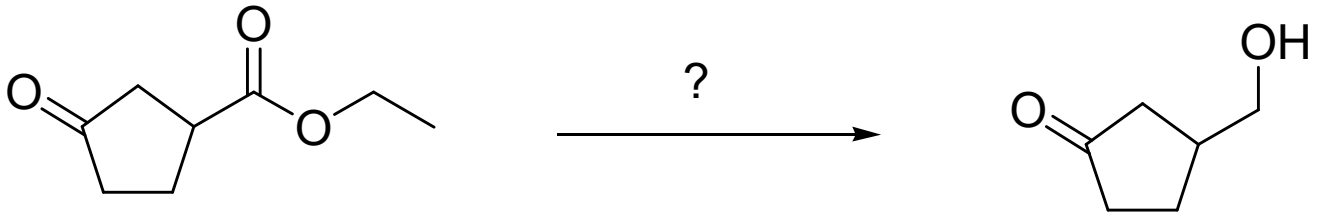




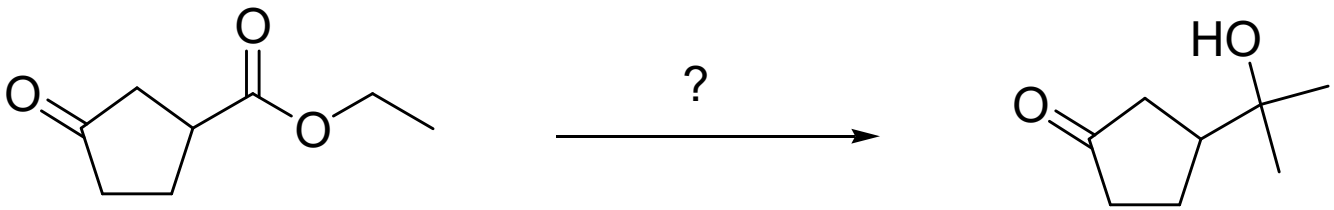
Acetal jako chránící skupina



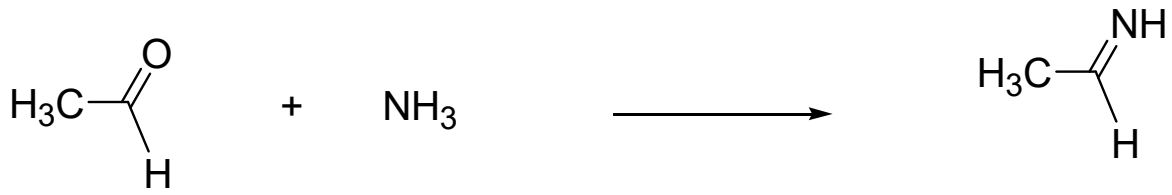
Acetal jako chránící skupina

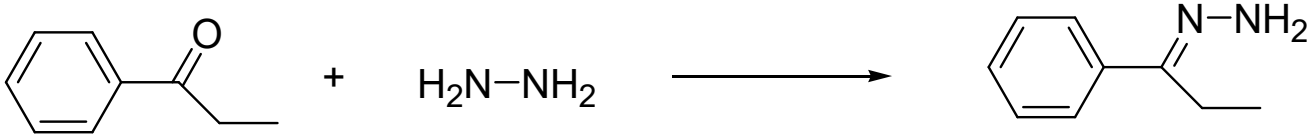


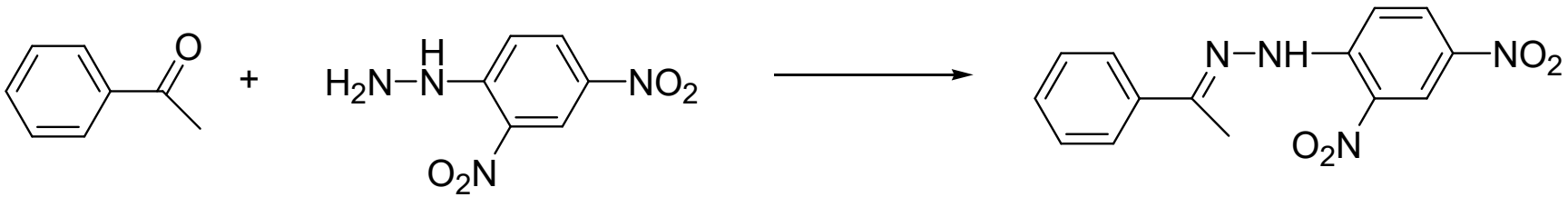
Acetal jako chránící skupina

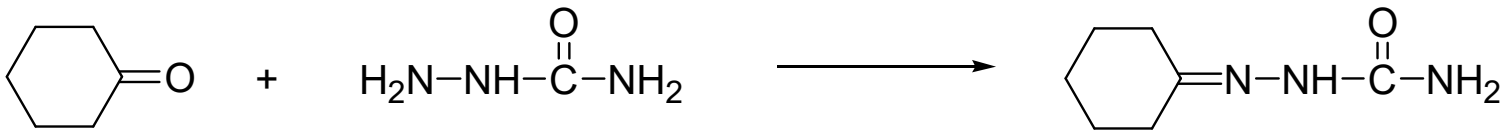


Reakce s deriváty amoniaku



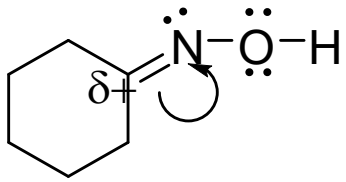


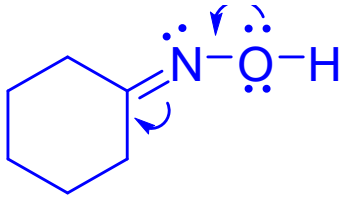


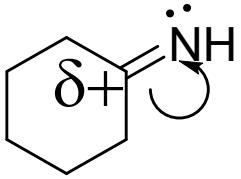


Reakce s deriváty amoniaku

U oximů, hydrazonů neběží zpětná hydrolýza tak snadno jako u iminů, zdůvodněte

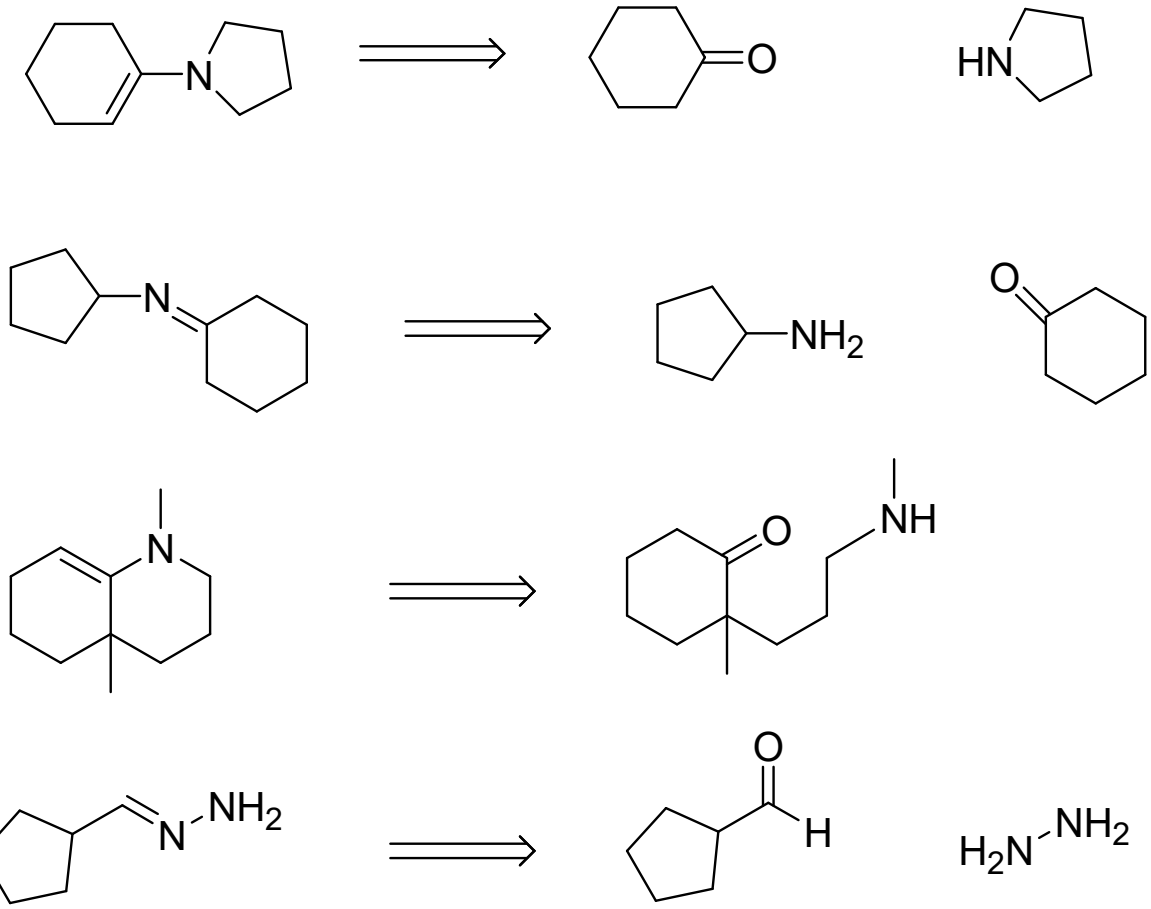




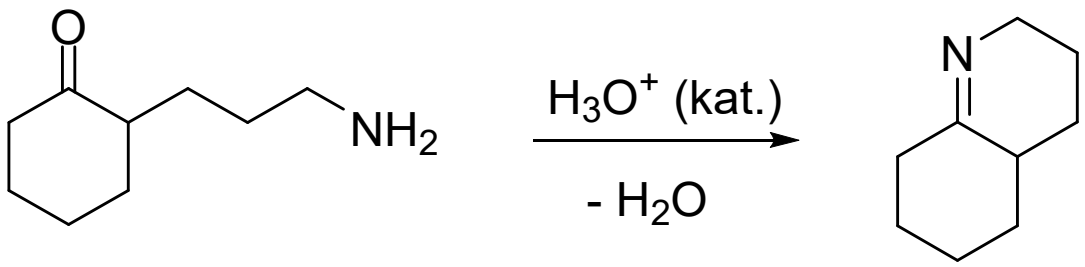


δ+ na uhlíku oximu je menší než u iminu

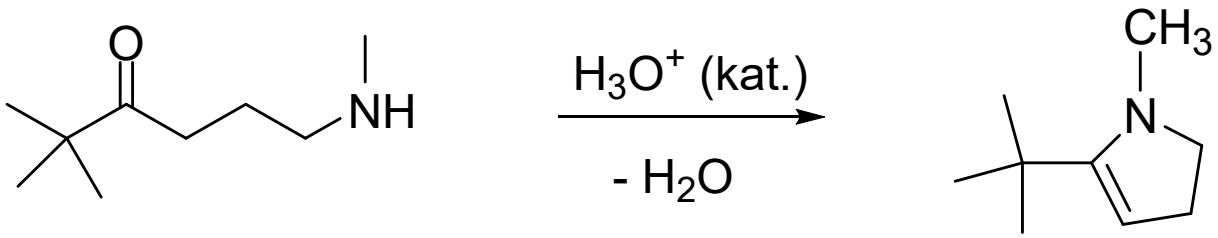
Identifikujte reagenty, které poskytly následující sloučeniny



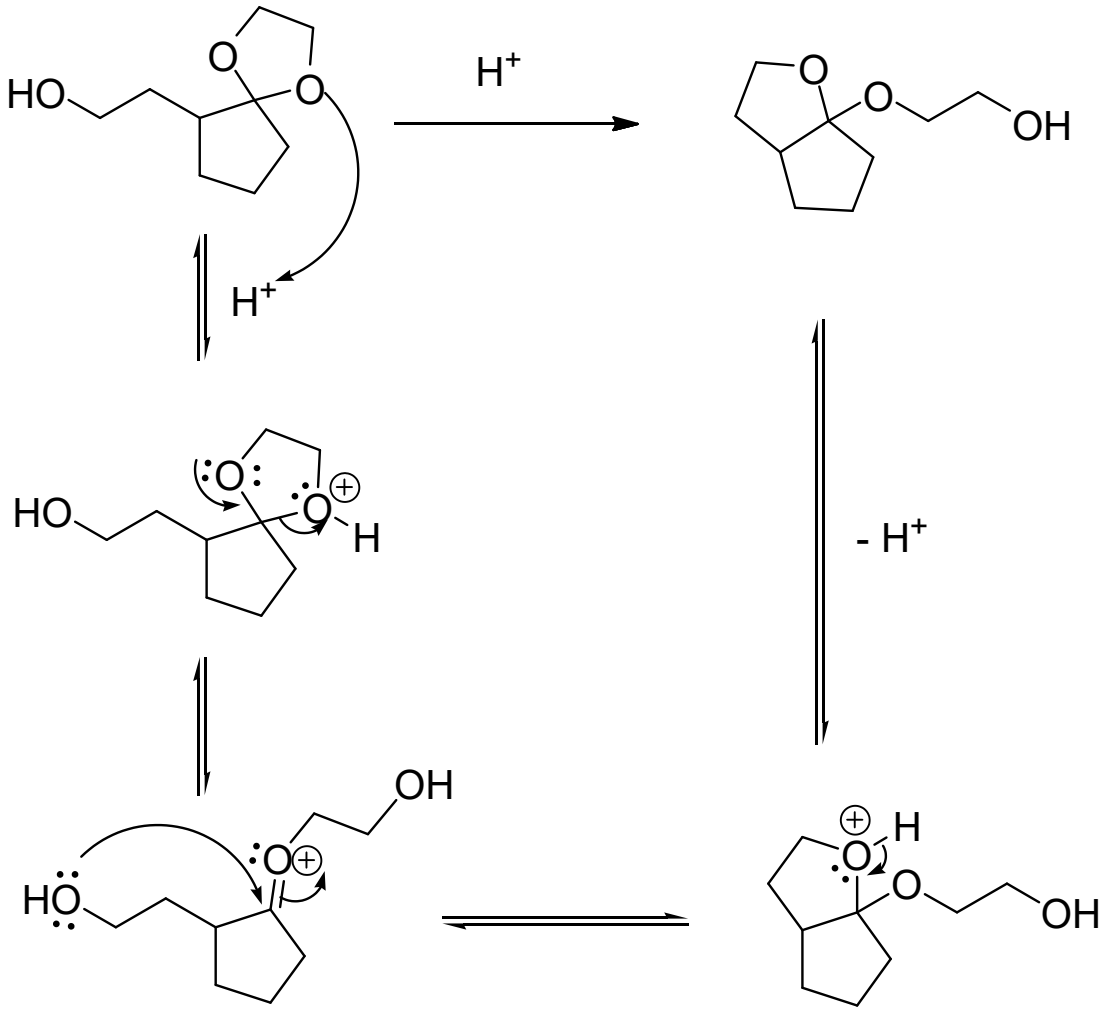
Napište podrobný mechanismus uvedené reakce



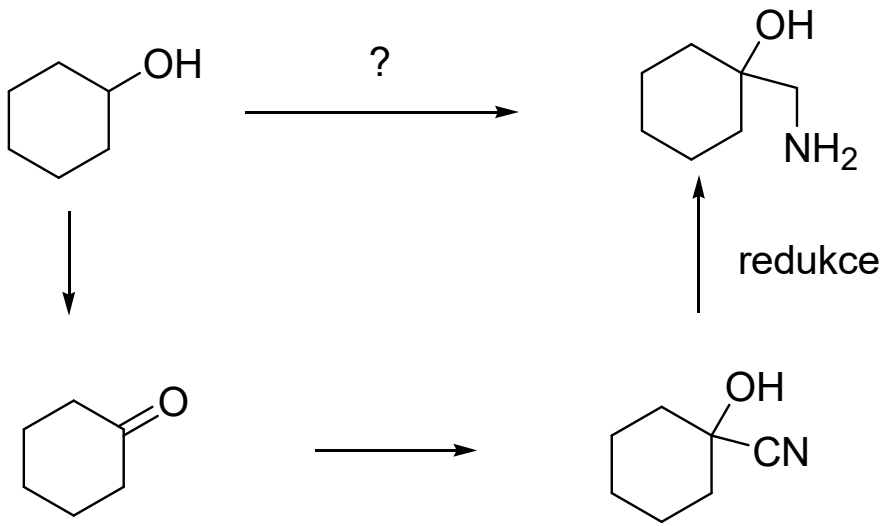
Napište podrobný mechanismus uvedené reakce



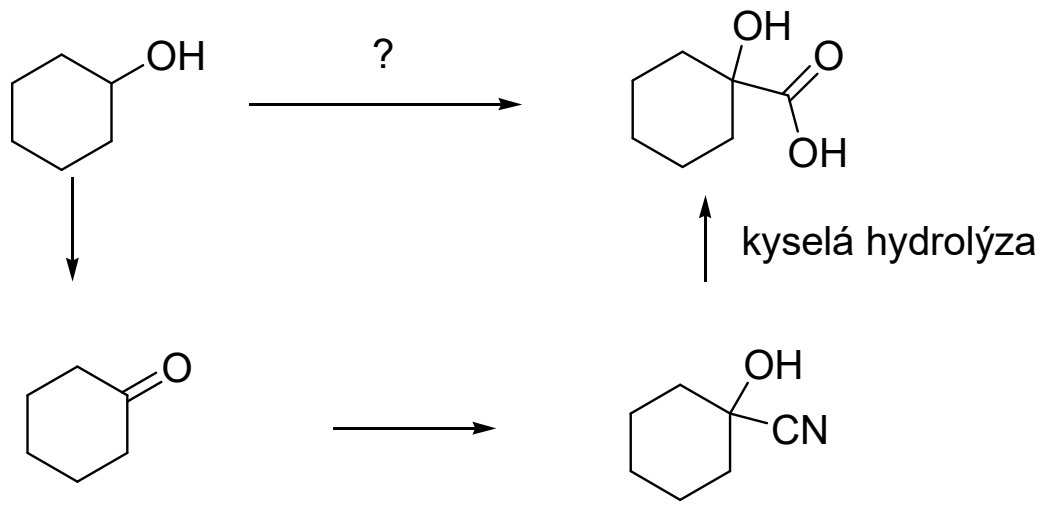
Napište produkt a mechanismus uvedené kysele katalyzované přeměny



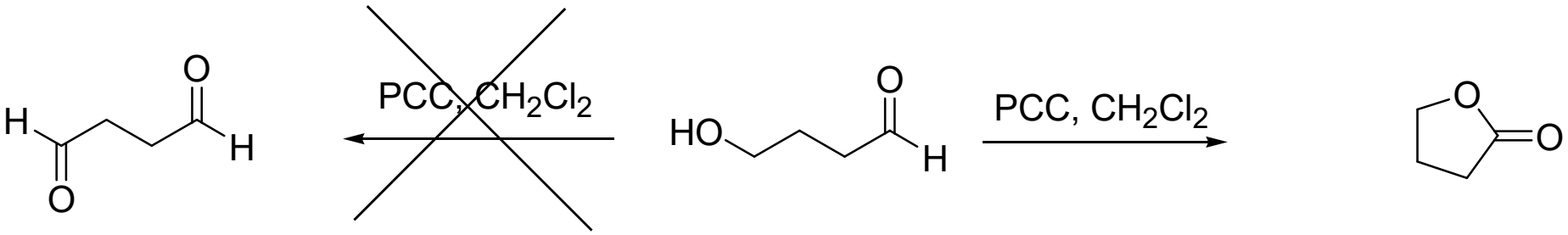
Identifikujte reagenty, kterými byste uskutečnili následující přeměny



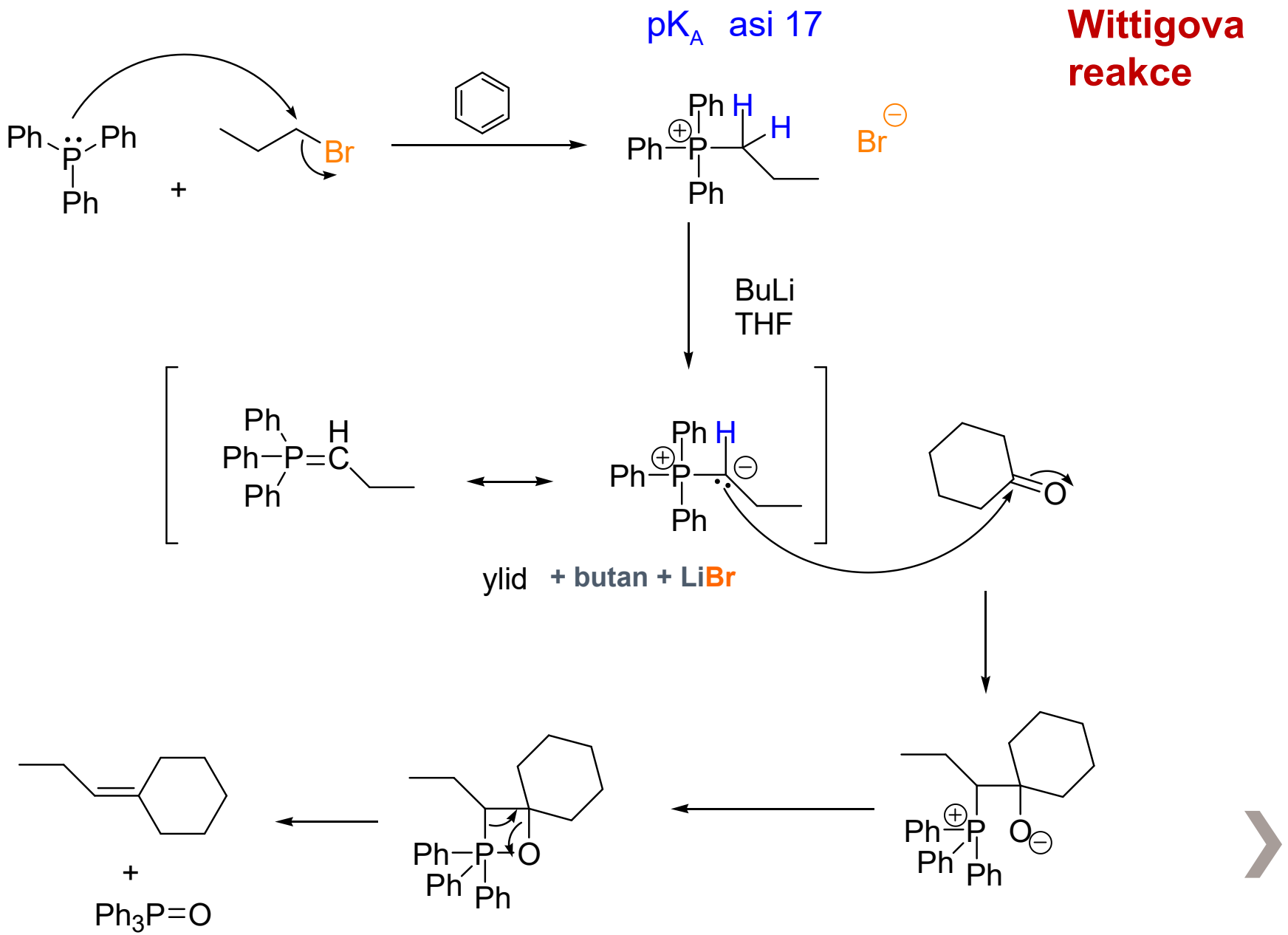
Identifikujte reagenty, kterými byste uskutečnili následující přeměny



Vysvětlete, proč nedochází k oxidaci alkoholu na aldehyd



Wittigova reakce

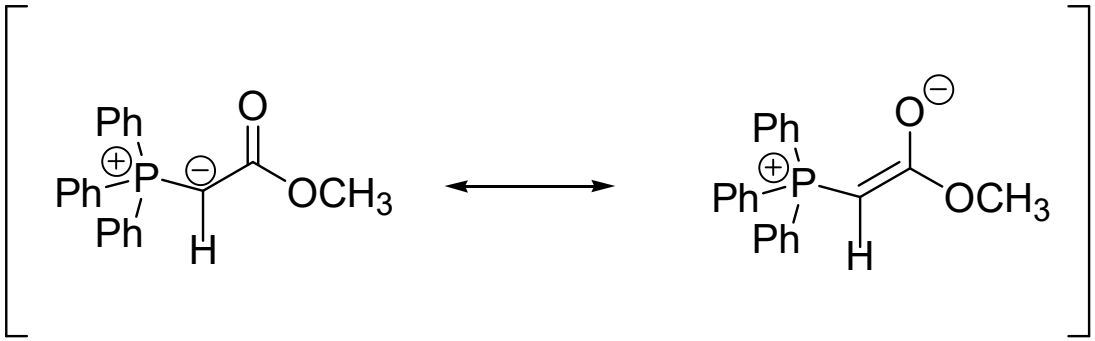


Wittigova reakce

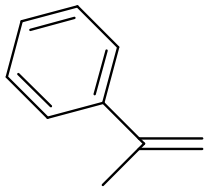
nestabilizovaný ylid — *Z* – izomer produktu

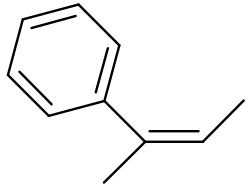
stabilizovaný ylid — *E*- izomer produktu

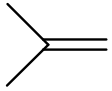
Extra - stabilizace činí vznik cyklu reverzibilní a reakce je řízena termodynamicky, dekompozice cyklu je stereospecifická

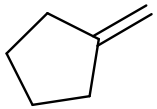


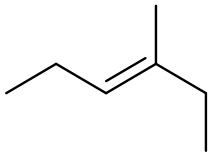
Wittigova reakce

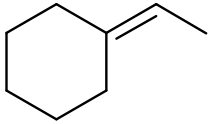


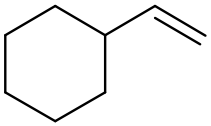


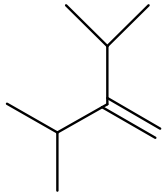


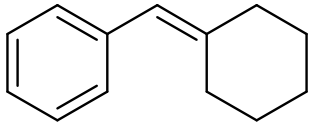




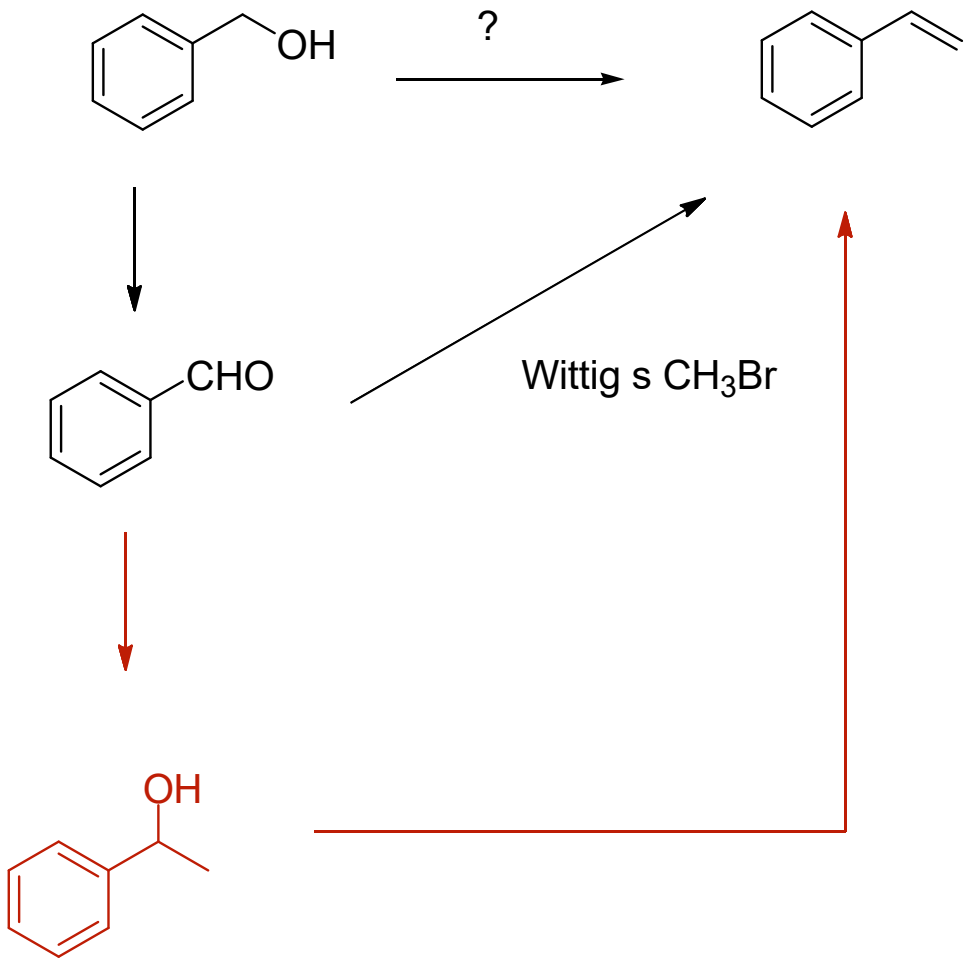








Identifikujte reagenty, kterými byste uskutečnili následující přeměny



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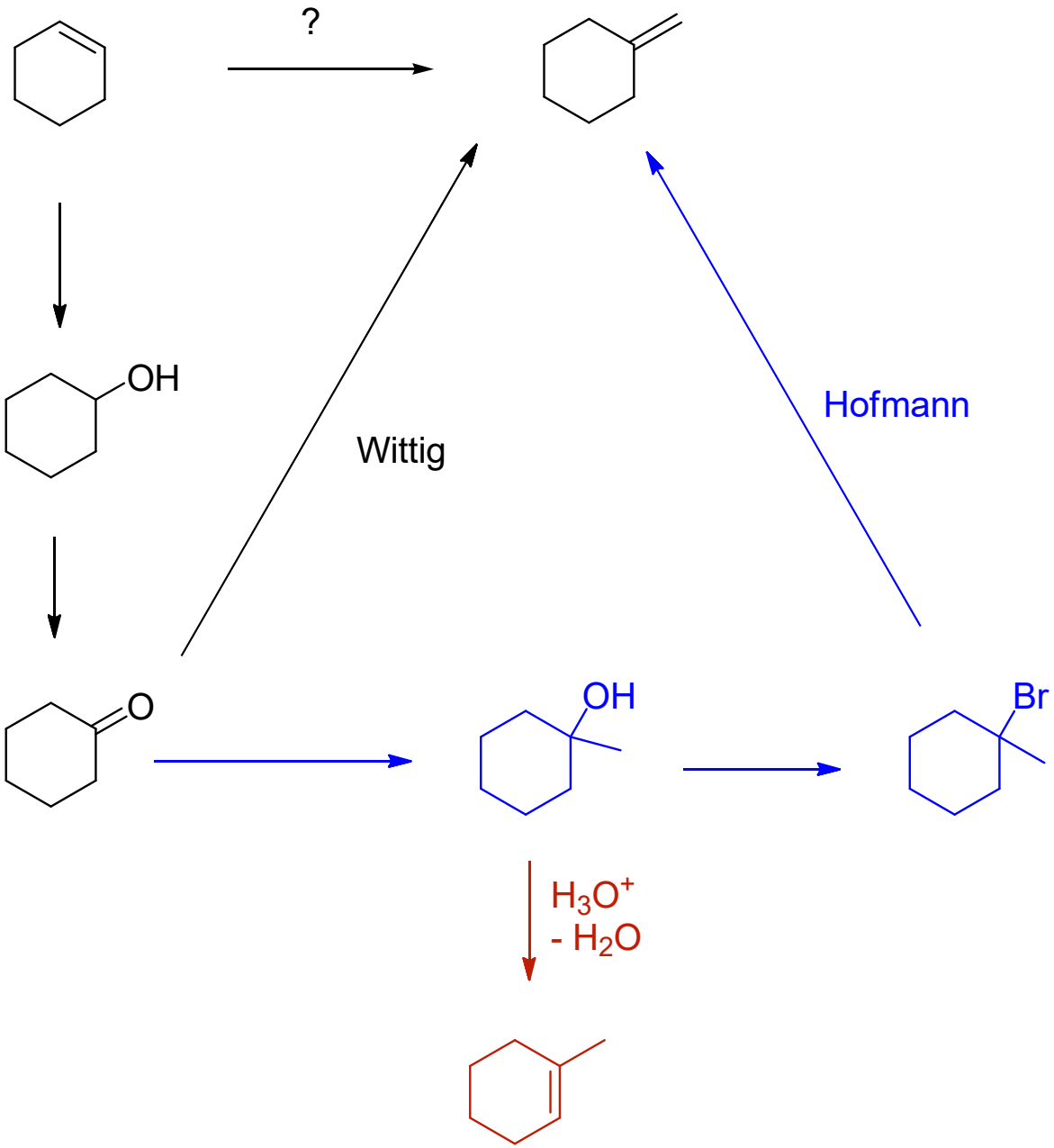
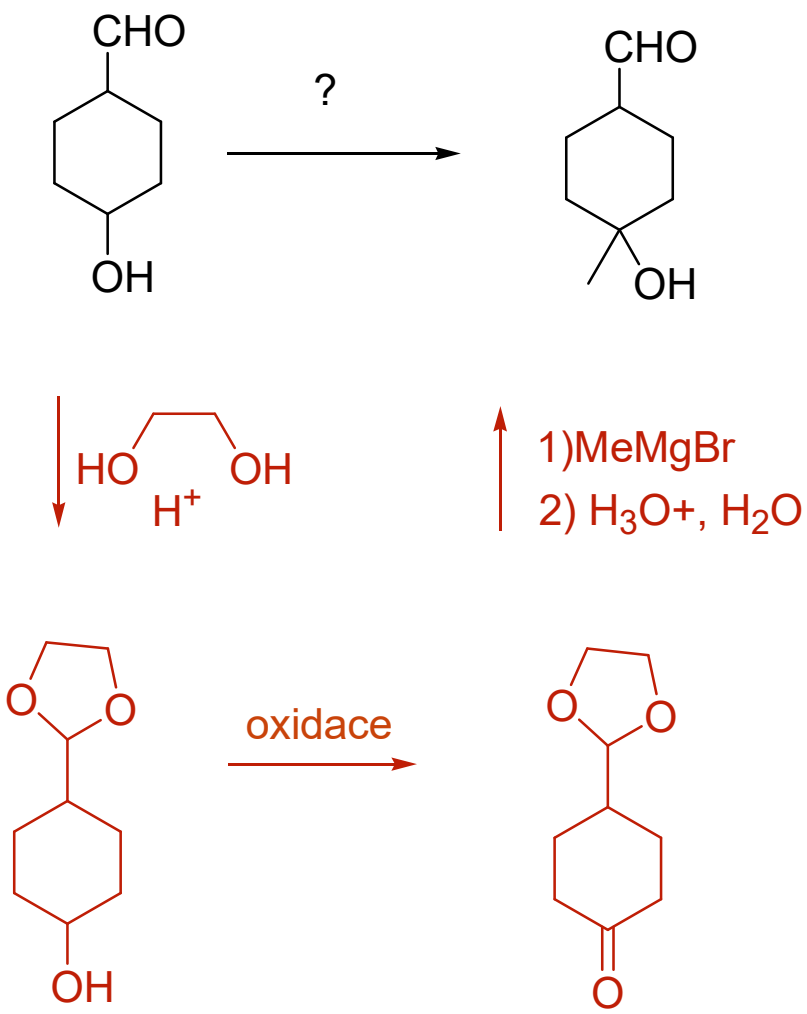
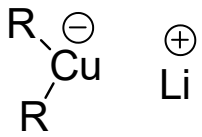


Identifikujte reagenty, kterými byste uskutečnili následující přeměny



1,2- versus 1,4-adice

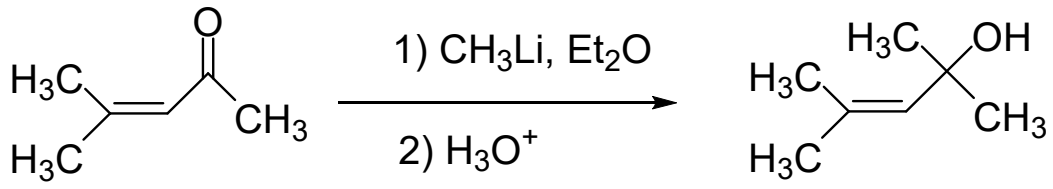
R–MgX R–Li	převážně 1,2-adice
	převážně 1,4-adice

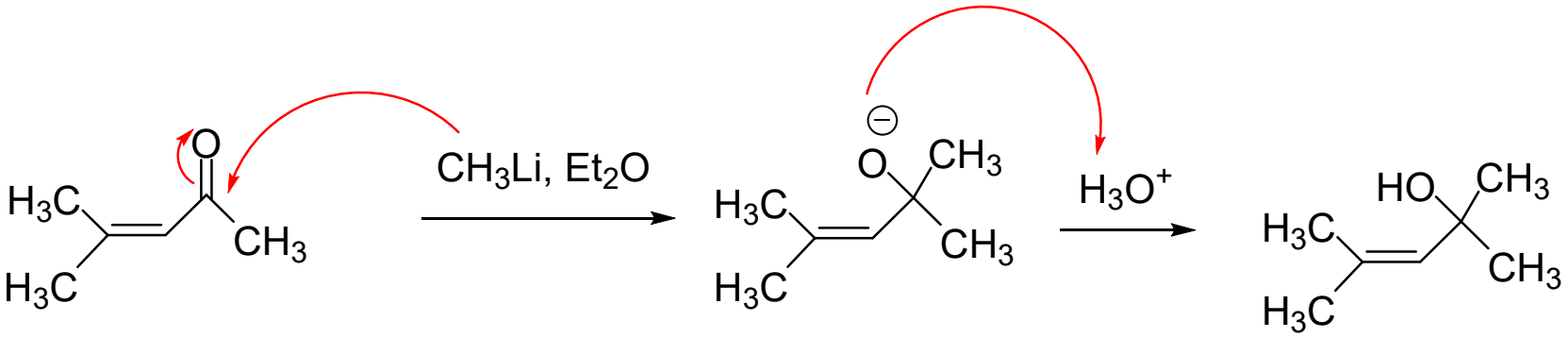
$$2\ RLi + CuBr \longrightarrow R_2CuLi + LiBr$$

$$EtLi + CuBr \xrightarrow[-\ LiBr]{} EtCu \xrightarrow{EtLi} Et_2CuLi$$

DŮLEŽITÉ

1,2- versus 1,4-adice





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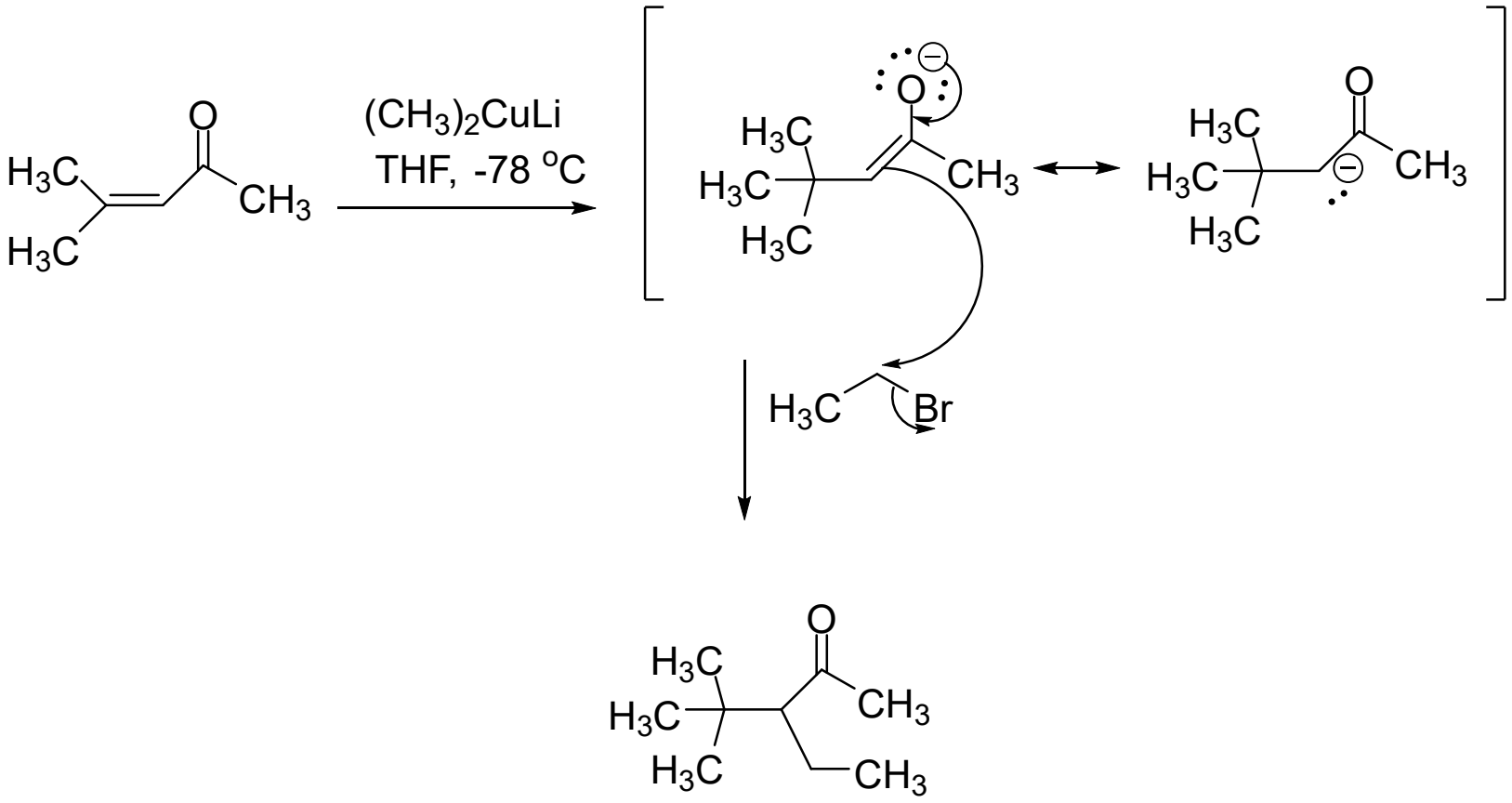
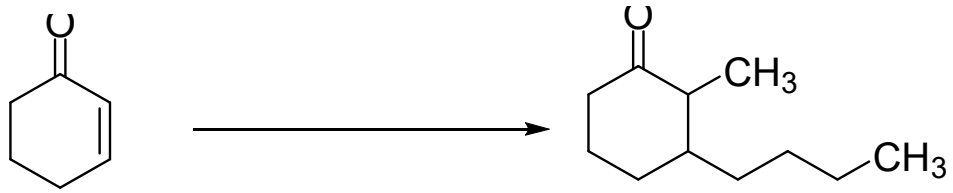
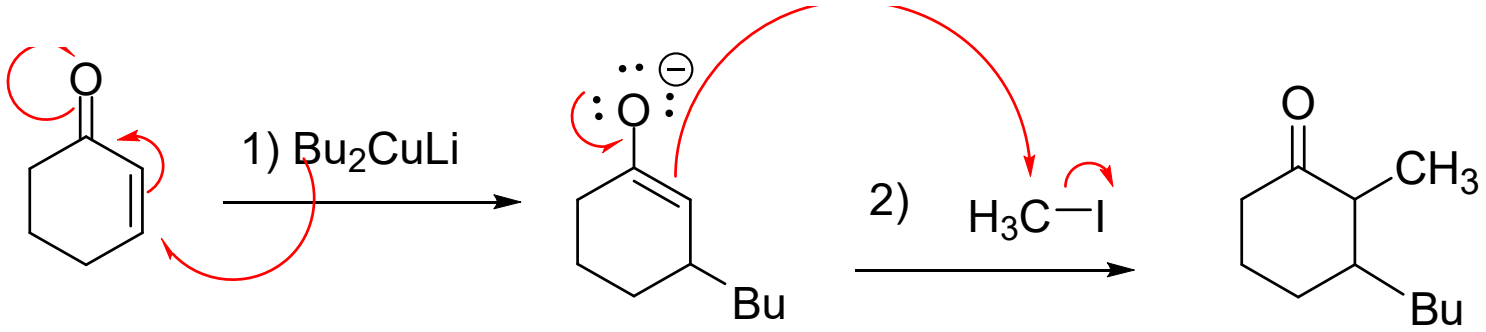


DŮLEŽITÉ





DŮLEŽITÉ