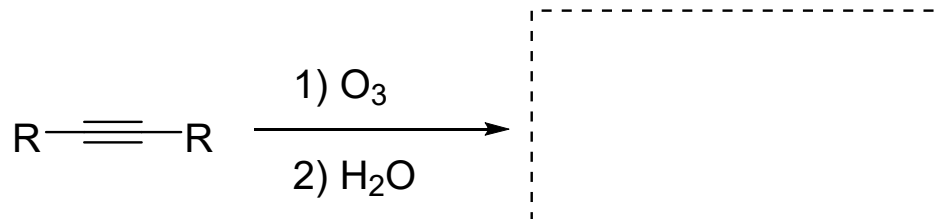


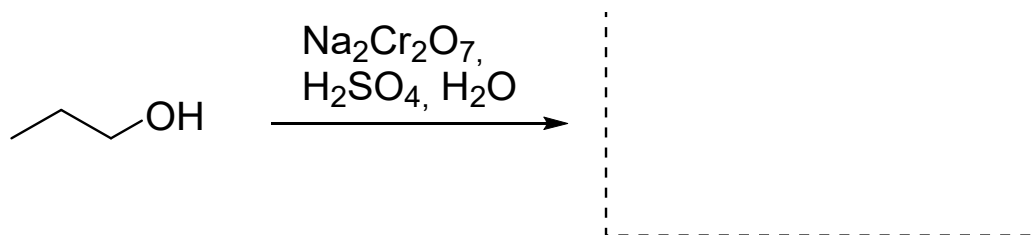
KARBOXYLOVÉ KYSELINY A JEJICH FUNKČNÍ DERIVÁTY



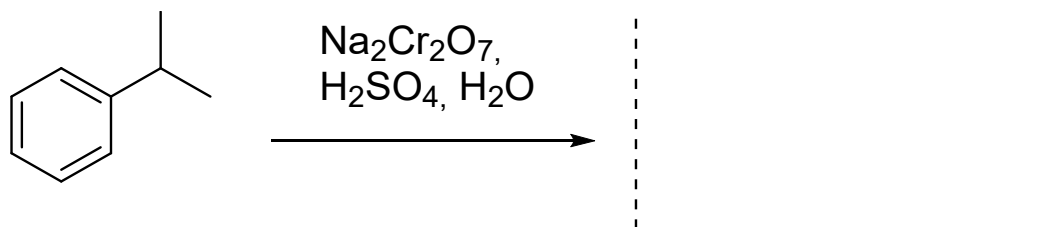
1) Oxidativní štěpení alkynů



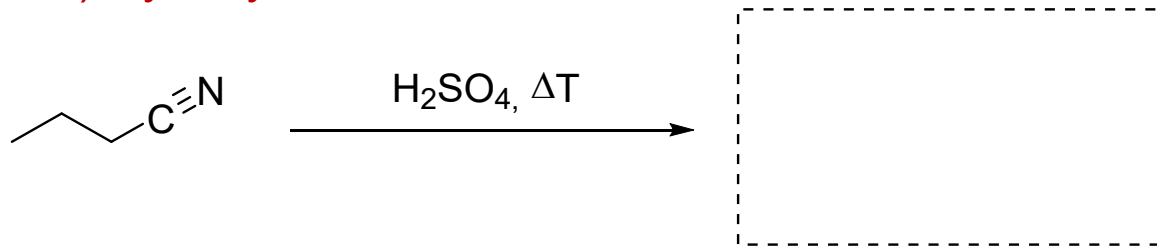
2) Oxidace primárních alkoholů



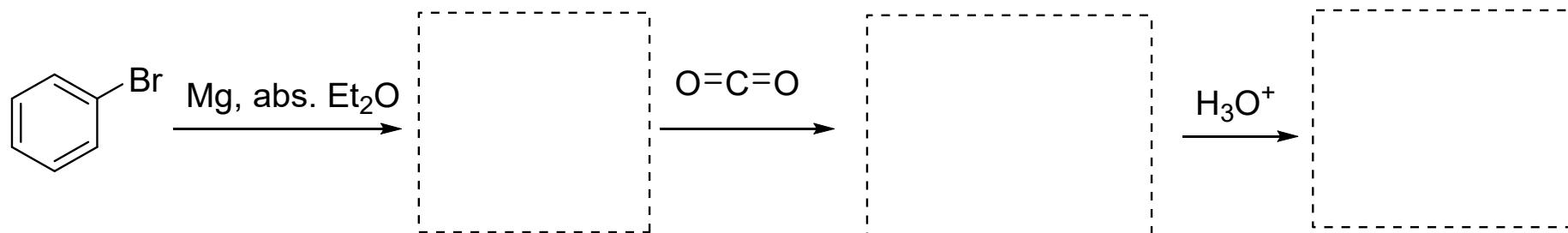
3) Oxidace alkylbenzenů



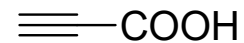
4) Hydrolýza nitrilů



5) Grignardova činidla a oxid uhličitý



Kyselost karboxylových kyselin



$\text{p}K_a$

4,8

0,6

4,2

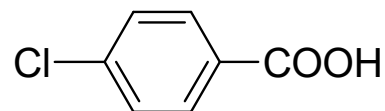
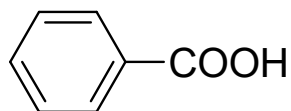
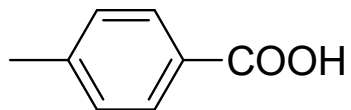
1,9



$\text{p}K_a$

0,23

0,63



$\text{p}K_a$

4,36

4,20

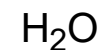
3,98



+



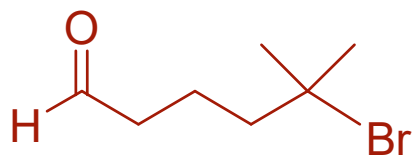
+

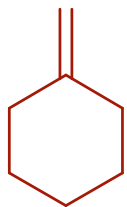


4,8

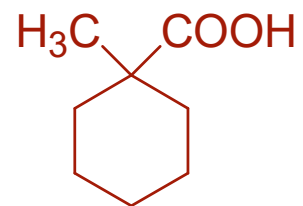
15,7



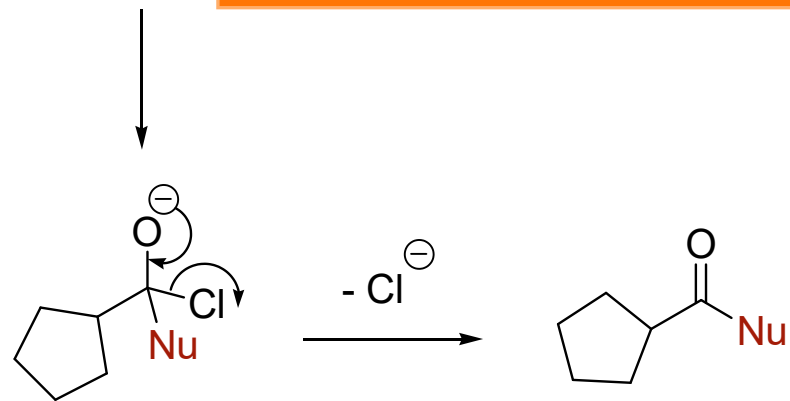
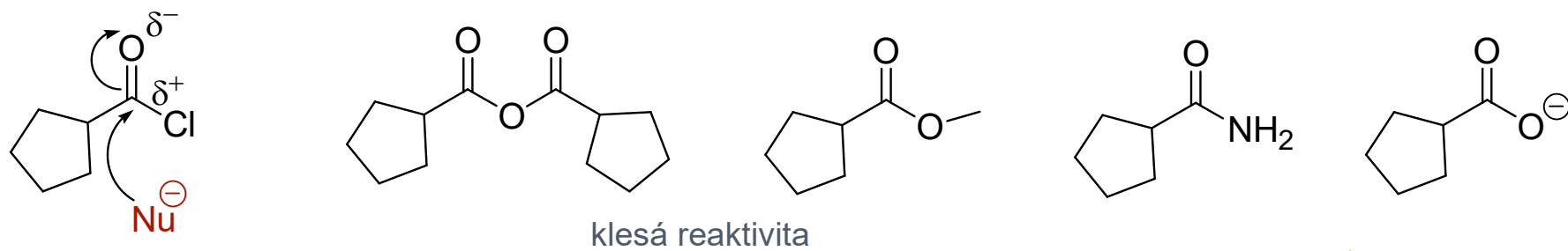




?

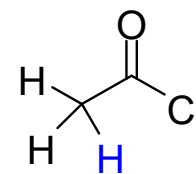
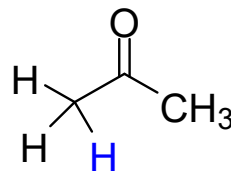
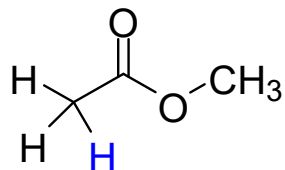
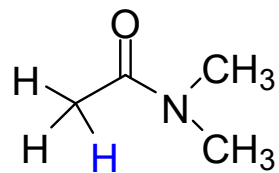


Funkční deriváty karboxylových kyselin



Odstupující skupina	pK_{AH}
R^-	50
NH_2^-	35
RO^-	16
$RCOO^-$	5
Cl^-	-7





pK_a

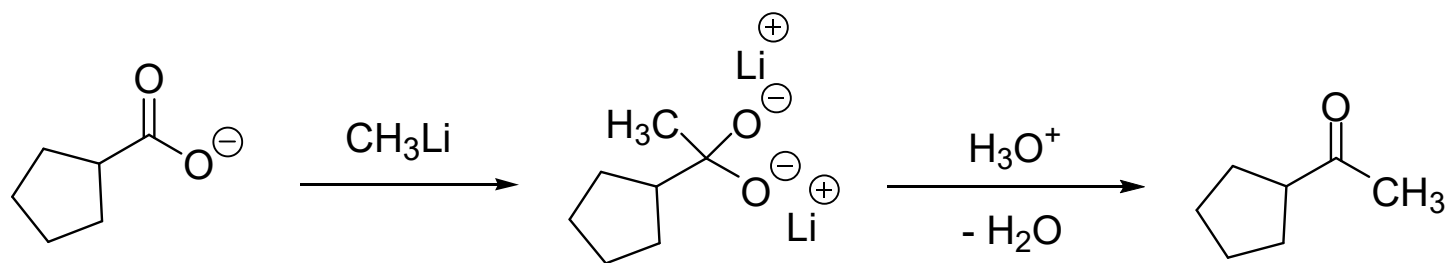
30

25

20

16





pouze velmi silné nukleofily se adují na karboxylátový anion !!

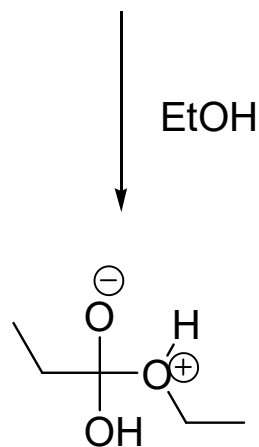
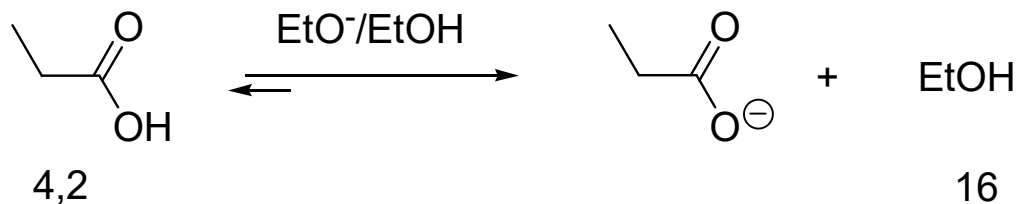


ESTERY KARBOXYLOVÝCH KYSELIN - příprava

- 1) Esterifikace a transesterifikace
- 2) Alkylace karboxylátového iontu
- 3) Reakce s diazomethanem (methylestery)
- 4) Z chloridů kyselin



Estery karboxylových kyselin

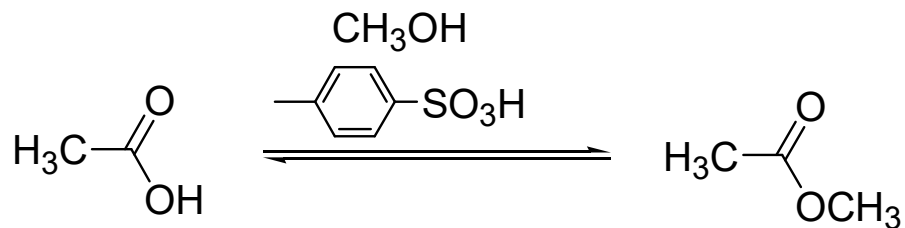


extrémně pomalá, „neprobíhá“
EtOH slabá báze i nukleofil

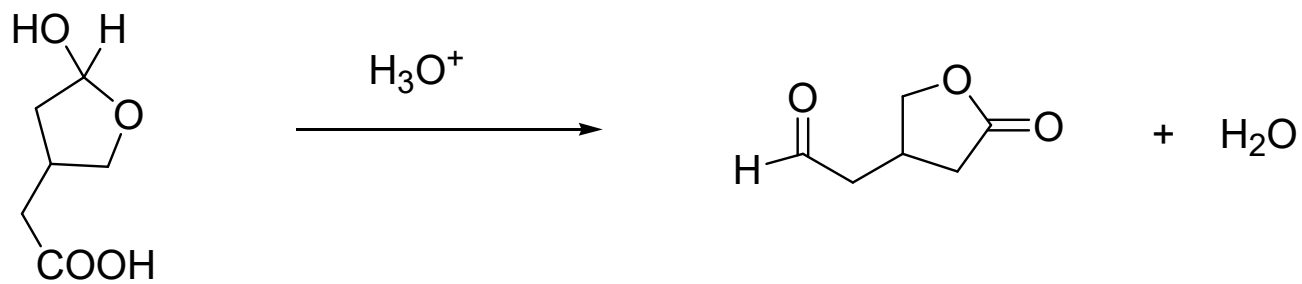
Esterifikace je kyselé katalyzovaná, rovnovážná reakce

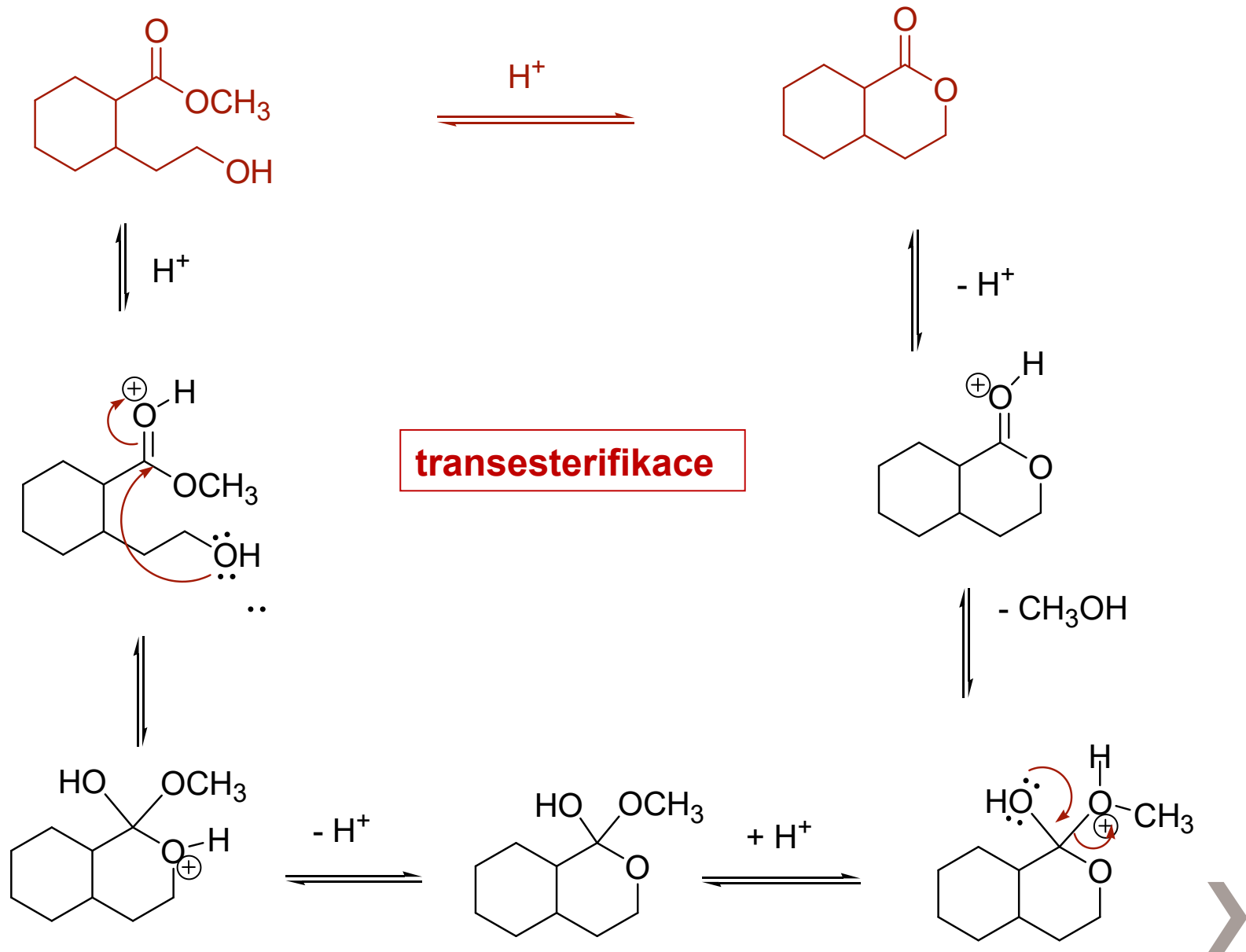


Napište podrobný mechanismus kyselí katalyzované esterifikace kyseliny octové methanolem za katalýzy kyselinou *p*-toluensulfonovou

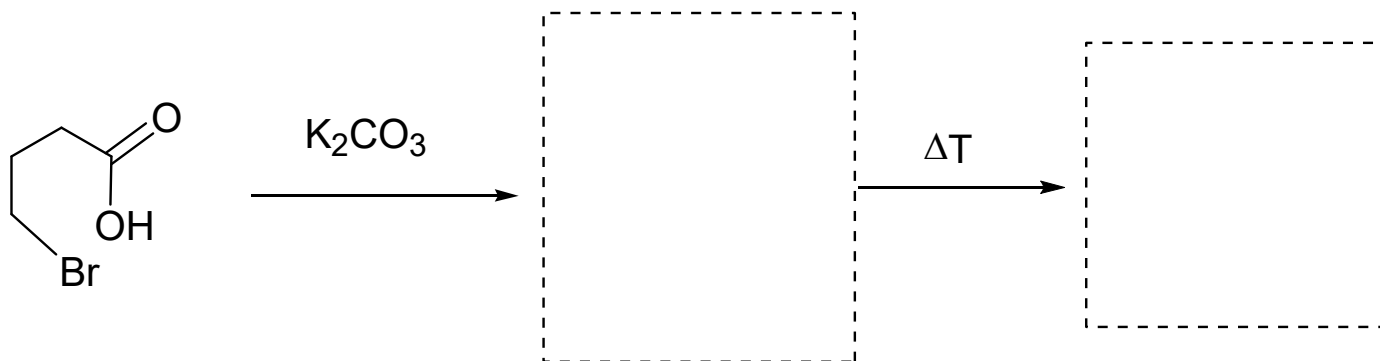
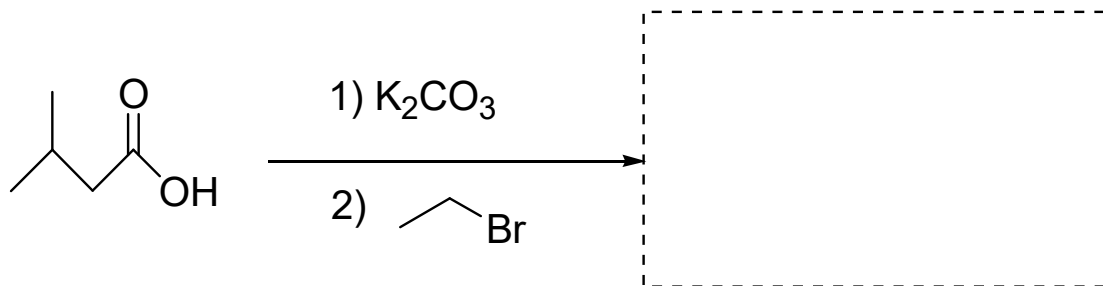


Vysvětlete

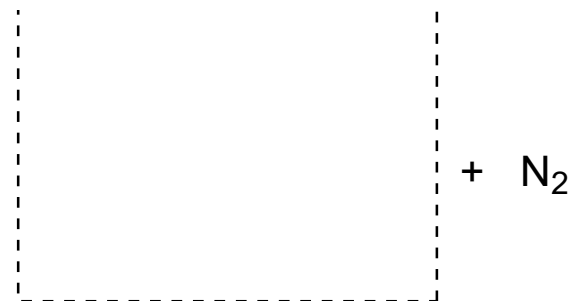
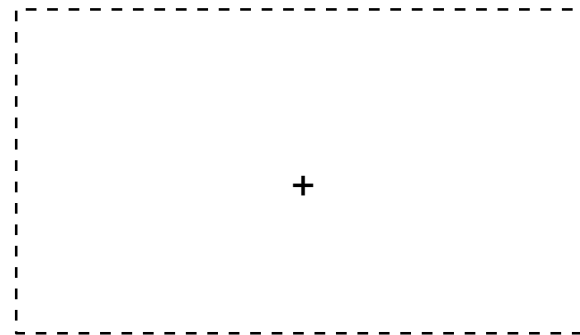
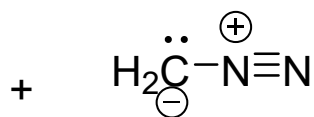
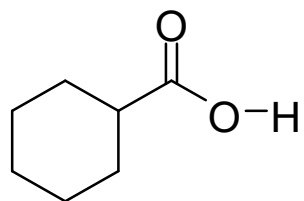




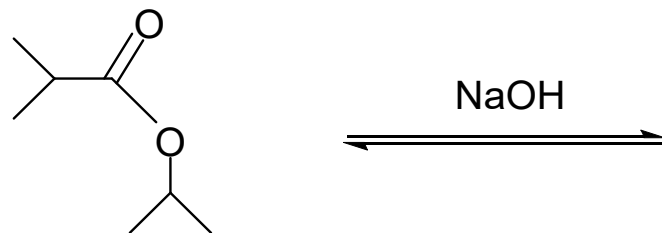
Estery alkylací karboxylátového iontu



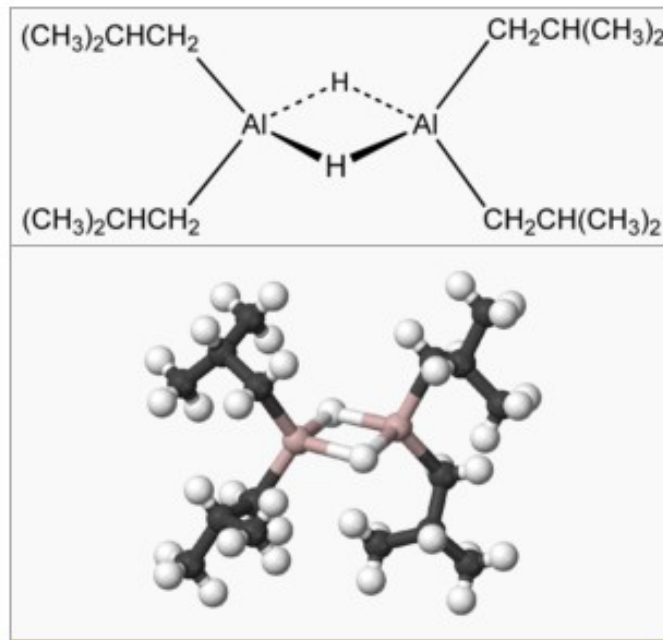
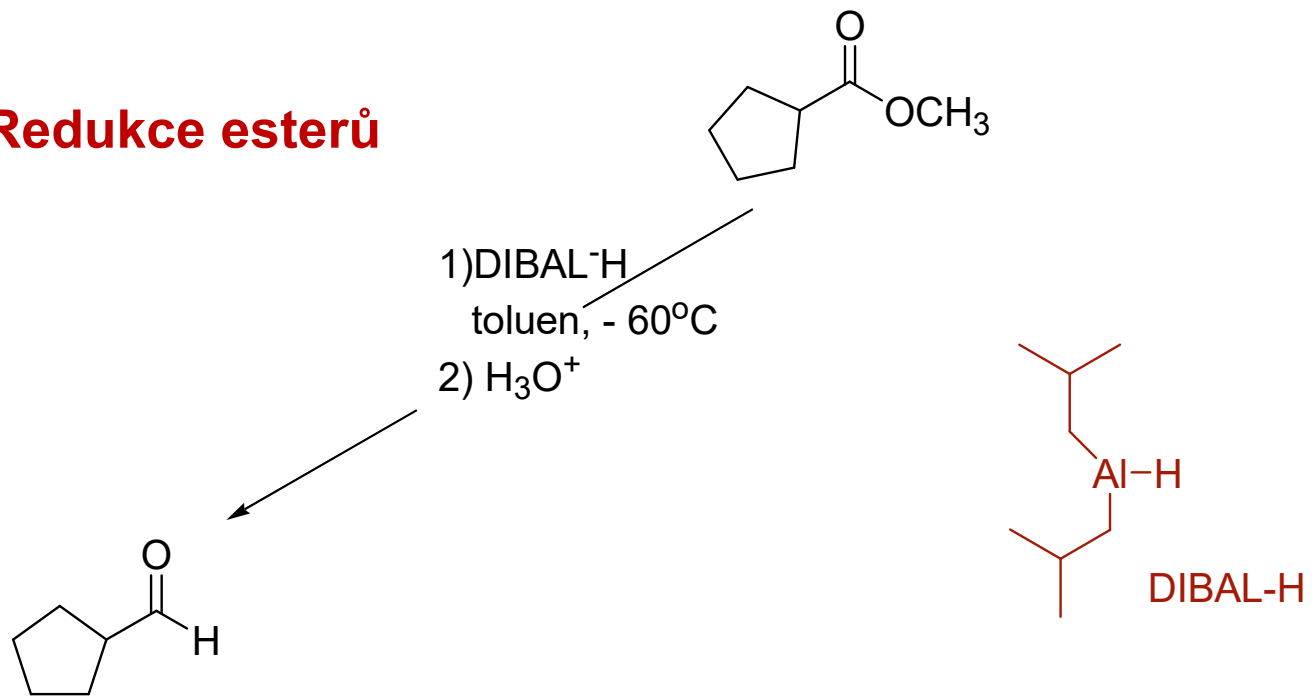
Methylestery reakcí s diazometanem

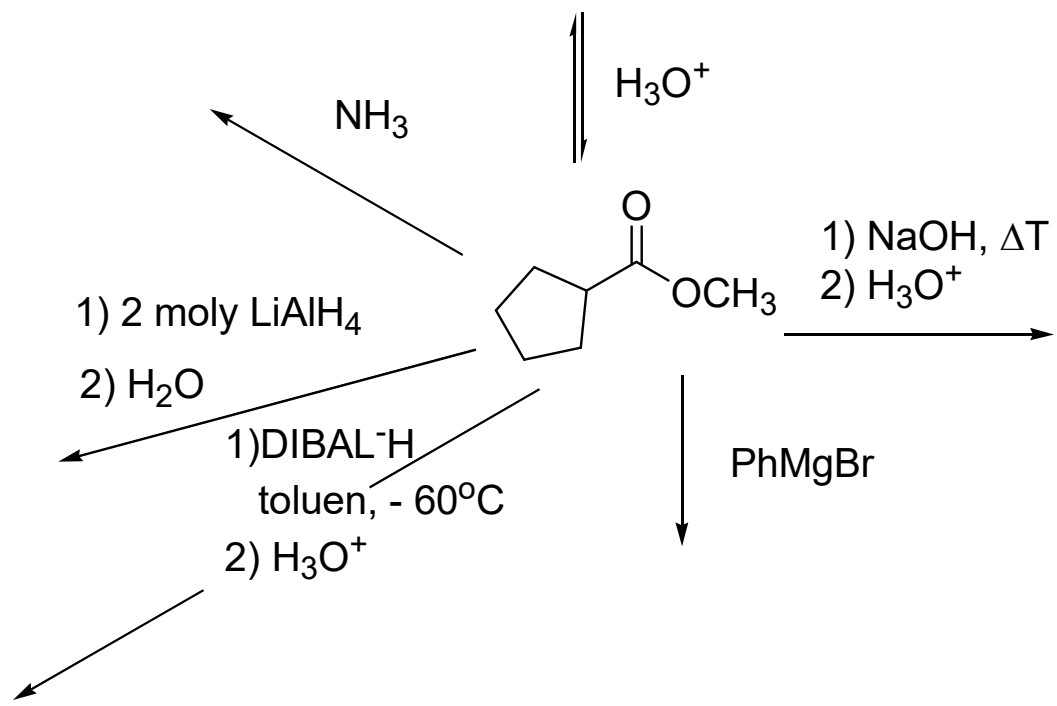


Zmýdelnění esterů – napište mechanismus reakce

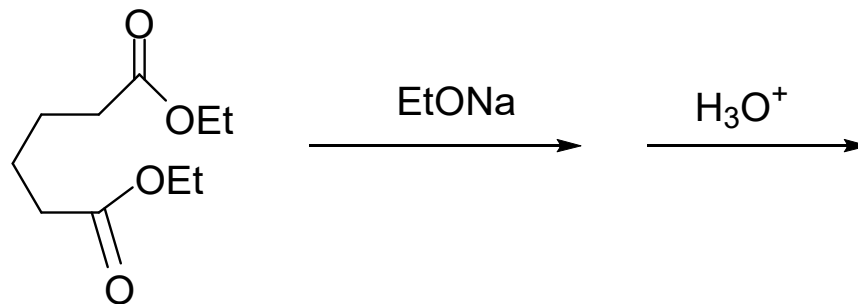
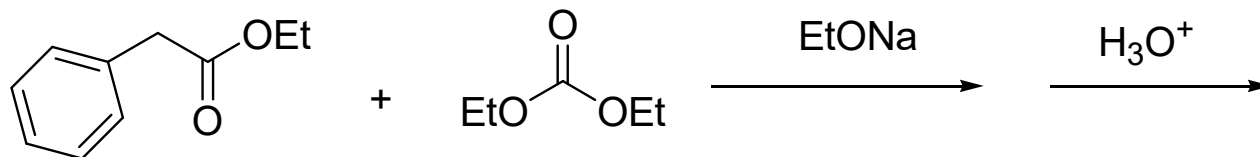
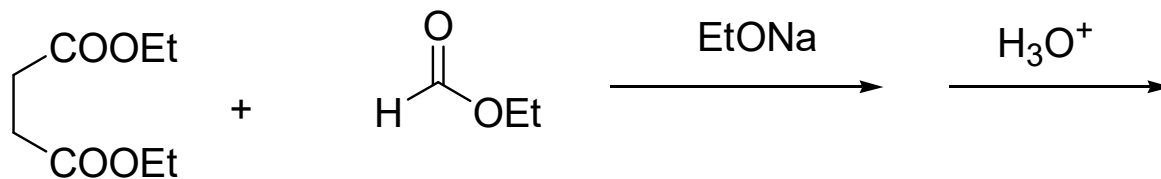
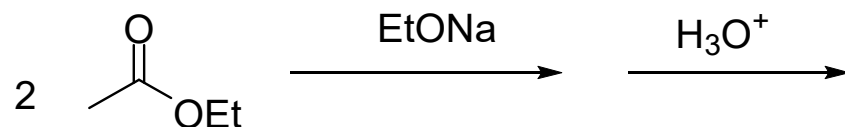


Redukce esterů

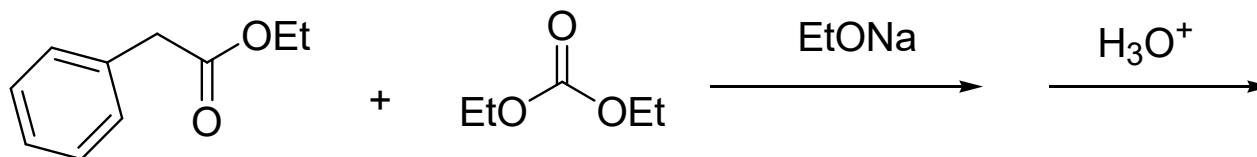




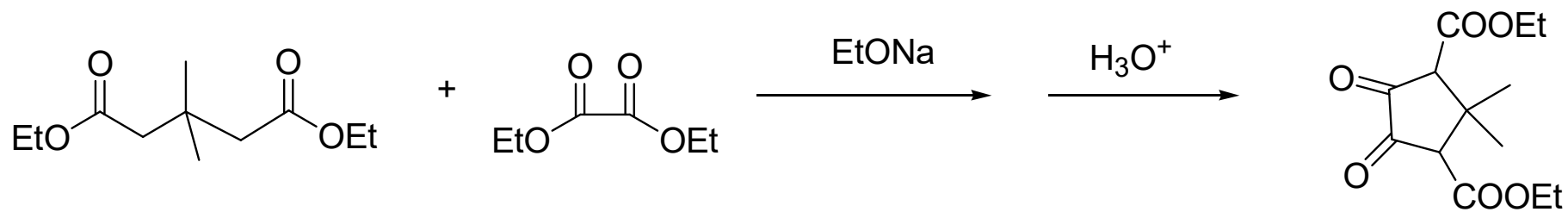
Claisenova kondenzace
zkřížená Claisenova kondenzace
Dieckmannova kondenzace



Claisenova kondenzace
zkřížená Claisenova kondenzace
Dieckmannova kondenzace

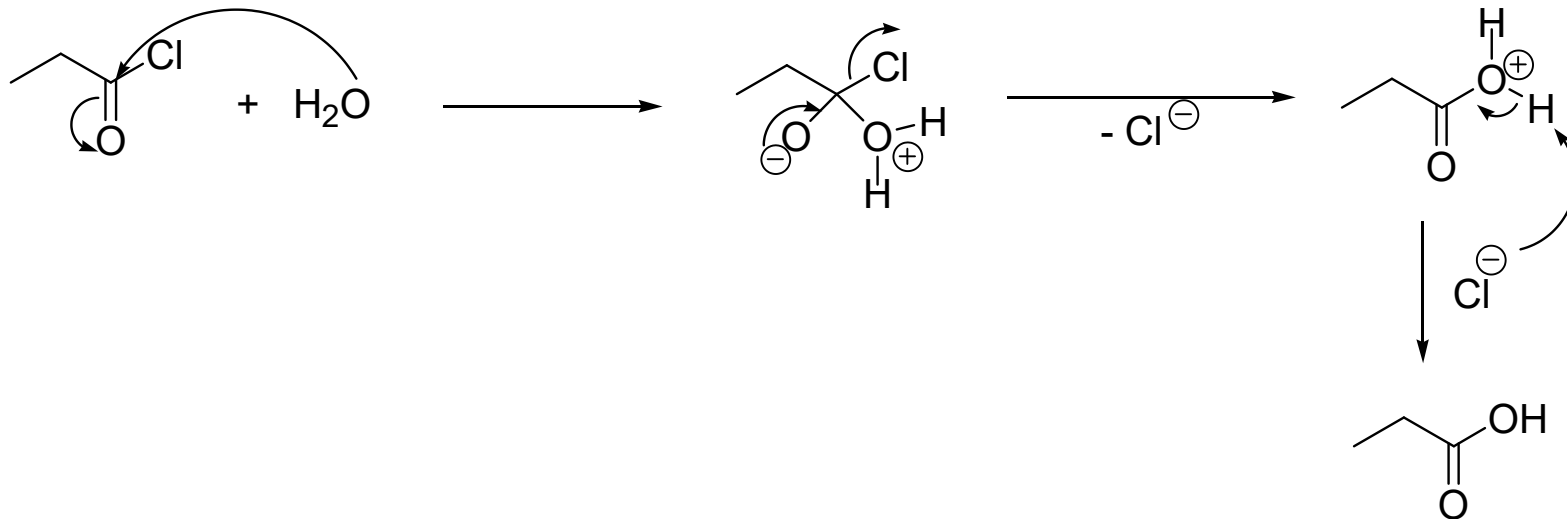


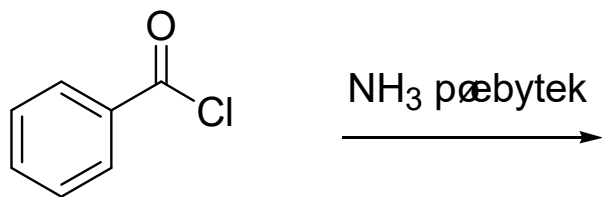
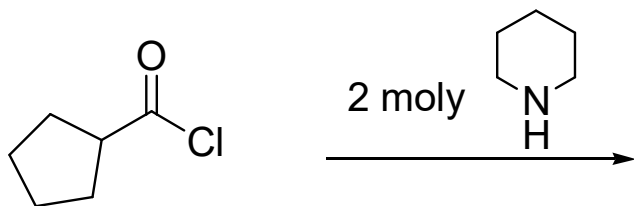
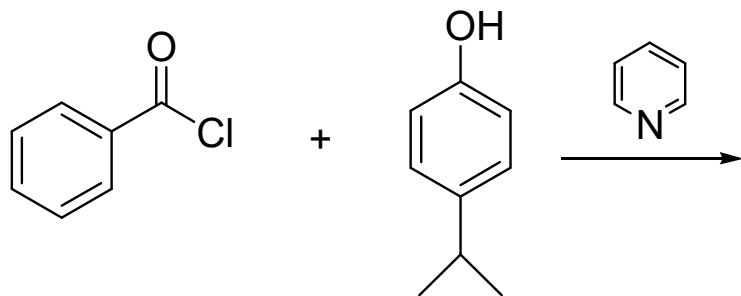
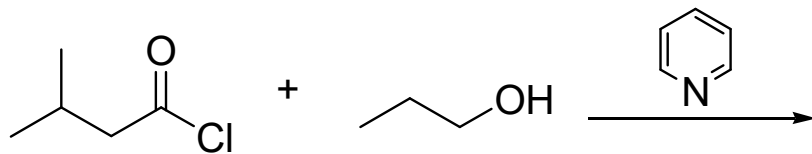
Navrhněte mechanismus reakce

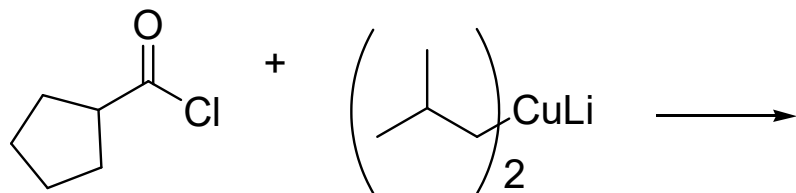


HALOGENIDY KARBOXYLOVÝCH KYSELIN

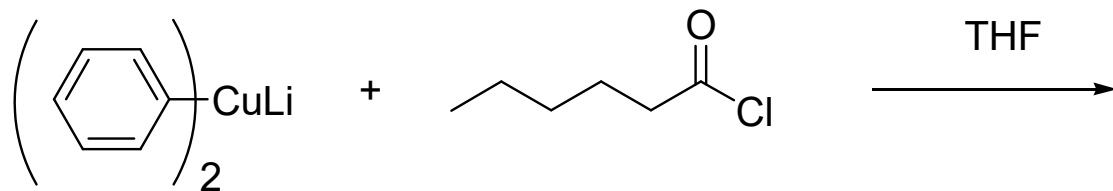
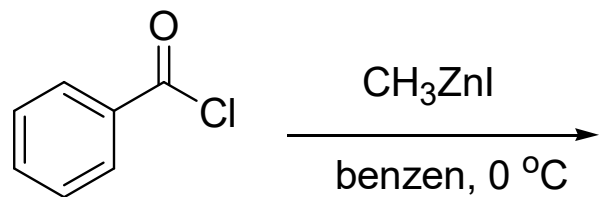
Chloridy kyselin hydrolýza

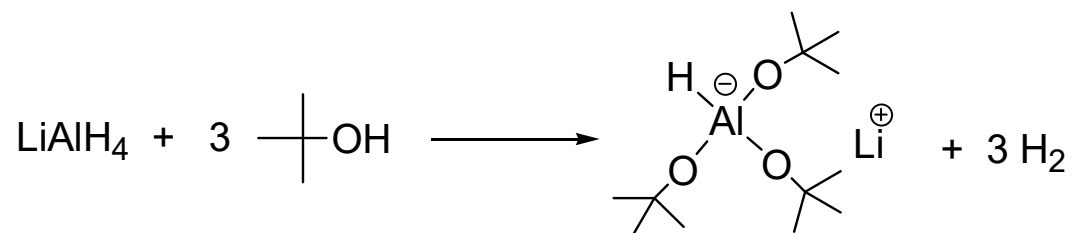
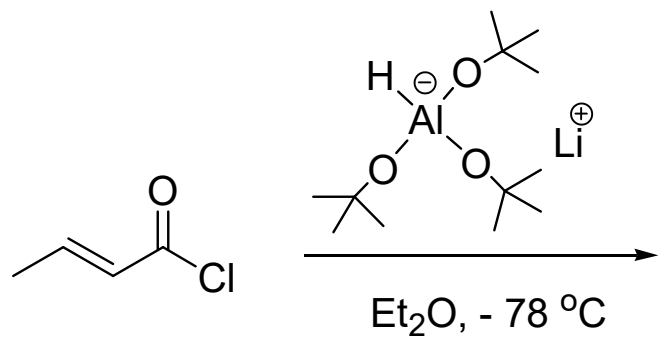




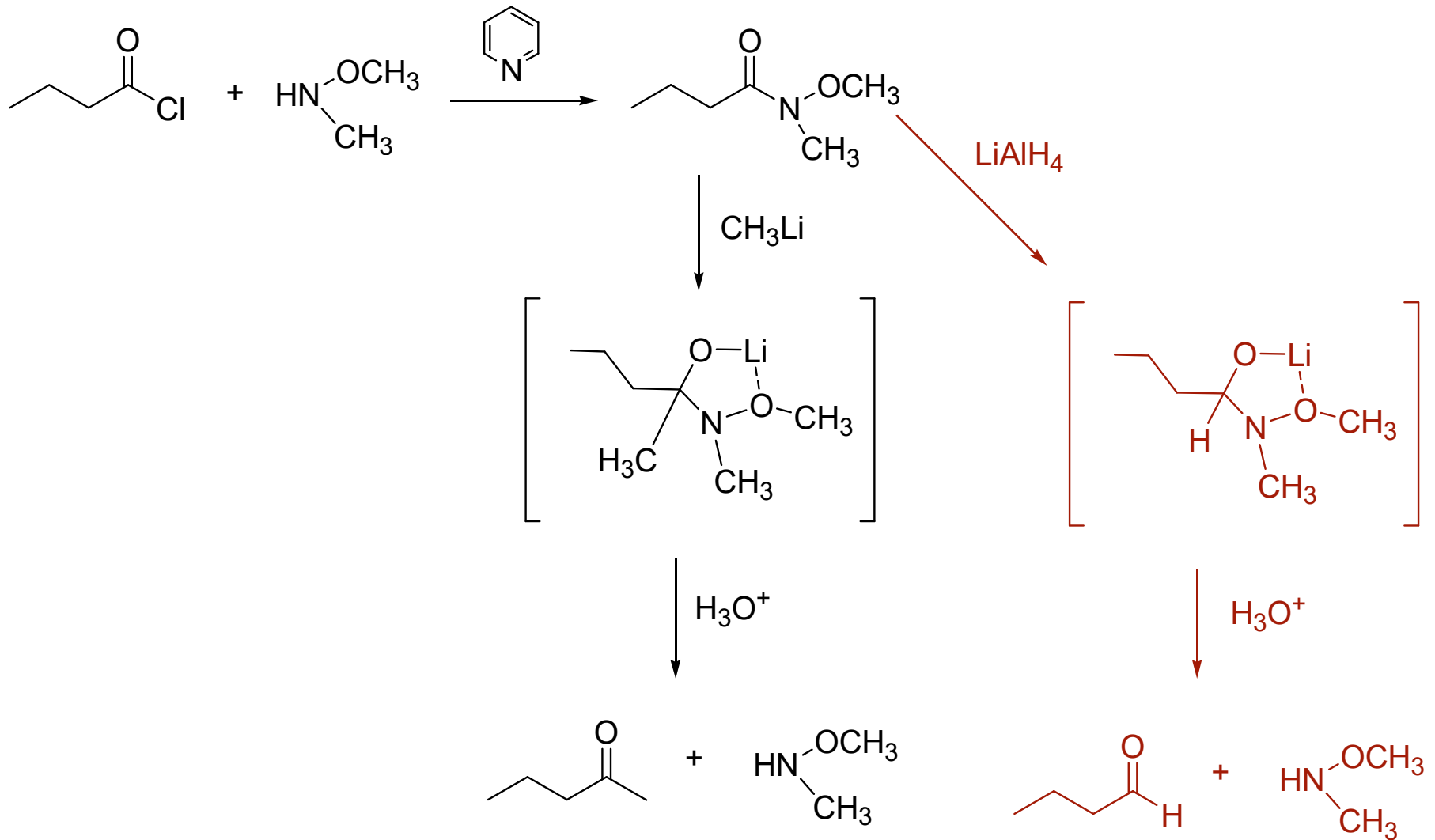


Gilmanovo činidlo

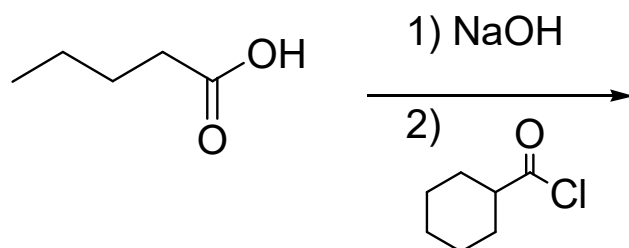
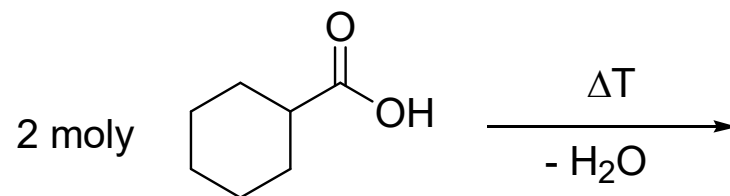




Weinrebův amid



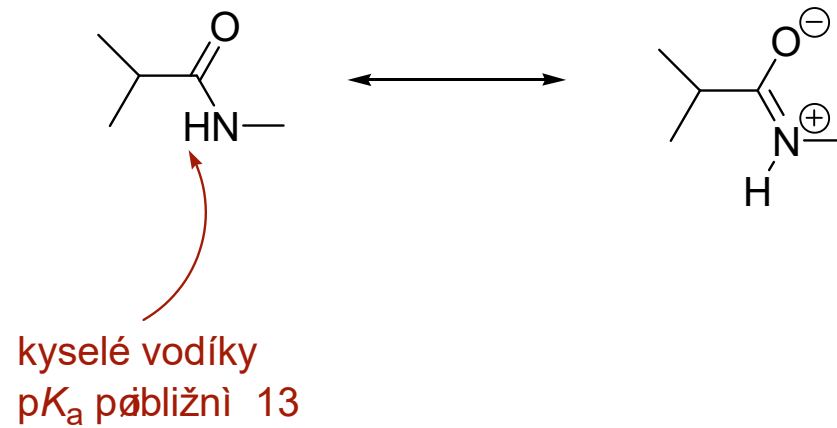
ANHYDRIDY KARBOXYLOVÝCH KYSELIN



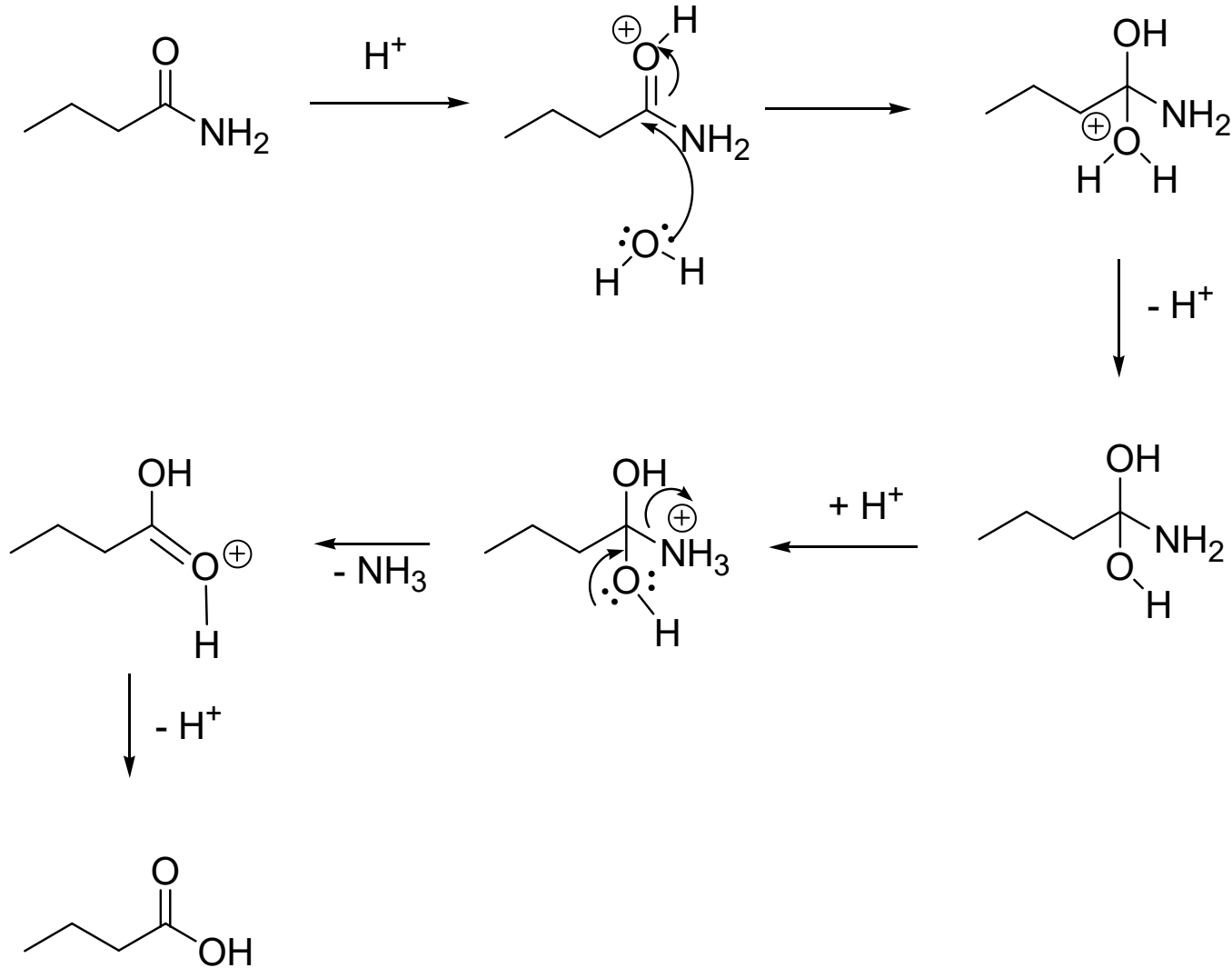
Reaktivita jako u chloridů karboxylových kyselin



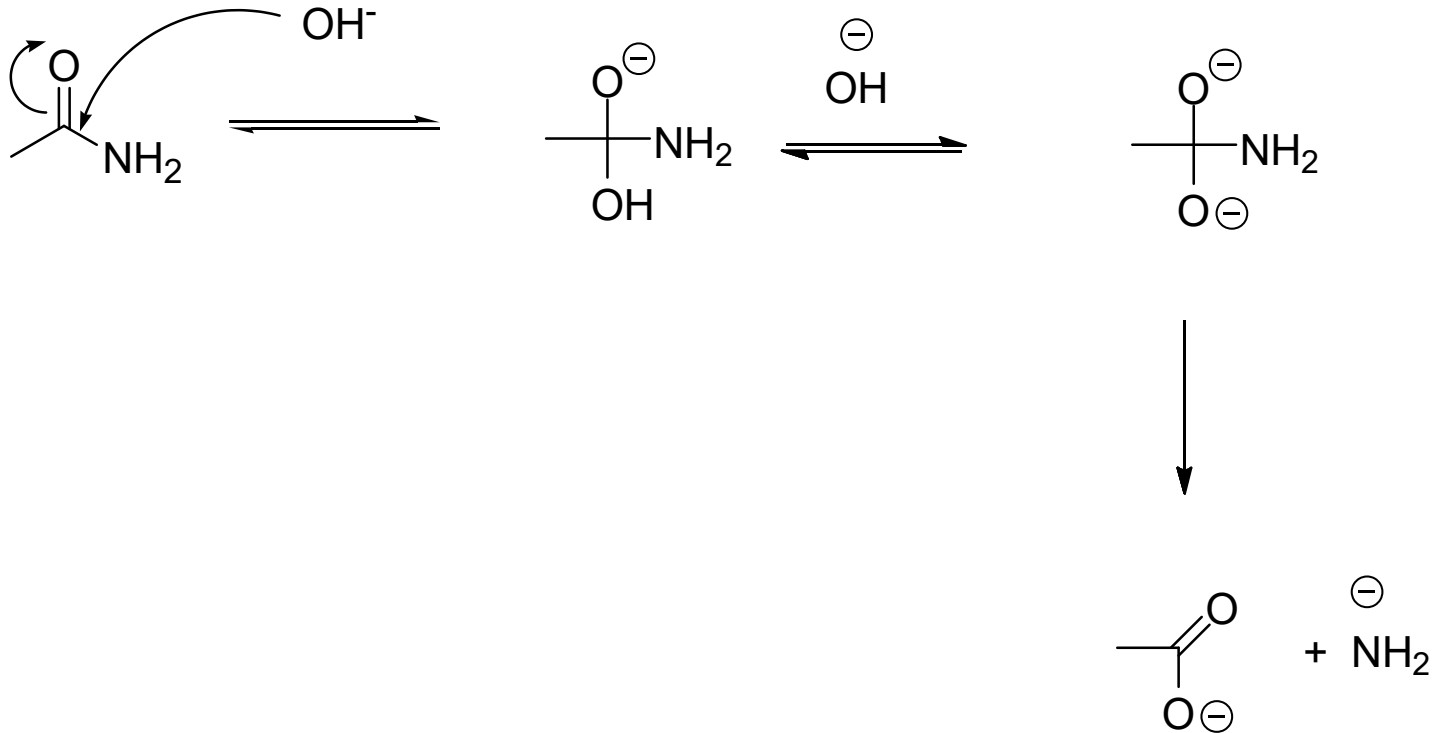
AMIDY KARBOXYLOVÝCH KYSELIN



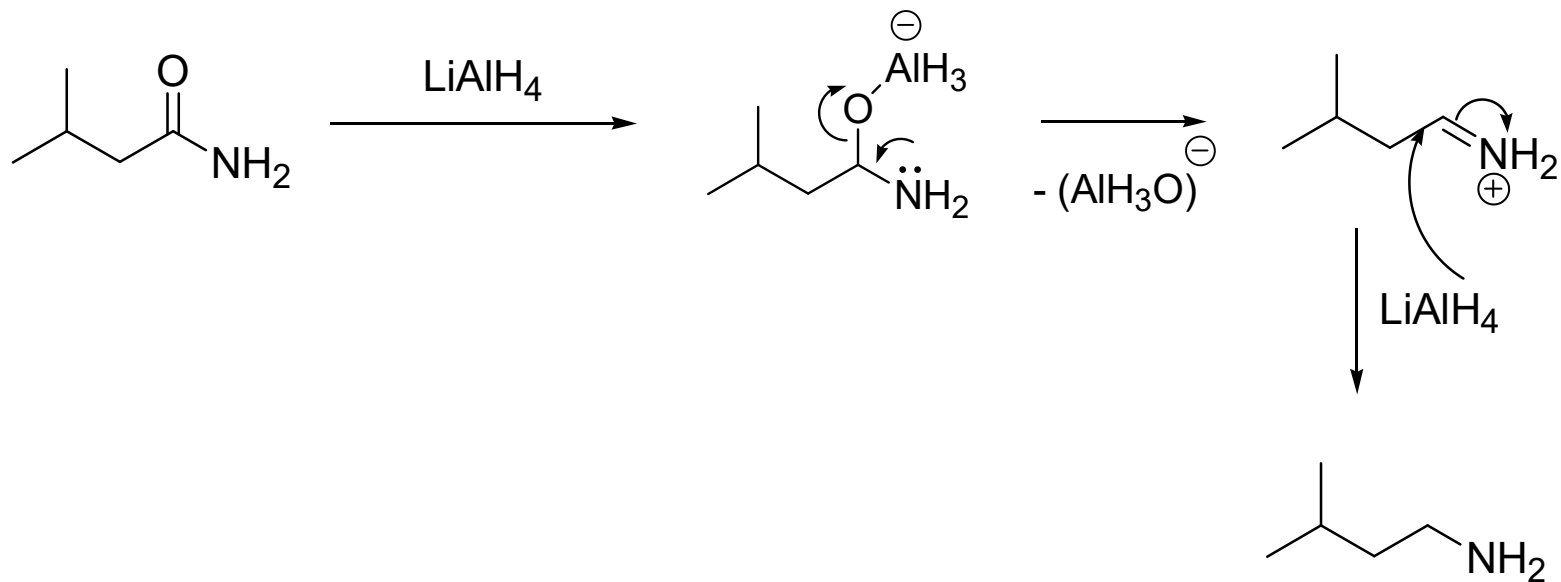
Kyselá hydrolyza amidů



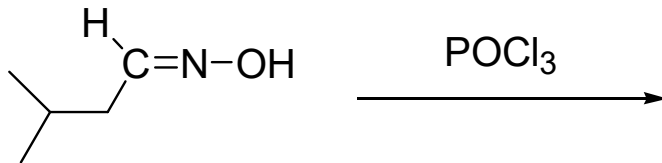
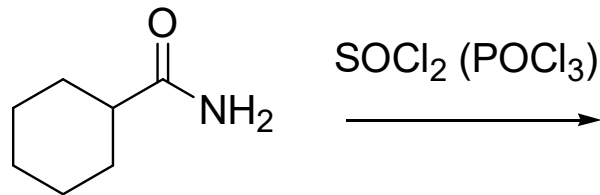
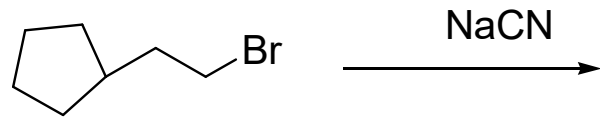
Bazická hydrolyzá amidů



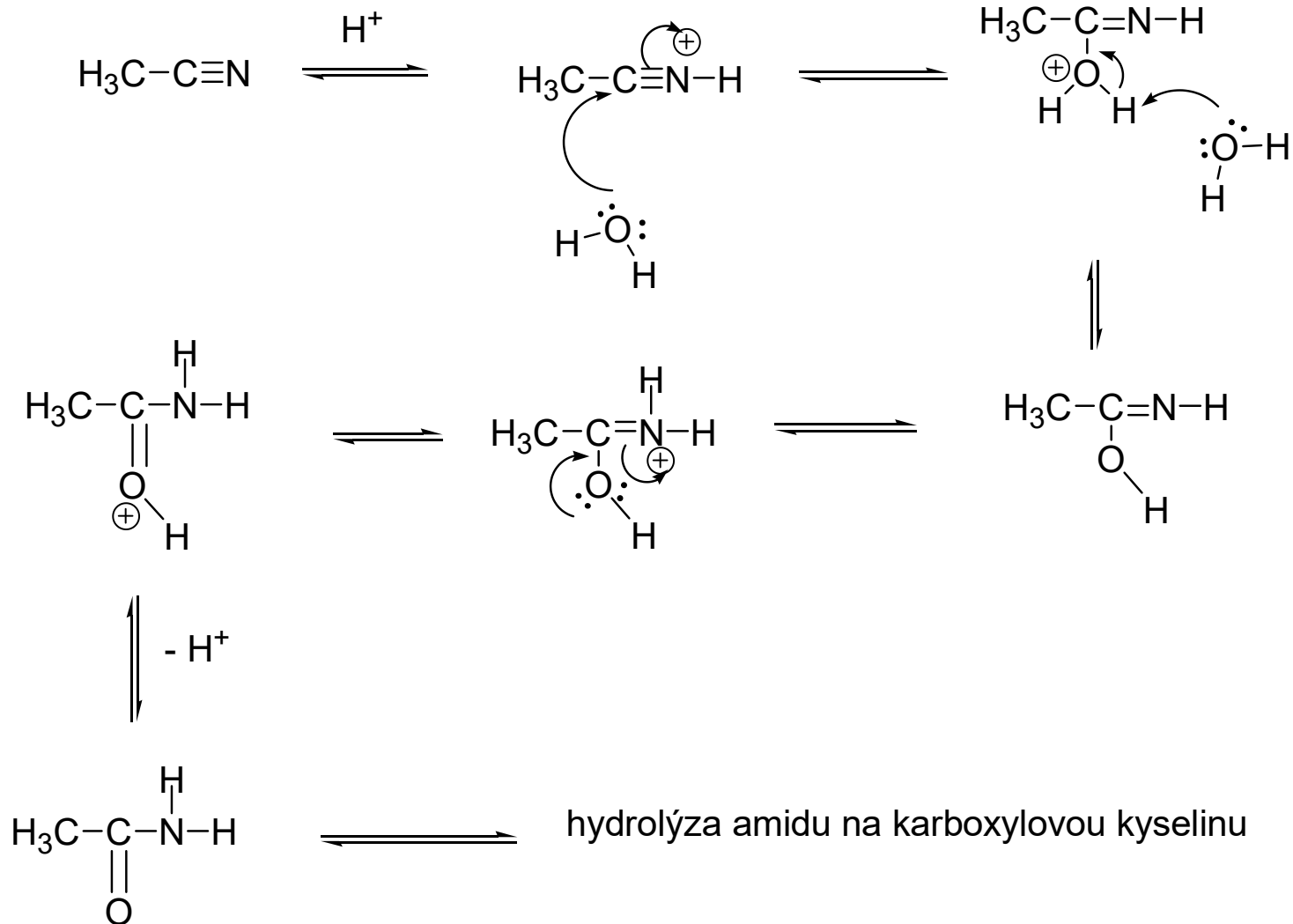
Redukce amidů



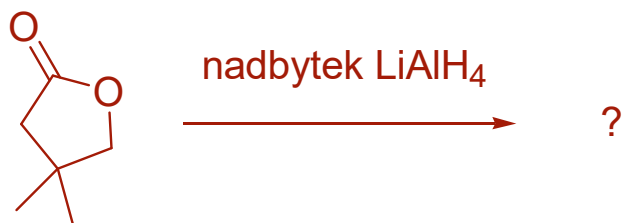
NITRILY KARBOXYLOVÝCH KYSELIN



Hydrolýza nitrilů



LAKTONY A LAKTAMY



Doplňte produkty reakcí

