

Hydrolysis And Dehydration Of Amides

from chapter(s) _____ in the recommended text

A. Introduction

B. Reactivity Of Amides

less

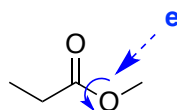
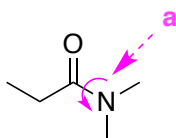
less

sp^2

pyramidal and sp^3

less

a than **e**.

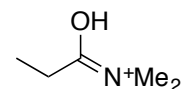
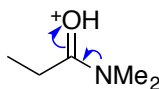
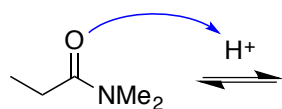
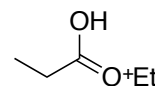
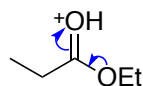
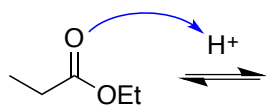


2

1 at elevated temperatures.

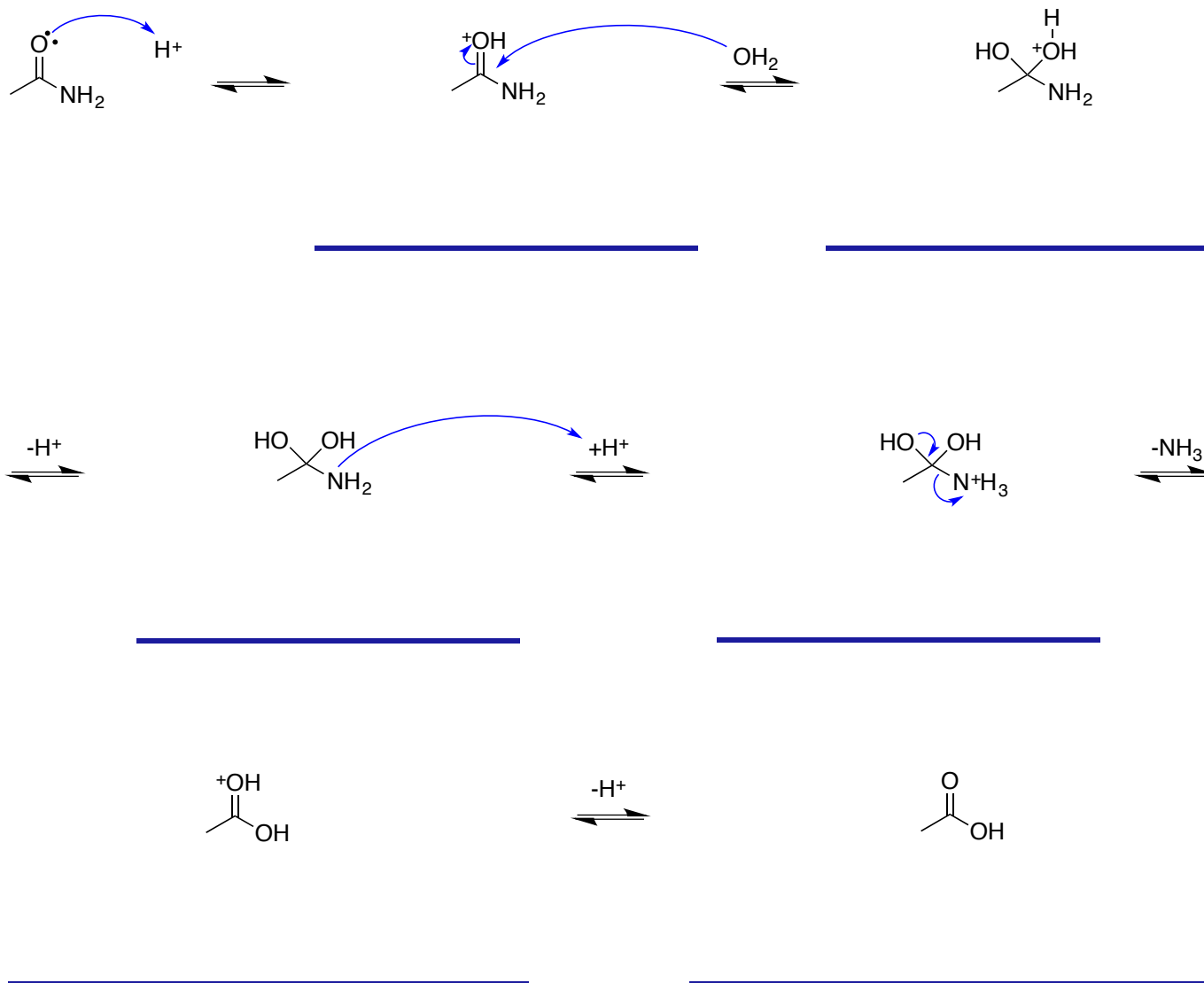
more

less



C. Hydrolysis Of Amides

tetrahedral

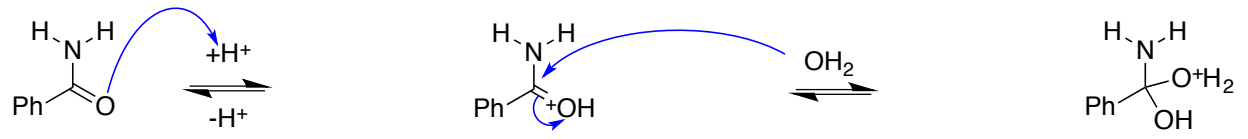


NH_4^+

irreversible

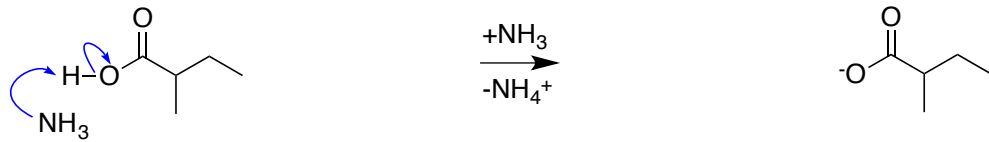
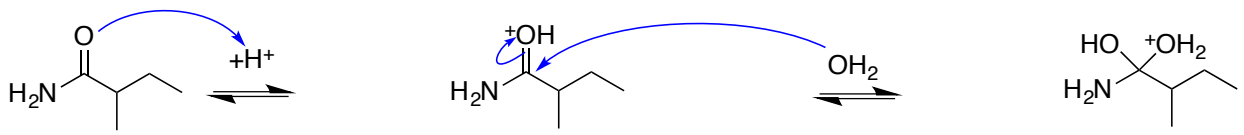
NH_4^+ is not nucleophilic and cannot attack carbonyl to form amide.

because carbonyl group on amide cannot be protonated under neutral condition, leading to inactivated carbonyl, then water cannot attach to carbonyl carbon.

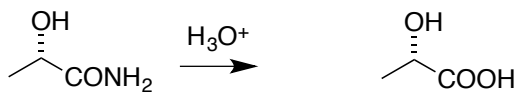


tetrahedral intermediate

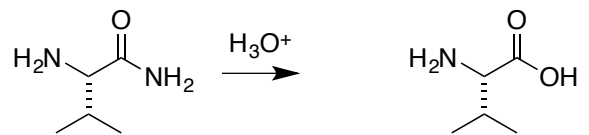




carboxylate



lactic acid



valine

D. Proteases

Function

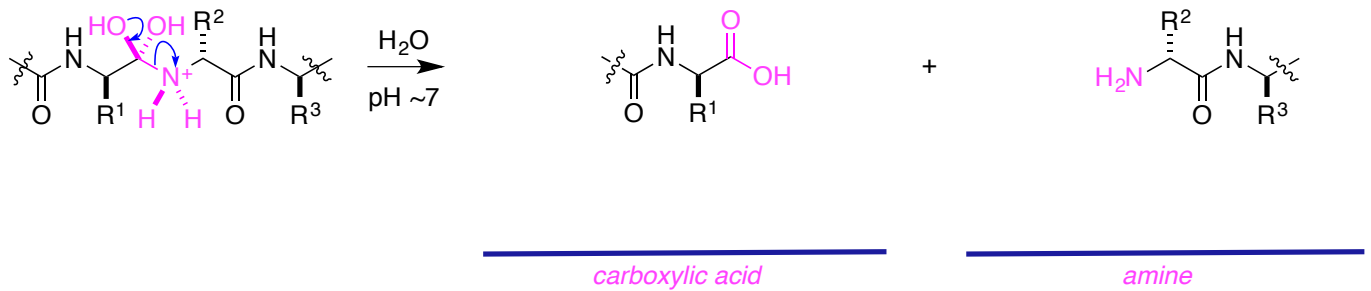
esterases
proteases.

~7

Catalytic
enzymes
hydrogen bonding

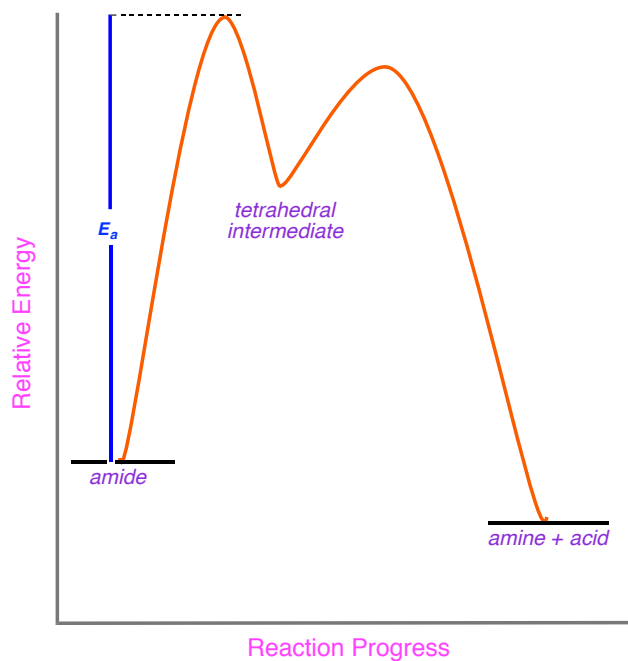
do not
active-

degrades

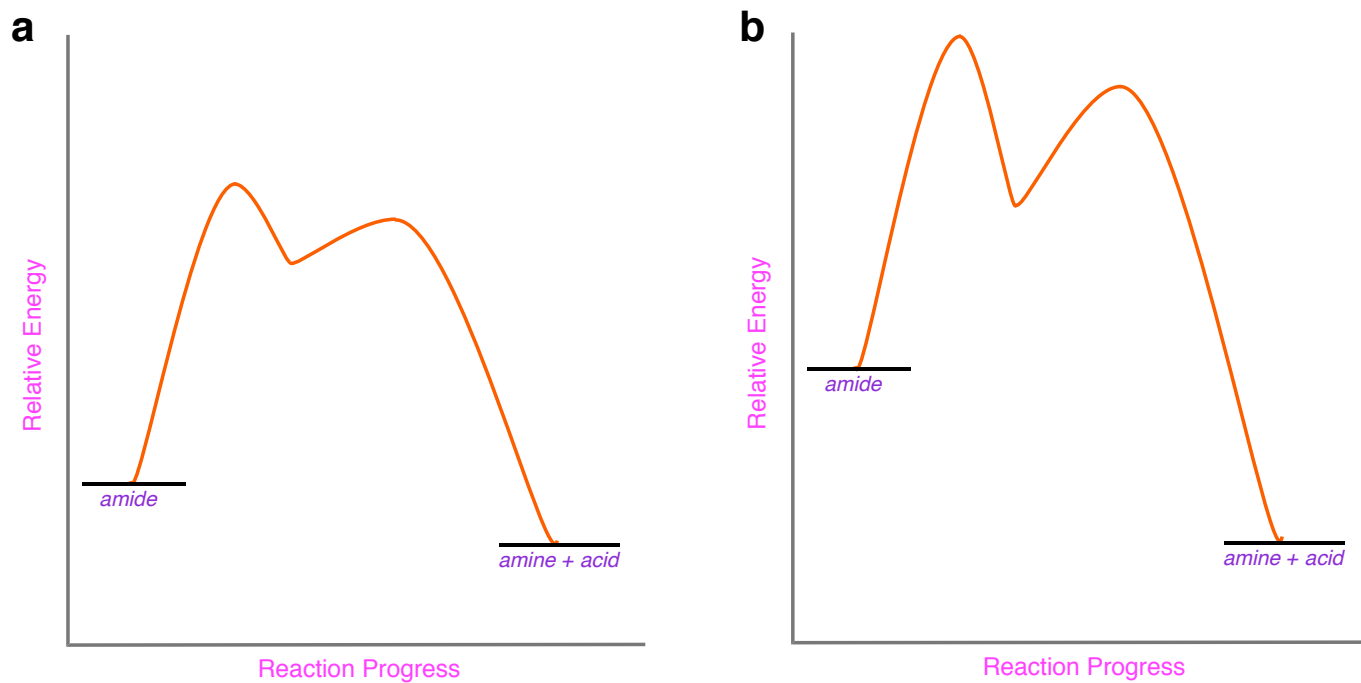


Catalysis

kinetic



destabilizing the substrate and/or *stabilizing the intermediate*.



situation **b**.
is the way

Protease Inhibitors

9 proteins

enzymes are *proteins* but not all *proteins* are *enzymes*.

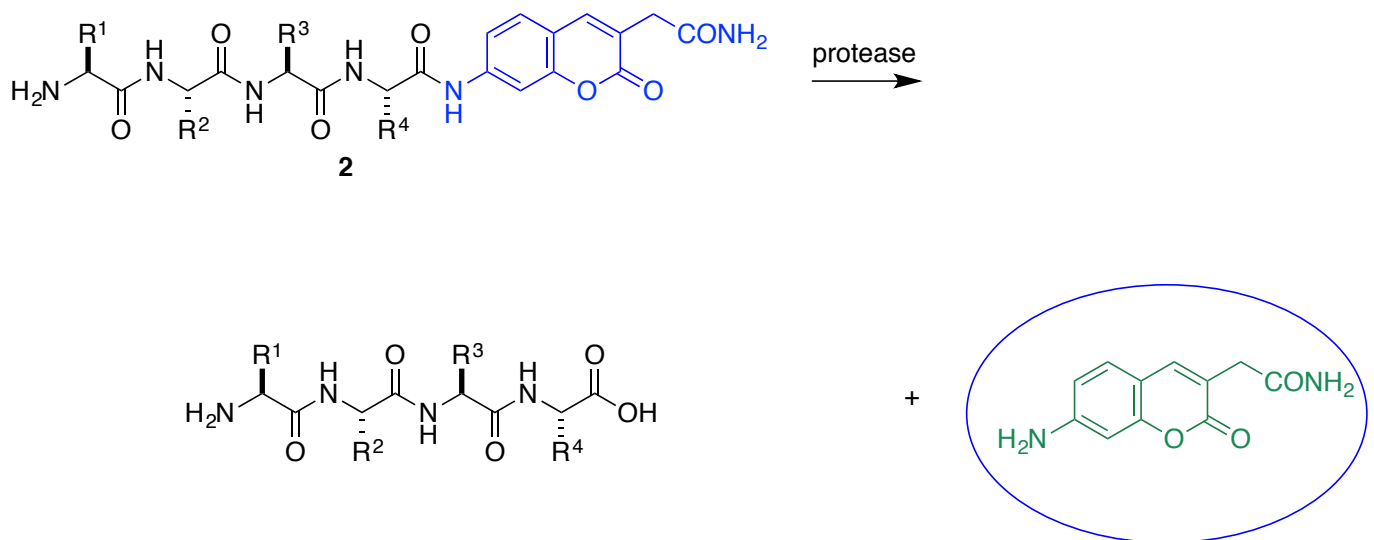
active- site

a *high* affinity

the *alcohol* functionality

mimic the tetrahedral intermediate in amide hydrolysis.

Detection Of Protease Substrate Selectivity

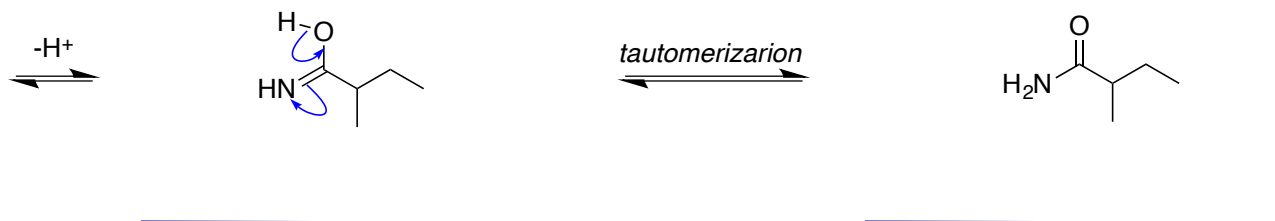
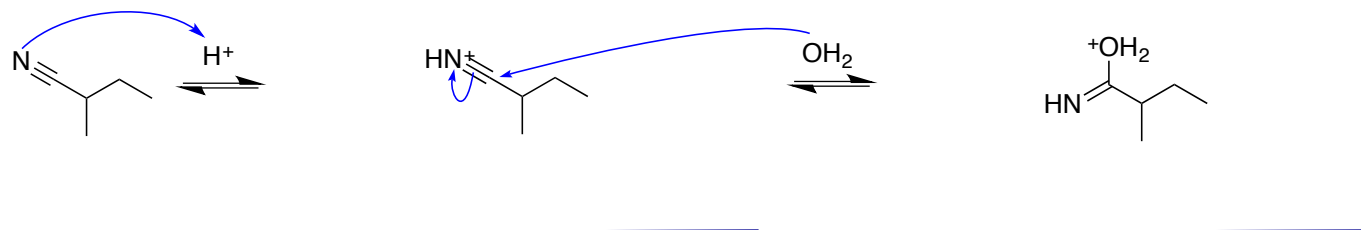
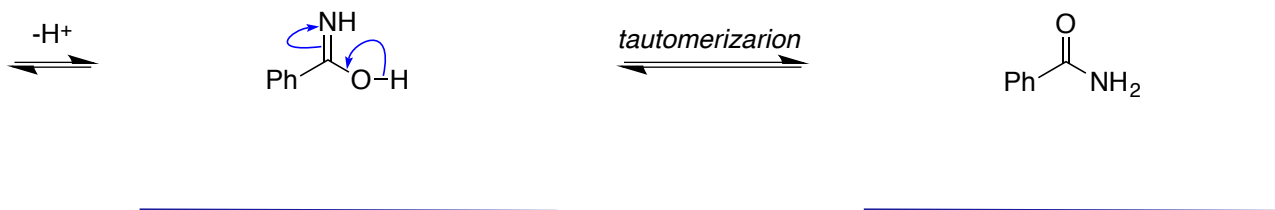
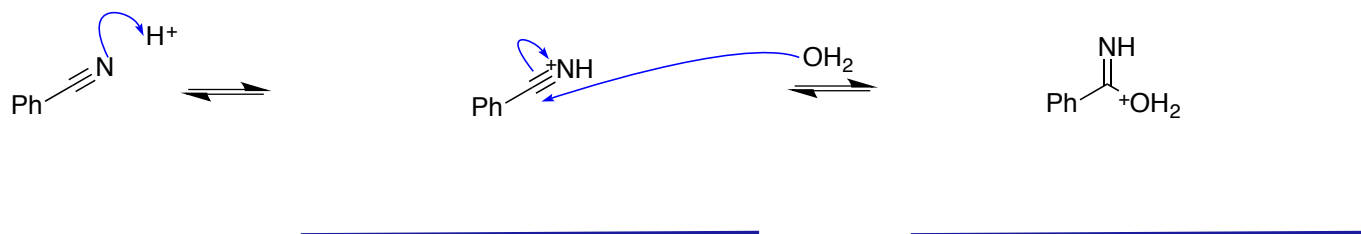


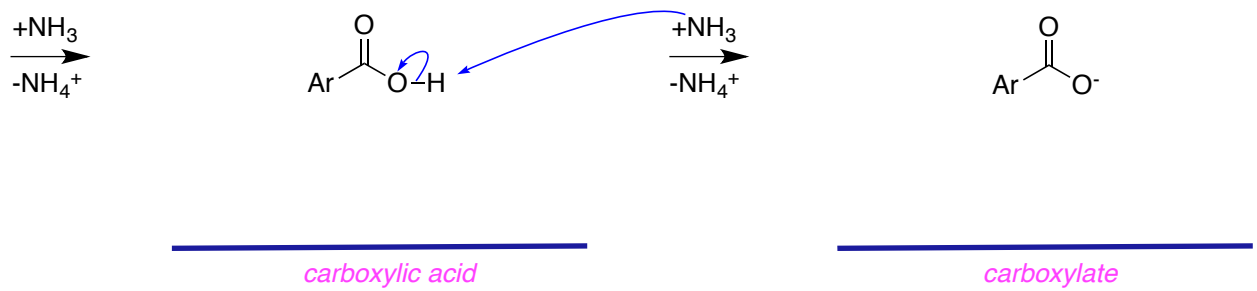
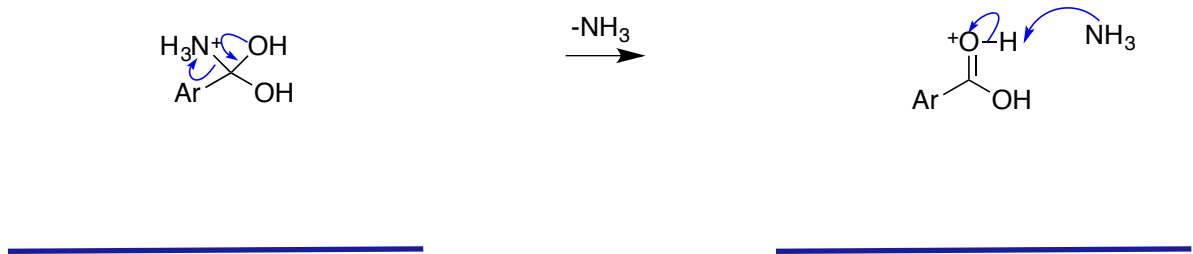
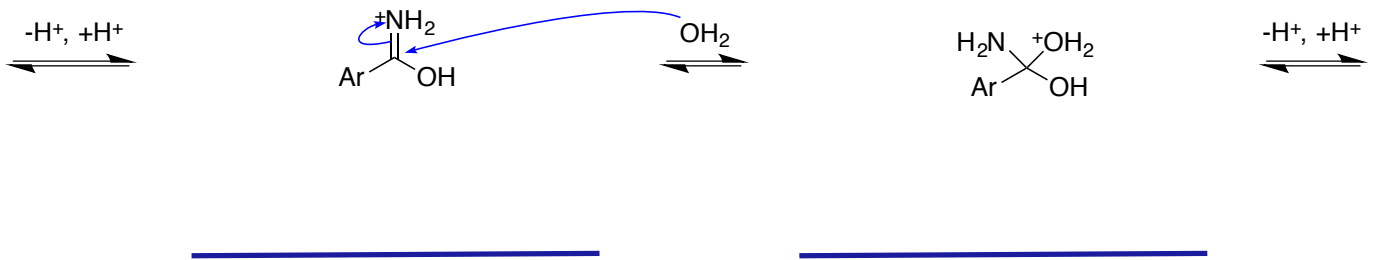
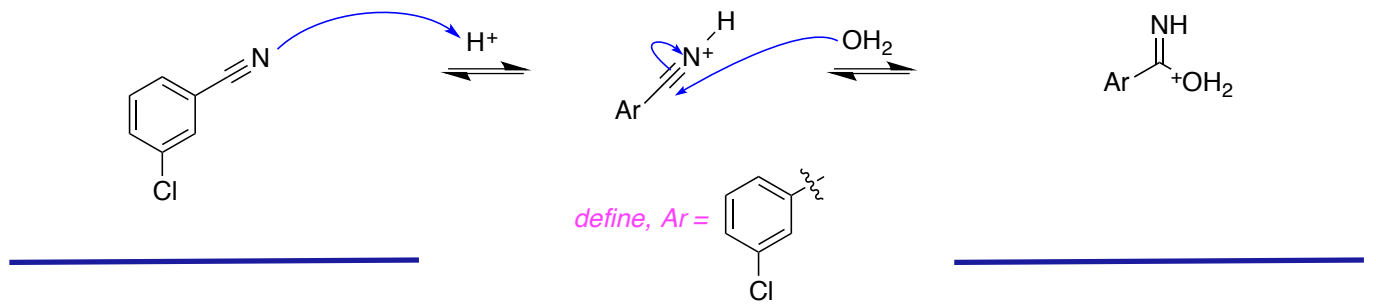
fluorescence.

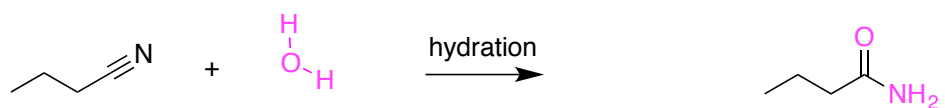
E. Hydrolysis Of Nitriles Involves Amide Intermediates

carboxylic acids,
partial.

Tautomerization







amide



carboxylic acid

F. Dehydration Of Amides



