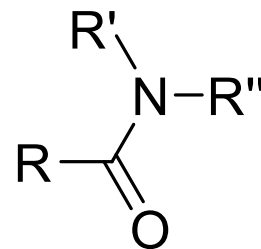
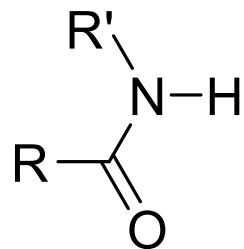
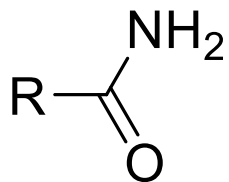
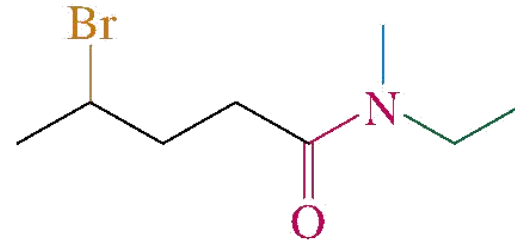
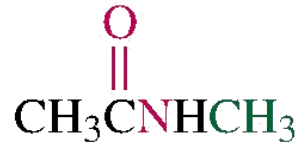


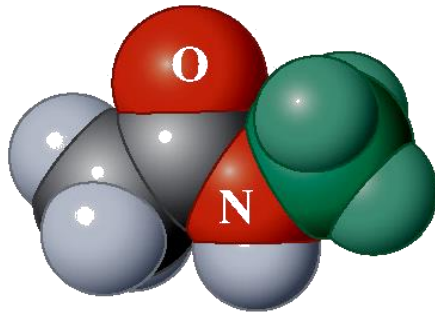
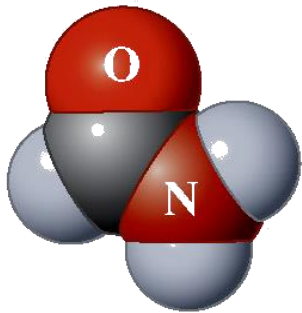
Αμίδια



Αμίδια



4-Βρωμο-N-αιθυλο-N-μεθυλοπενταναμίδιο
(Ένα τριτοταγές αμίδιο)

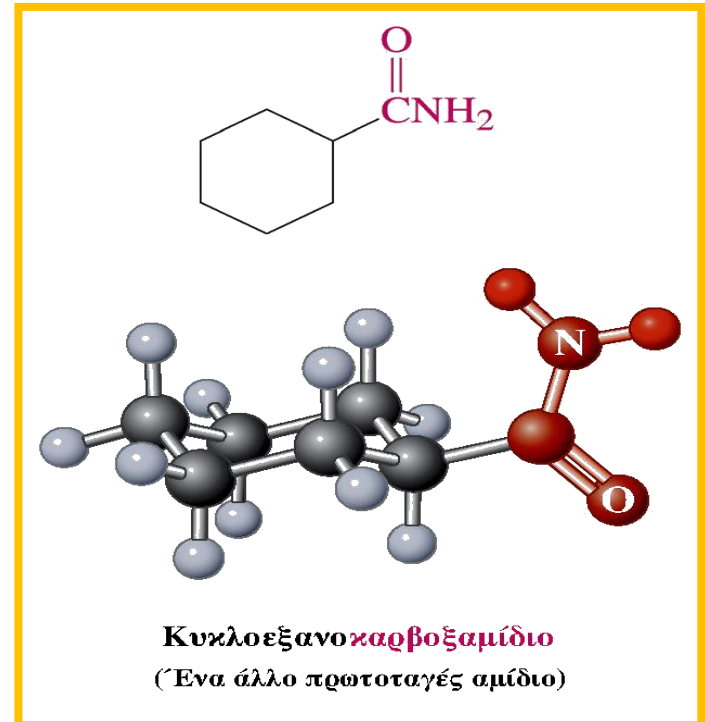


Φορμαμίδιο

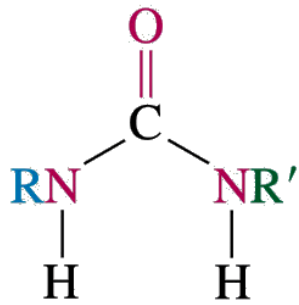
(Ένα πρωτοταγές αμίδιο:
δύο υδρογόνα
συνδεδεμένα στο άζωτο)

N-Μεθυλακεταμίδιο

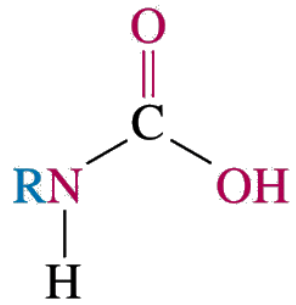
(Ένα δευτεροταγές αμίδιο:
ένα υδρογόνο
συνδεδεμένο στο άζωτο)



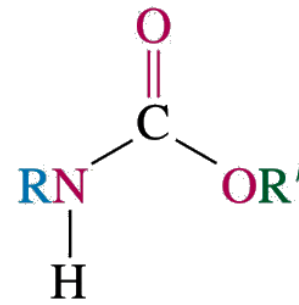
Κυκλοεξανοκαρβοξαμίδιο
(Ένα άλλο πρωτοταγές αμίδιο)



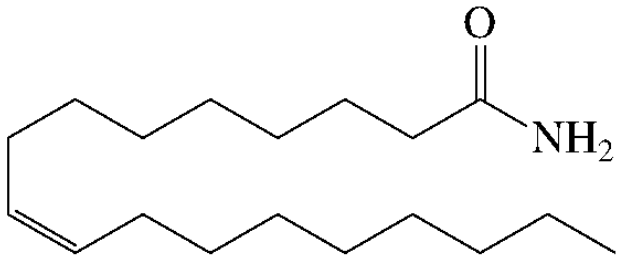
Μία ουρία



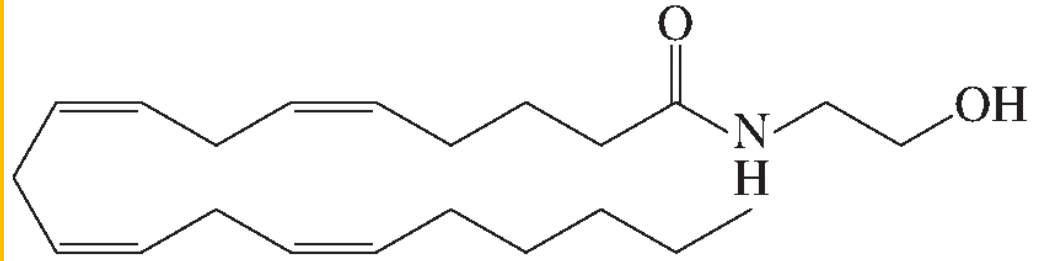
Ένα καρβαμικό οξύ



Ένας καρβαμικός εστέρας (Ουρεθάνη)

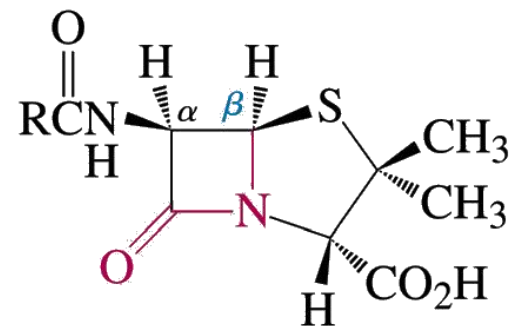
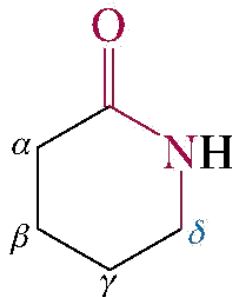
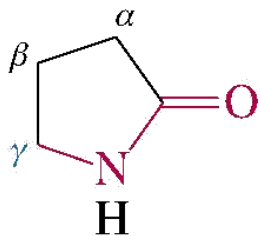


(Z)-9-Δεκαοκτεναμίδιο



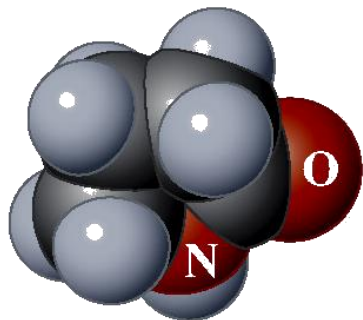
Ανανδαμίδιο

Λακτάμες

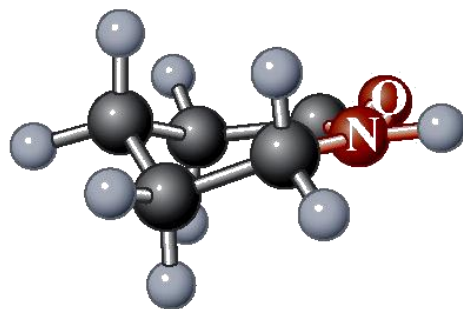


Πενικιλίνη

(Ένα παράγωγο β -λακτάμης)

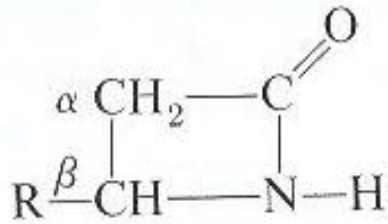


γ -Βουτυρολακτάμη
(Συστηματική ονομασία:
αζα-2-κυκλοπεντανόνη)

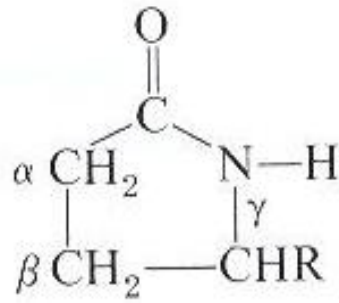


δ -Βαλερολακτάμη
(Συστηματική ονομασία:
αζα-2-κυκλοεξανόνη)

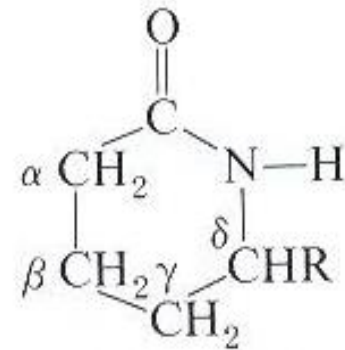
Lactams



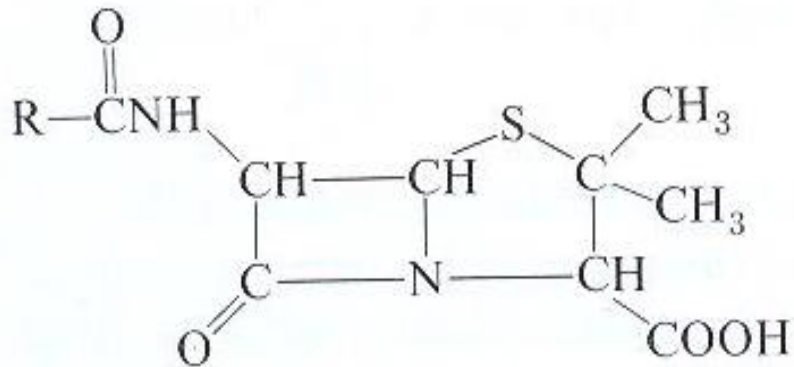
A β -lactam



A γ -lactam



A δ -lactam

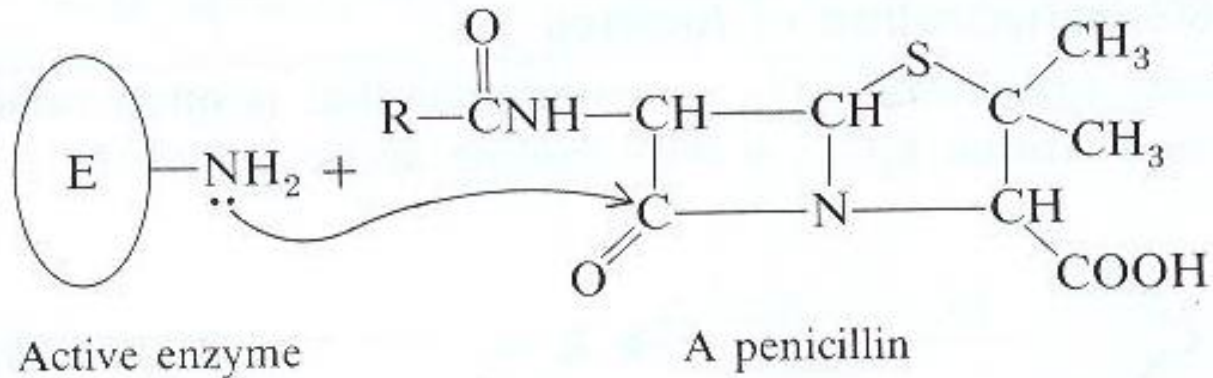


R = C₆H₅CH₂— (penicillin G)

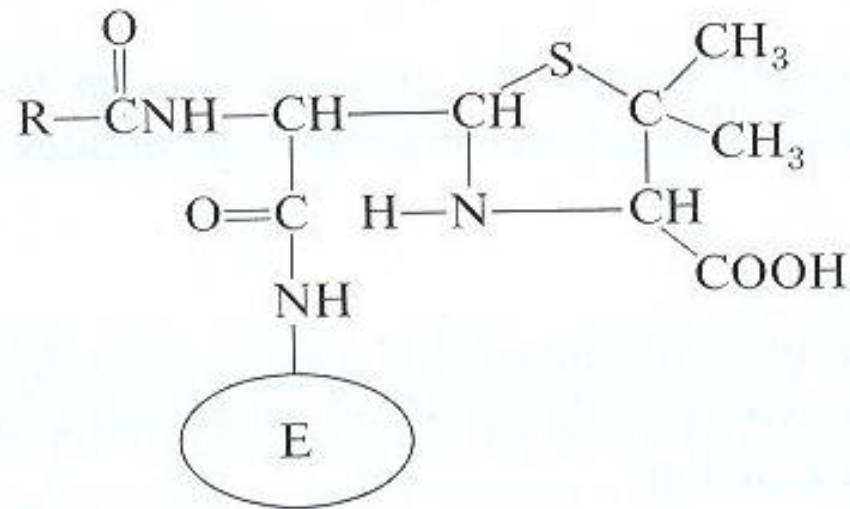
R = C₆H₅CH— (ampicillin)
 |
 NH₂

R = C₆H₅OCH₂— (penicillin V)

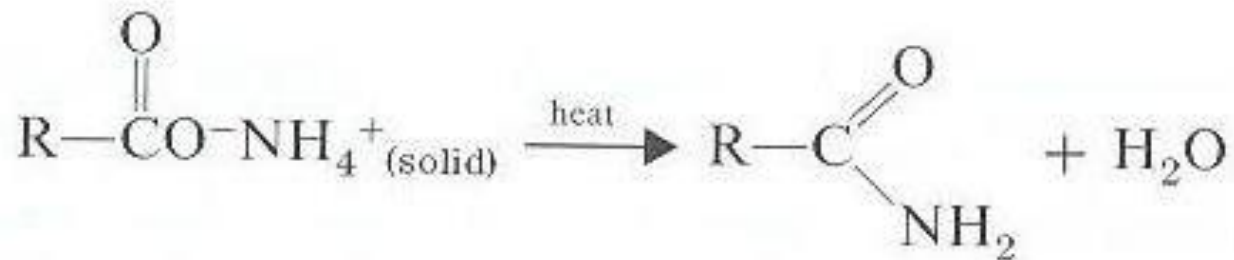
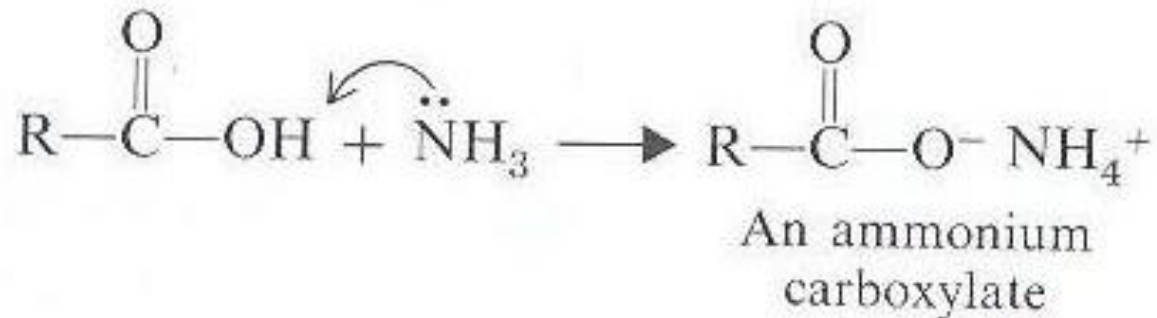
Δράση πενικιλίνης

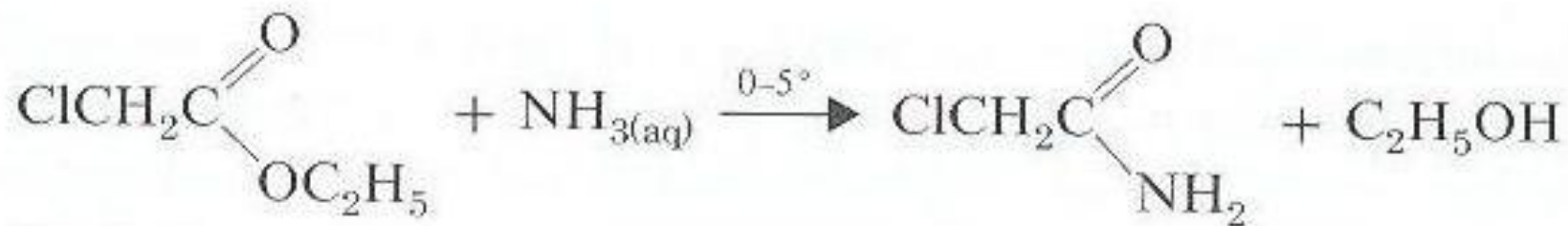
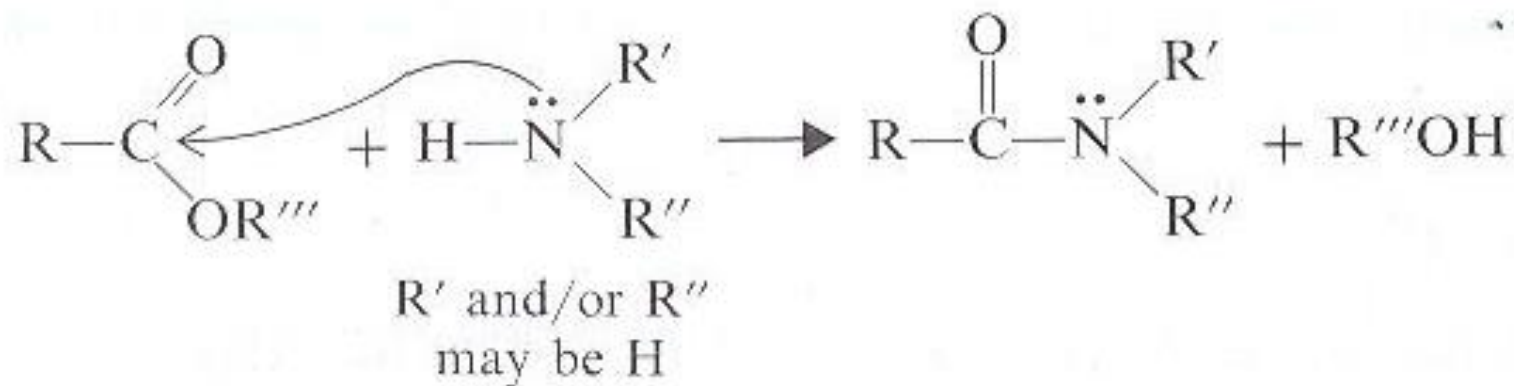


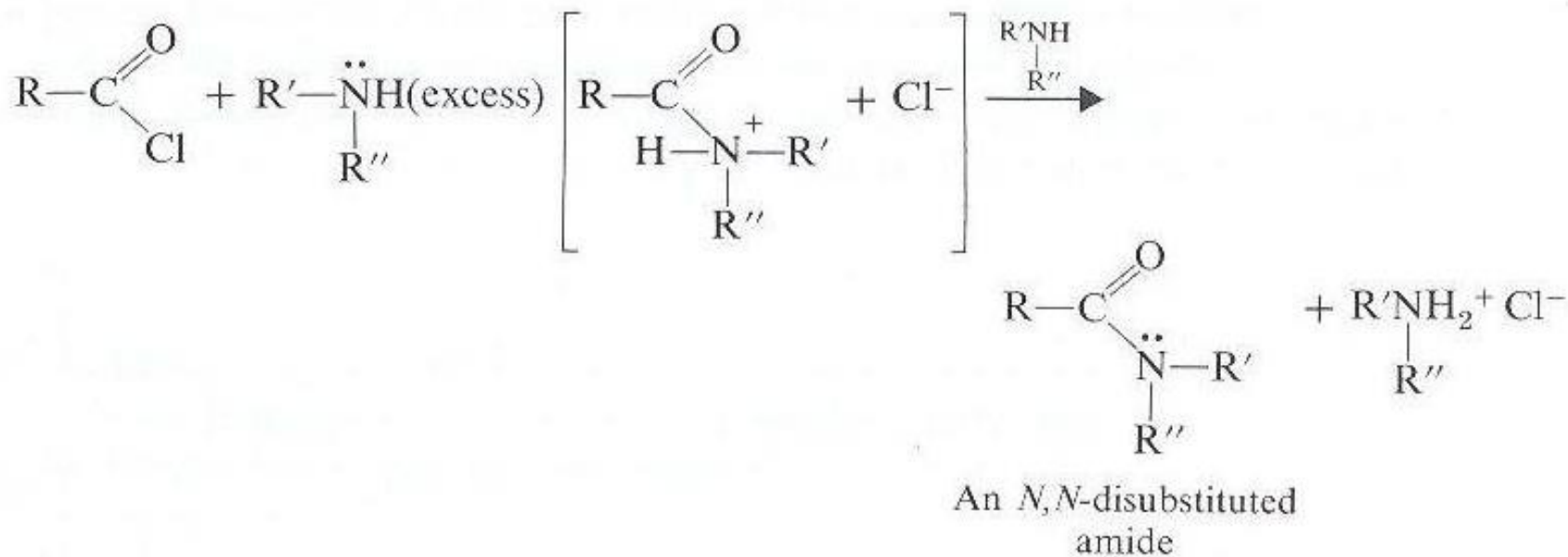
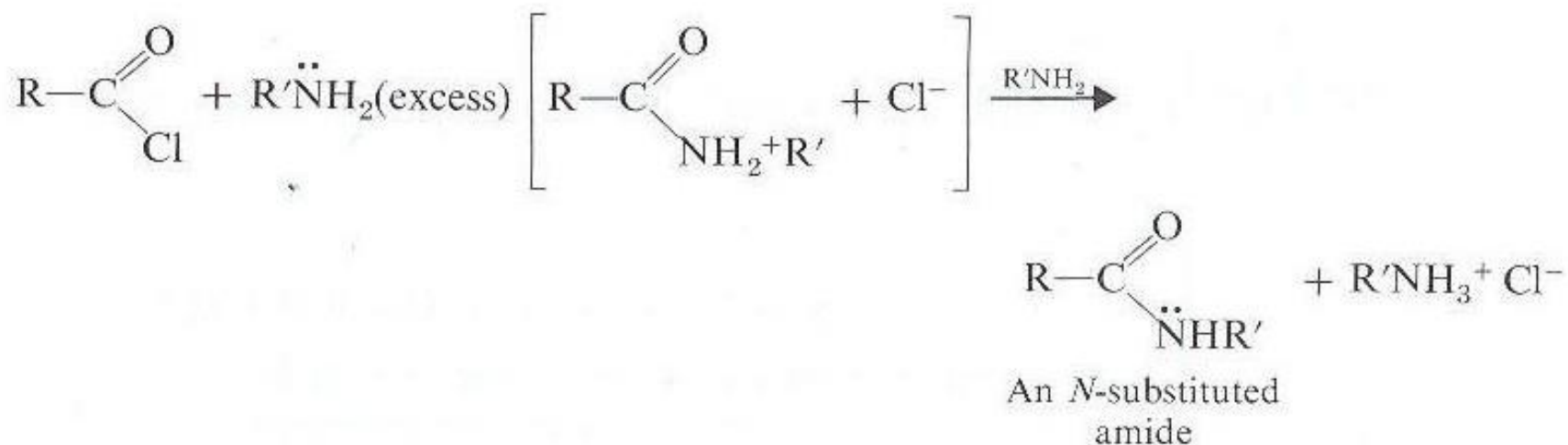
Τρανσπεπτιδάση

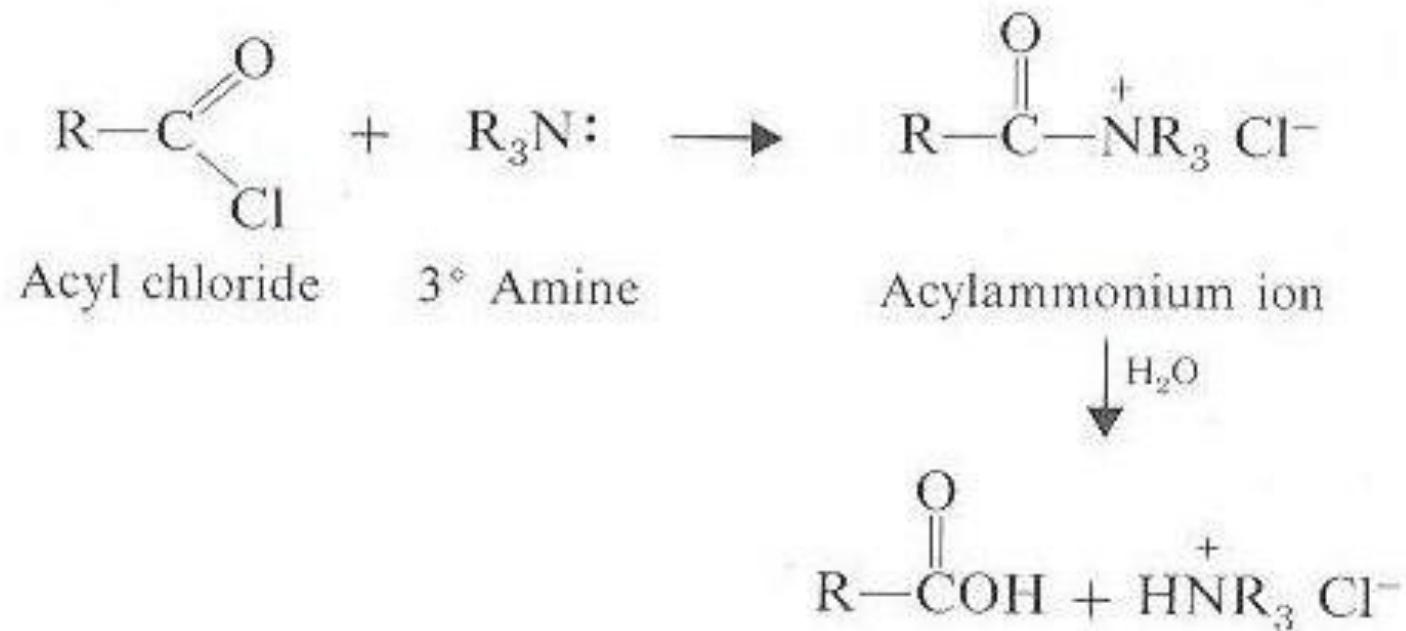


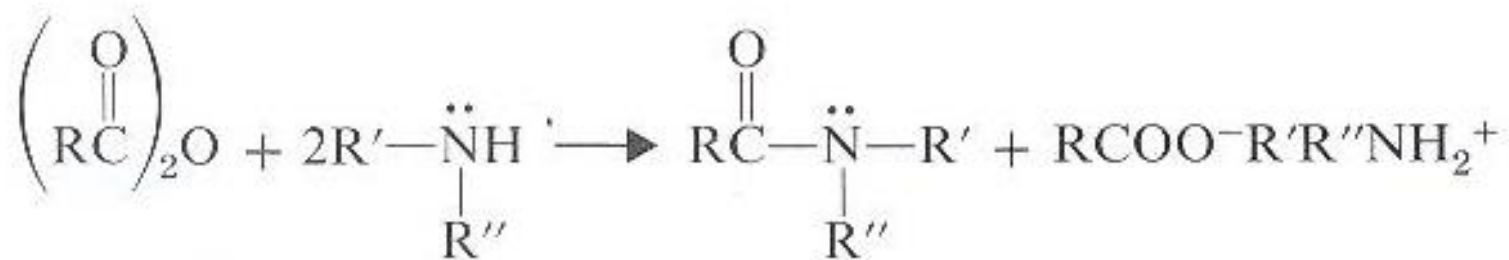
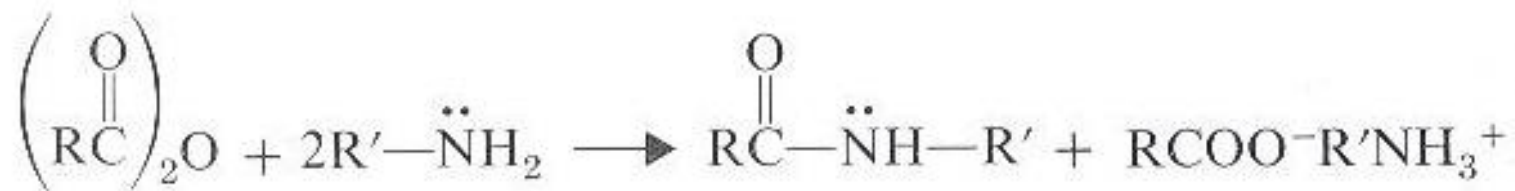
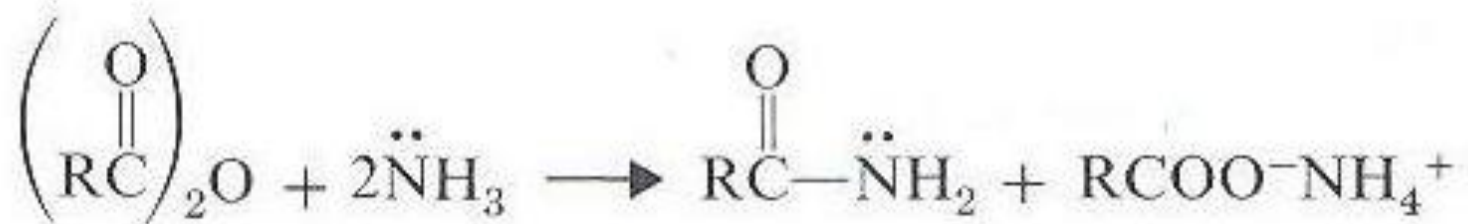
Παρασκευές Αμιδιών



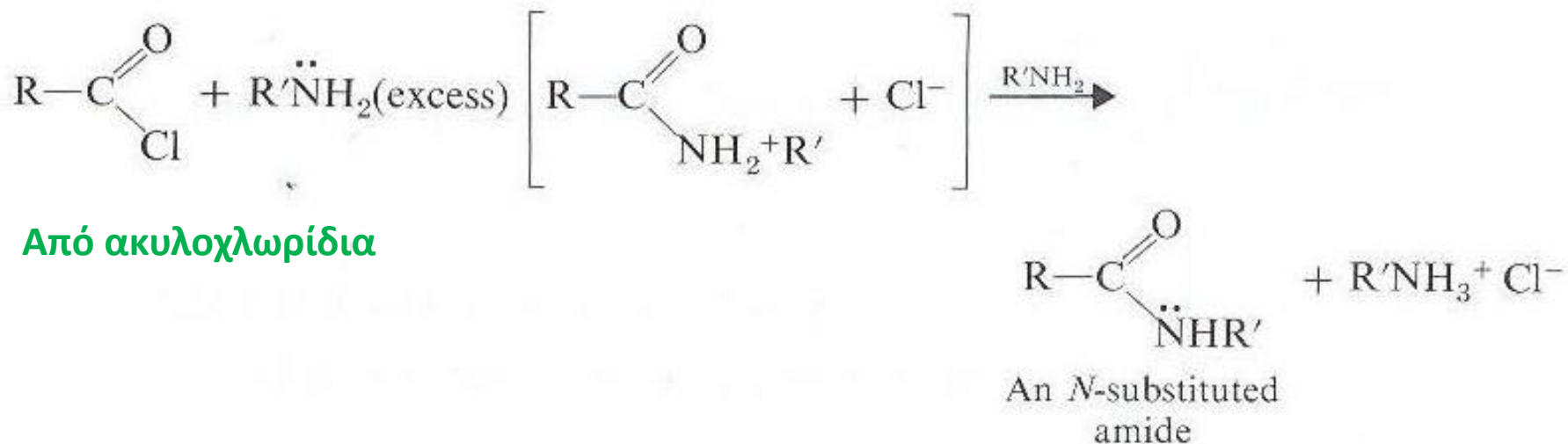




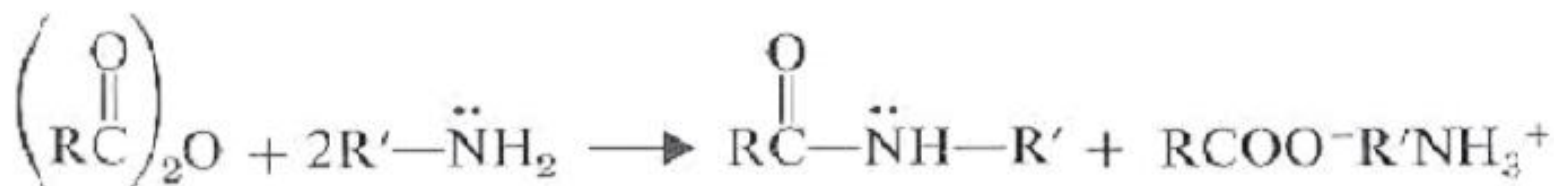




Πιο σημαντικές συνθέσεις

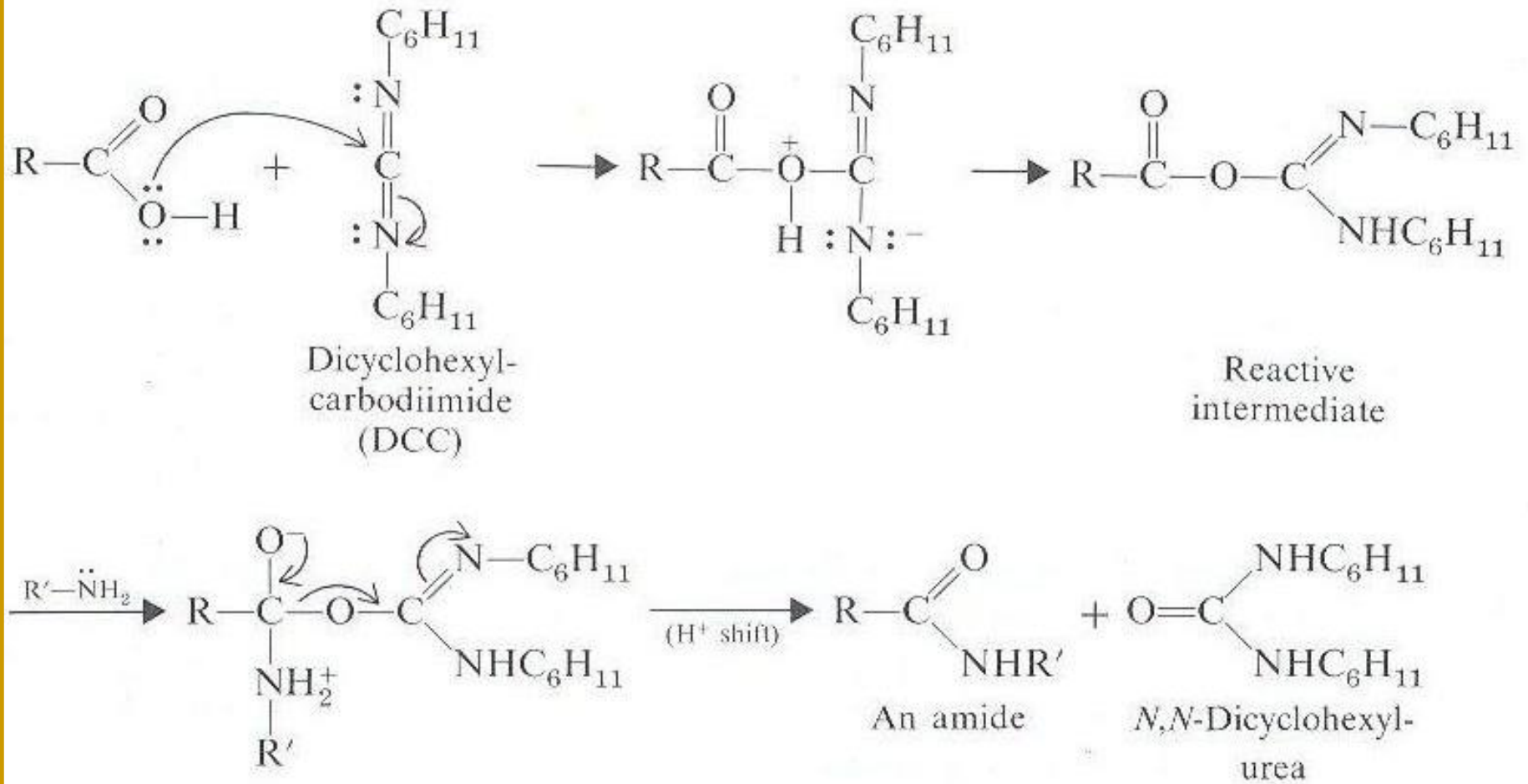


Από ακυλοχλωρίδια

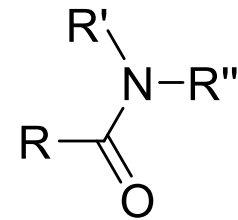
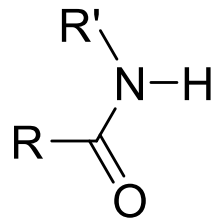
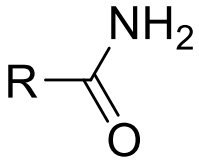


Από ανυδρίτες

Με δικυκλοεξυλοκαρβοδιμίδιο (DCC)

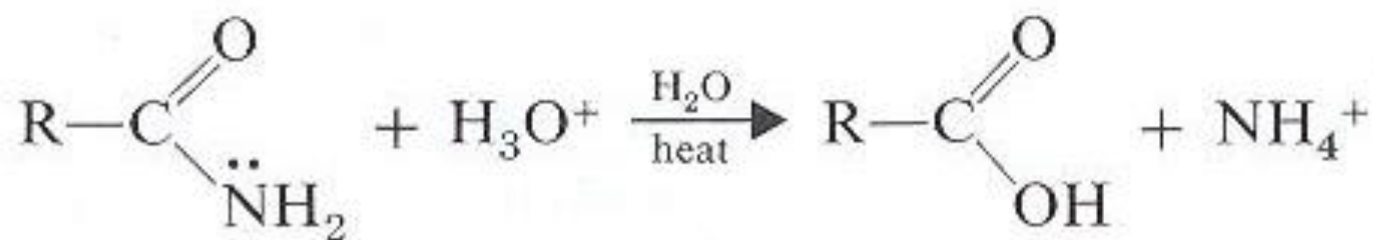


Ιδιότητες Αμιδίων

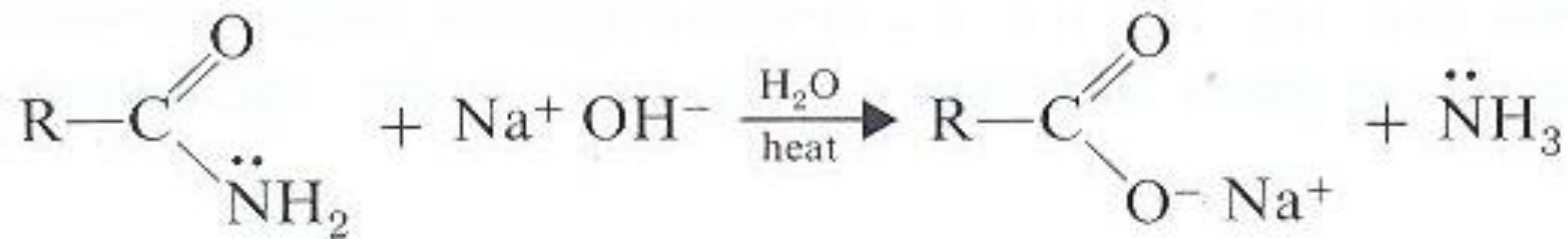


Υδρόλυση, Αναγωγή, Αφυδάτωση

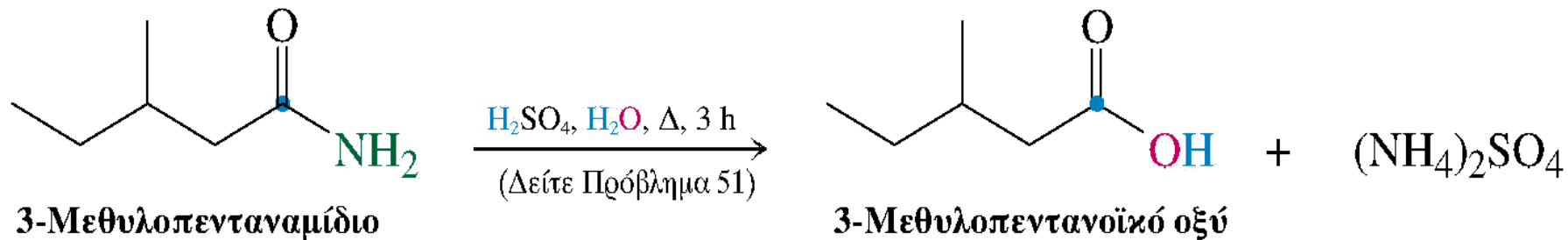
Acidic Hydrolysis



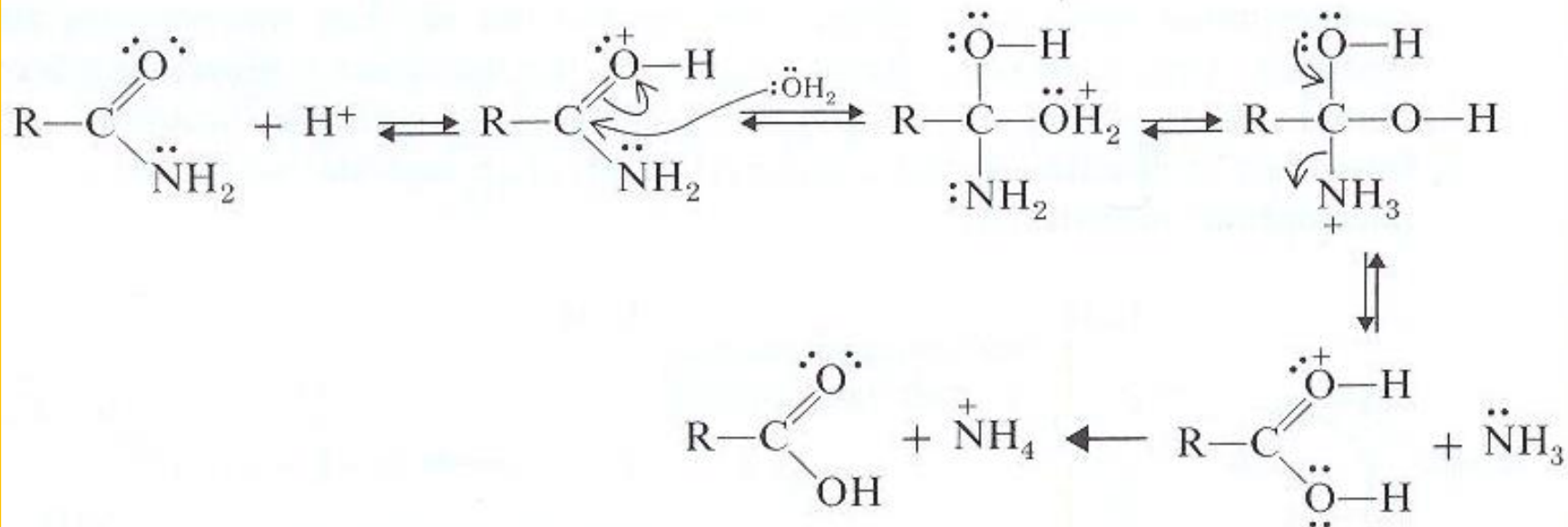
Basic Hydrolysis



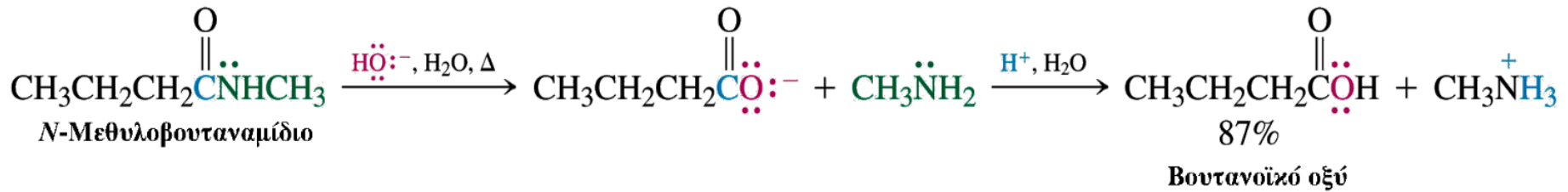
Όξινη υδρόλυση αμιδίου



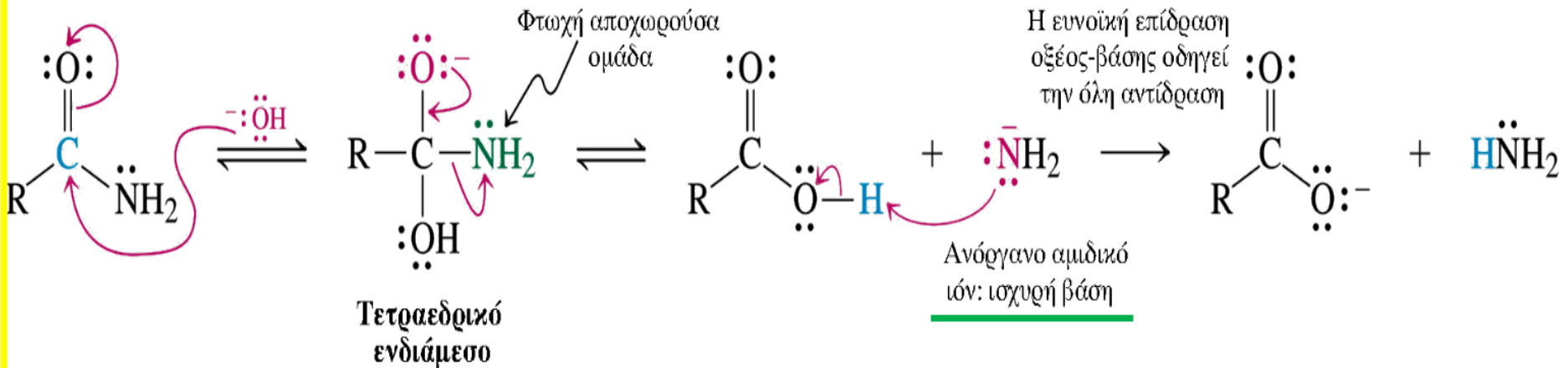
Μηχανισμός όξινης υδρόλυσης



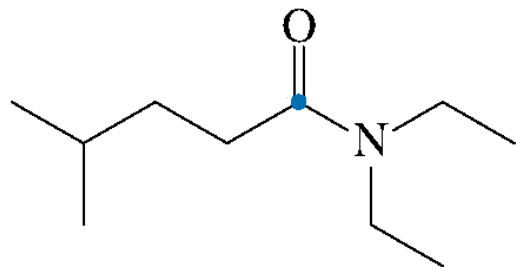
Βασική υδρόλυση αμιδίου



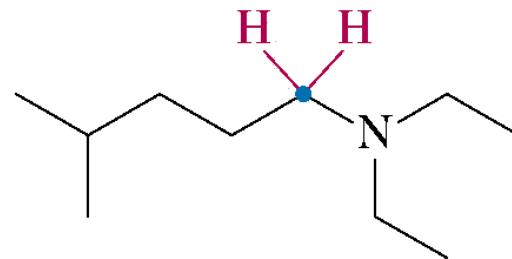
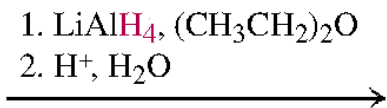
Μηχανισμός υδρόλυσης αμιδίων από υδατικό διάλυμα βάσης



Αναγωγή αμιδίου σε αμίνη



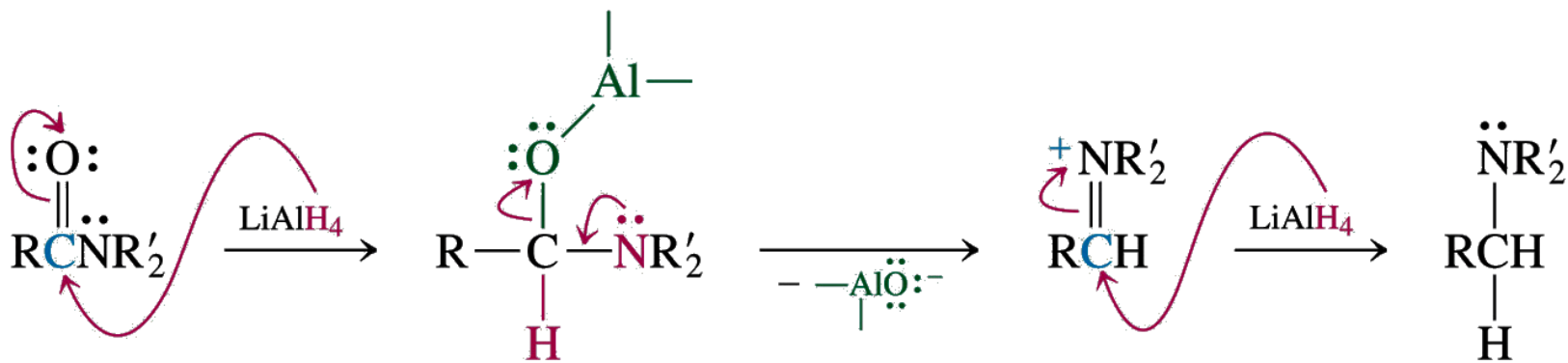
N,N-Διαιθυλο-4-μεθυλοπενταναμίδιο



85%

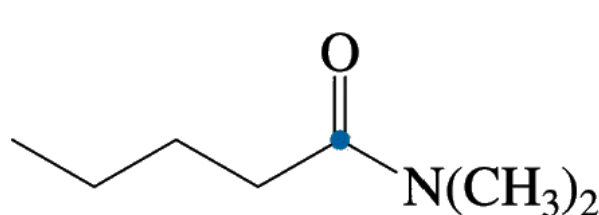
N,N-Διαιθυλο-4-μεθυλοπενταναμίνη

Μηχανισμός αναγωγής αμιδίων από LiAlH_4

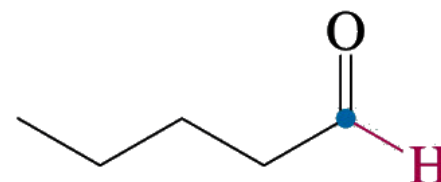
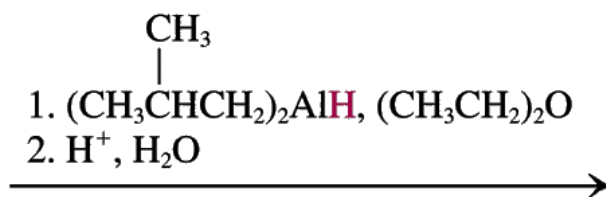


Ιόν ιμινίου

Αναγωγή αμιδίου σε αλδεΐδη

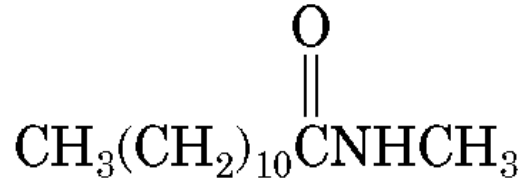


N,N-Διμεθυλοπενταναμίδιο

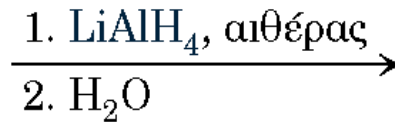


92%
Πεντανάλη

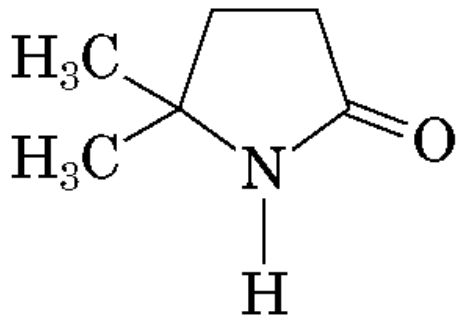
Αναγωγή



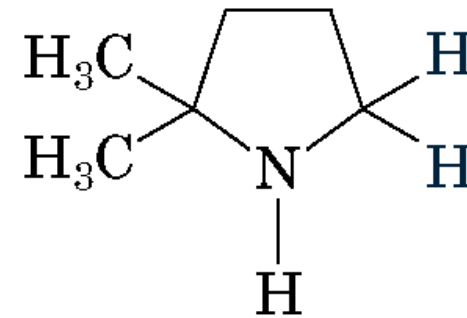
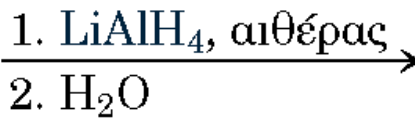
N-Μεθυλοδωδεκαναμίδιο



Δωδεκυλομεθυλαμίνη (95%)



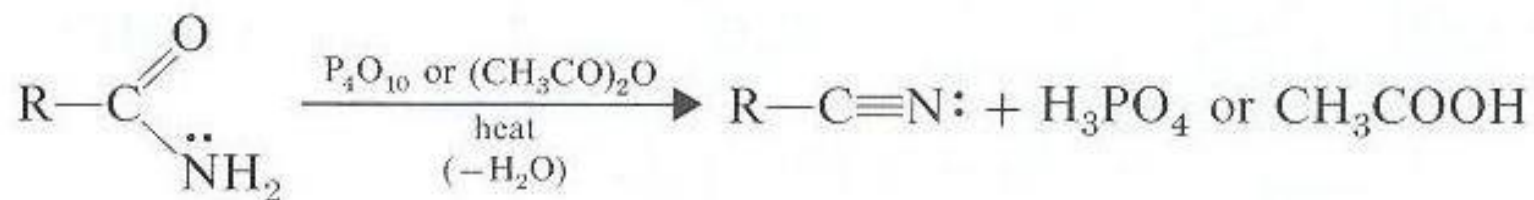
Μια λακτάμη



Κυκλική αμίνη (80%)

Dehydration of Amides

Amides react with P_4O_{10} (a compound that is often called phosphorus pentoxide and written P_2O_5) or with boiling acetic anhydride to form nitriles.

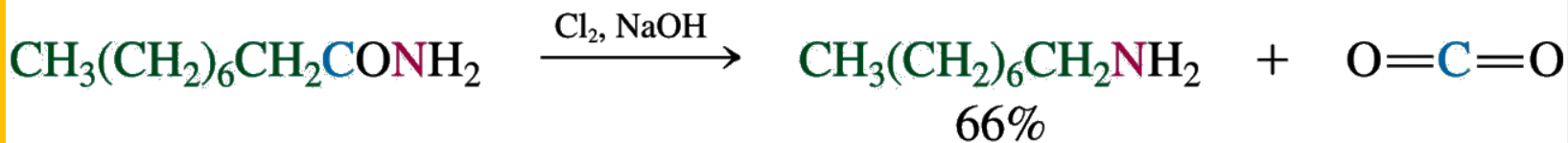
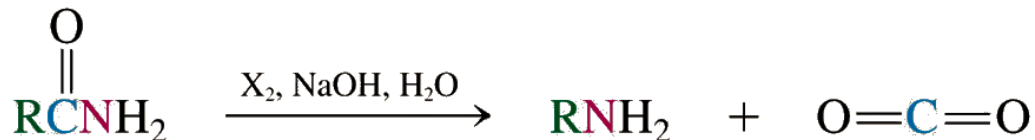


A nitrile

This is a useful synthetic method for preparing nitriles that are not available by nucleophilic substitution reactions between alkyl halides and cyanide ion.

Μετάθεση ή Αποικοδόμηση Hofmann

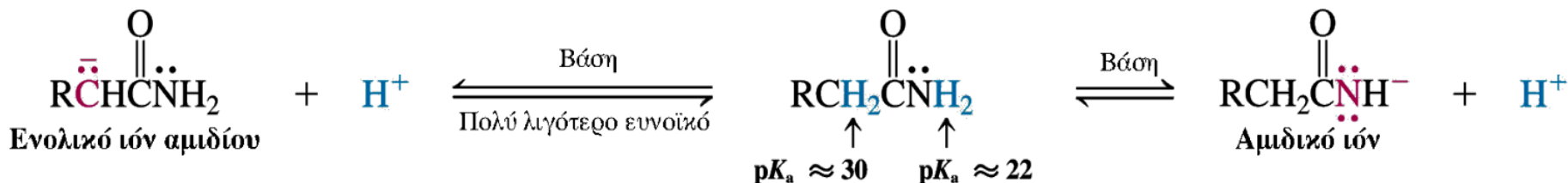
Μετάθεση Hofmann



Εννεαναμίδιο

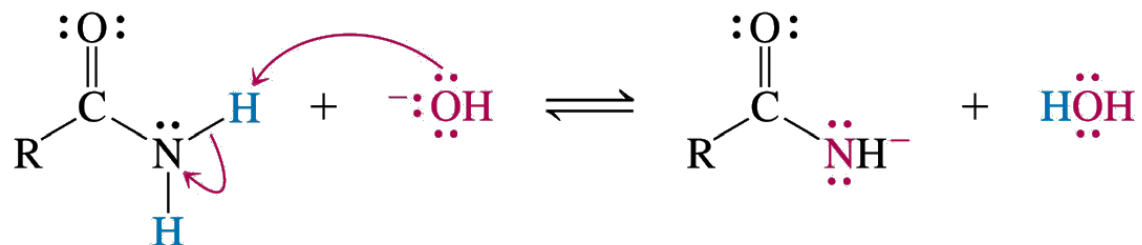
Οκταναμίνη

ΕΠΙΔΡΑΣΗ ΒΑΣΗΣ

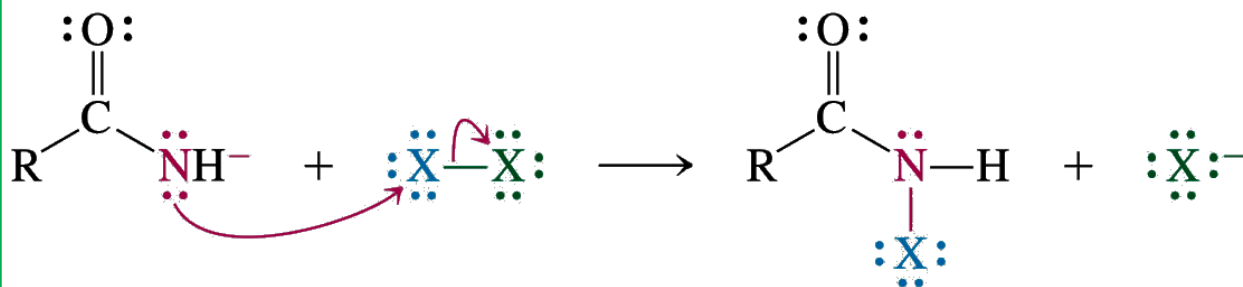


Μηχανισμός της μετάθεσης Hofmann

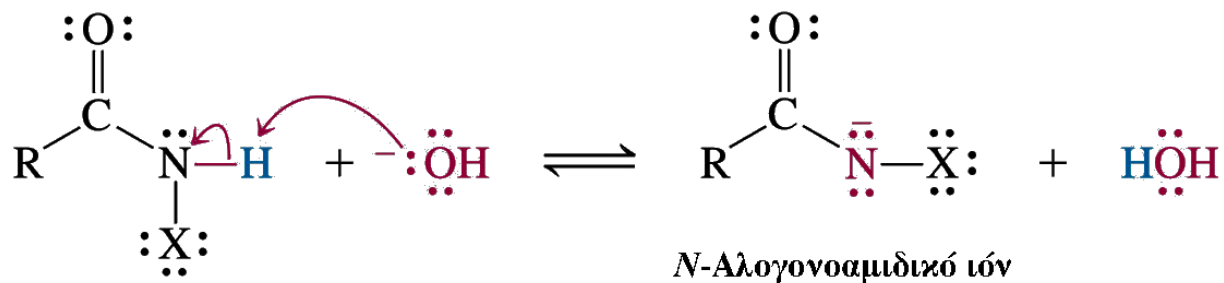
Στάδιο 1. Σχηματισμός αμιδικού ιόντος



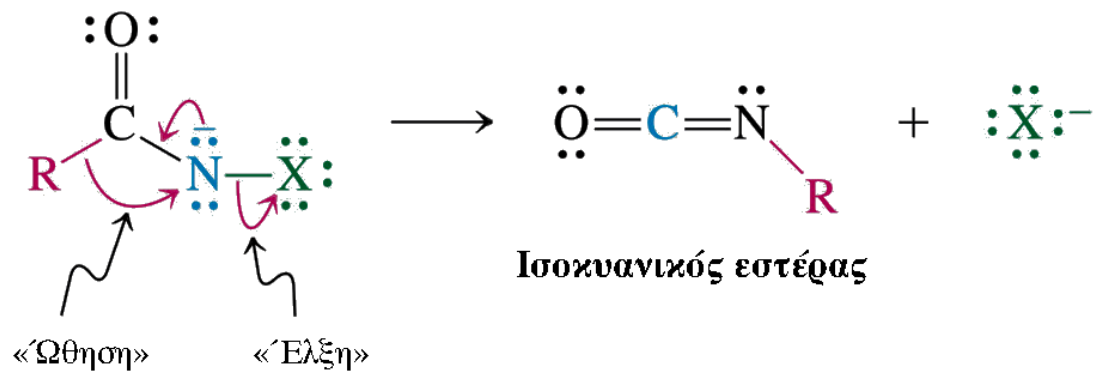
Στάδιο 2. Αλογόνωση



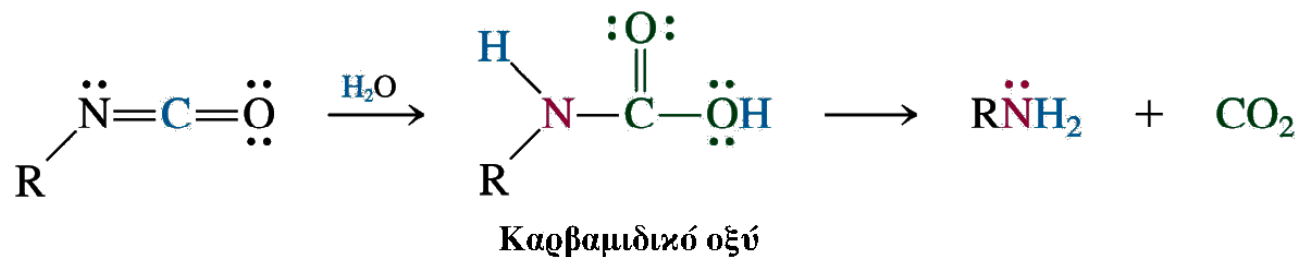
Στάδιο 3. Σχηματισμός *N*-αλογοαμιδικού ιόντος



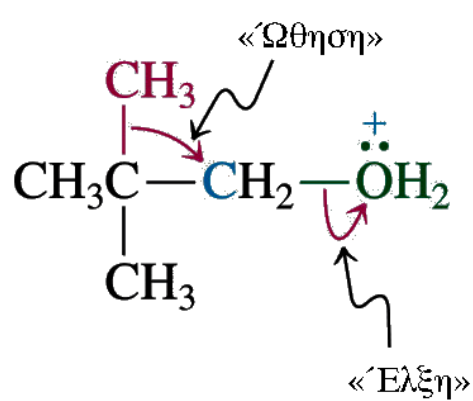
Στάδιο 4. Αναδιάταξη με απόσπαση αλογονούχου ιόντος



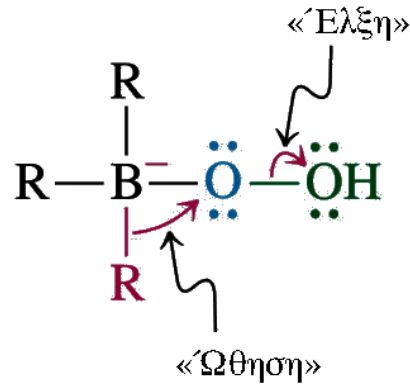
Στάδιο 5. Ενυδάτωση προς καρβαμδικό οξύ και διάσπαση



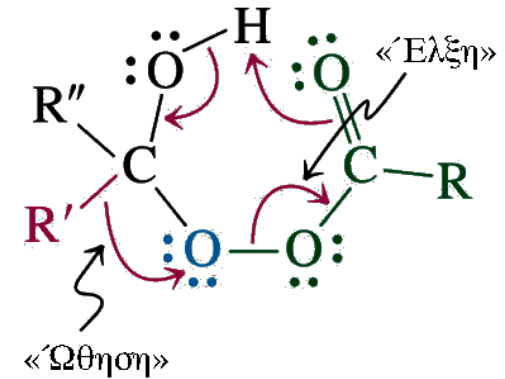
Μεταβατικές καταστάσεις «ώθησης-έλξης»



Καταλυόμενη από οξέα
αναδιάταξη της 2,2-διμεθυλο-
1-προπανόλης
(νεοπεντυλο-αλκοόλης)



Οξείδωση
αλκυλοβορανίου



Οξείδωση
Baeyer-Villiger