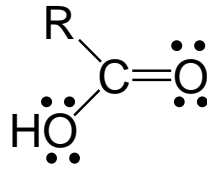
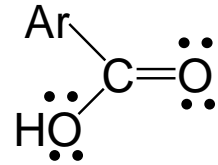


Acidi carbossilici

caratterizzati dal gruppo
carbossilico **-COOH**

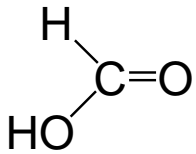


alifatici

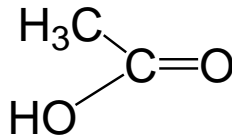


aromatici

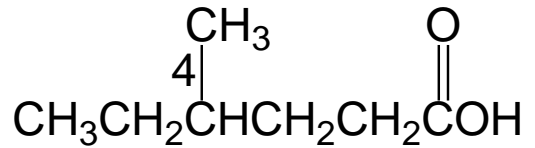
IUPAC catena più lunga contenente il gruppo -COOH al quale si dà il nome dell'alcano in cui la desinenza **-o** è sostituita con **-oico**



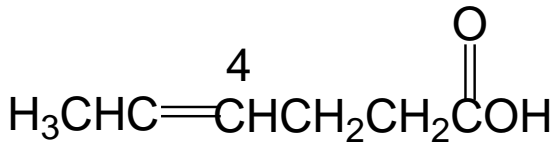
acido metanoico
acido formico



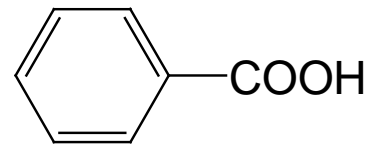
acido etanoico
acido acetico



acido 4-metilesanoico



acido 4-esenoico



acido benzoico

Acidi bicarbossilici



ossalico



malonico



succinico



glutarico

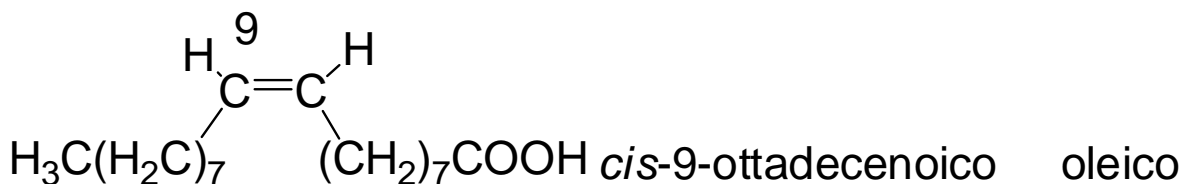


adipico

acido
etandioico

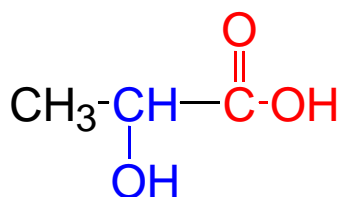
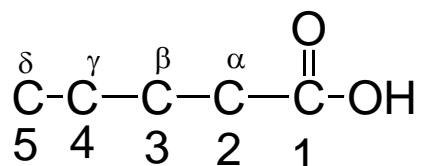
Alcuni acidi carbossilici alifatici

Struttura	IUPAC acido	Nome comune acido
HCOOH	metanoico	formico
CH ₃ COOH	etanoico	acetico
CH ₃ CH ₂ COOH	propanoico	propionico
CH ₃ (CH ₂) ₂ COOH	butanoico	butirrico
CH ₃ (CH ₂) ₃ COOH	pentanoico	valerianico
CH ₃ (CH ₂) ₄ COOH	esanoico	caproico
CH ₃ (CH ₂) ₆ COOH	ottanoico	caprilico
CH ₃ (CH ₂) ₈ COOH	decanoico	caprico
CH ₃ (CH ₂) ₁₀ COOH	dodecanoico	laurico
CH ₃ (CH ₂) ₁₂ COOH	tetradecanoico	miristico
CH ₃ (CH ₂) ₁₄ COOH	esadecanoico	palmitico
CH ₃ (CH ₂) ₁₆ COOH	ottadecanoico	stearico
CH ₃ (CH ₂) ₁₈ COOH	eicosanoico	arachidico



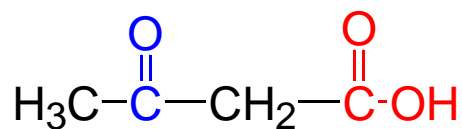
Acidi con un ulteriore gruppo funzionale

Quando si usano i nomi comuni si aggiungono spesso le lettere greche α , β , γ , δ , per indicare la posizione dei sostituenti

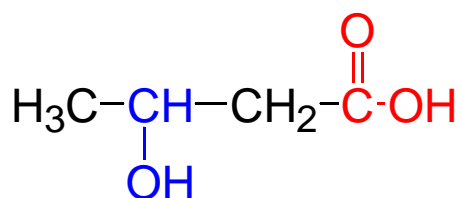


acido α -idrossipropionico

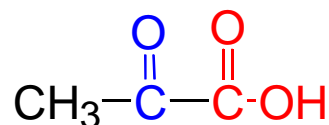
acido lattico



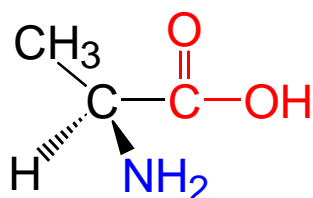
β -cheto acido
acido β -ossobutirrico



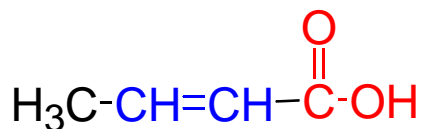
acido β -idrossibutirrico



α -cheto acido
acido α -ossopropionico

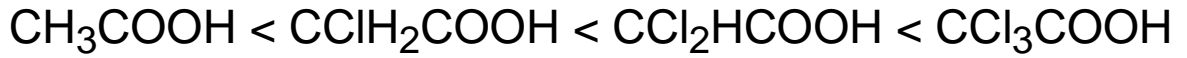


acido α -amminopropionico
alanina



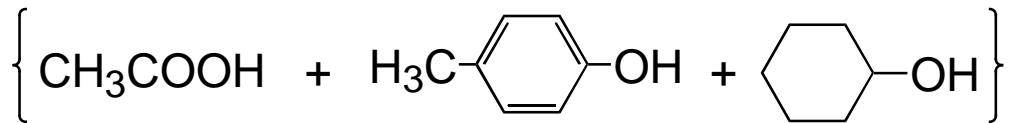
acido α,β -insaturo
acido 2-butenoico

Acidità degli acidi carbossilici



acido	acetico	cloroacetico	dicloroacetico	tricloroacetico
pKa	4,76	2,86	1,48	0,70

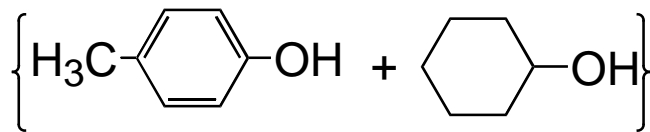
acidi carbossilici (pK_a 4-5) > fenoli (pK_a 9-10) > alcoli (pK_a 16-18)



miscela in etere etilico

trattamento con soluzione acquosa di NaHCO_3

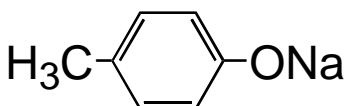
etere etilico



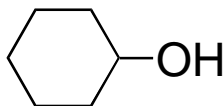
sol. NaHCO_3
 CH_3COONa

trattamento con soluzione acquosa di NaOH

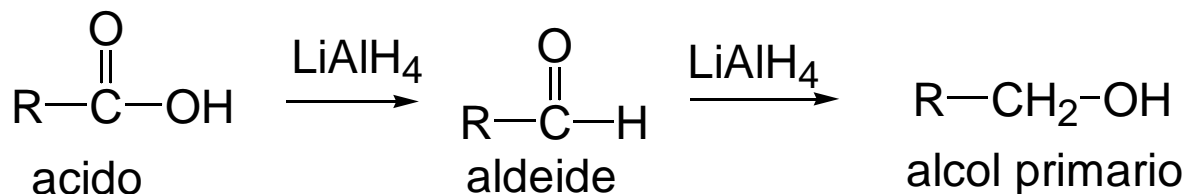
sol. di NaOH



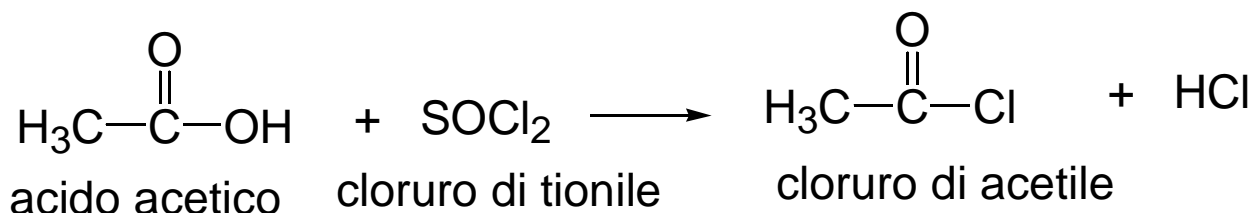
etere etilico



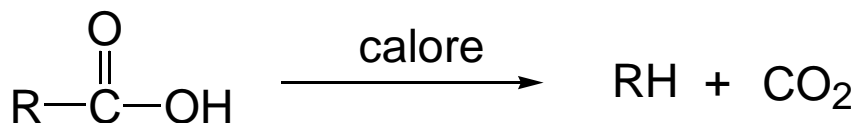
Riduzione degli acidi carbossilici



Formazione dei cloruri degli acidi

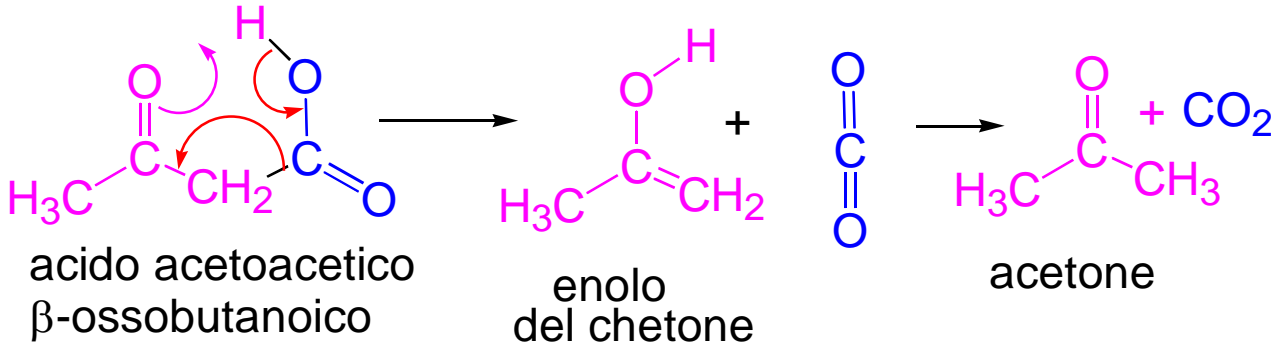


Decarbossilazione degli acidi carbossilici

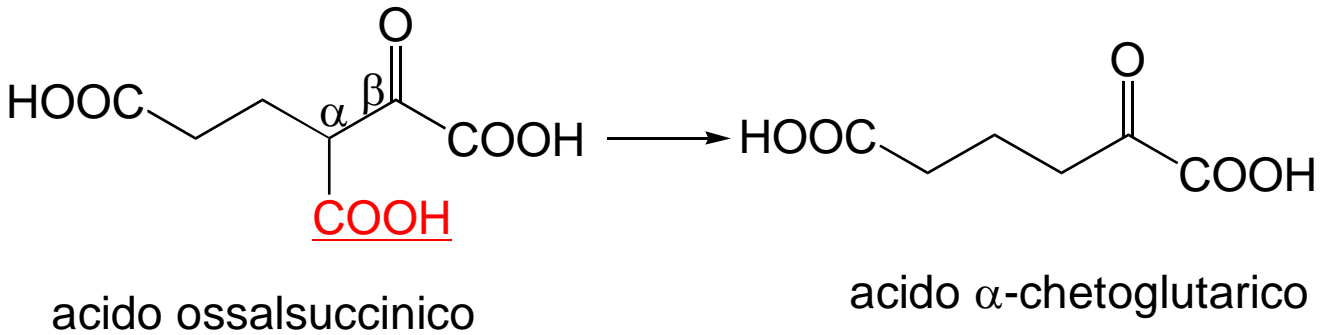


I β -chetoacidi e gli acidi β -dicarbossilici decarbossilano velocemente perchè i riarrangiamenti elettronici avvengono attraverso uno stato di transizione ciclico a sei termini

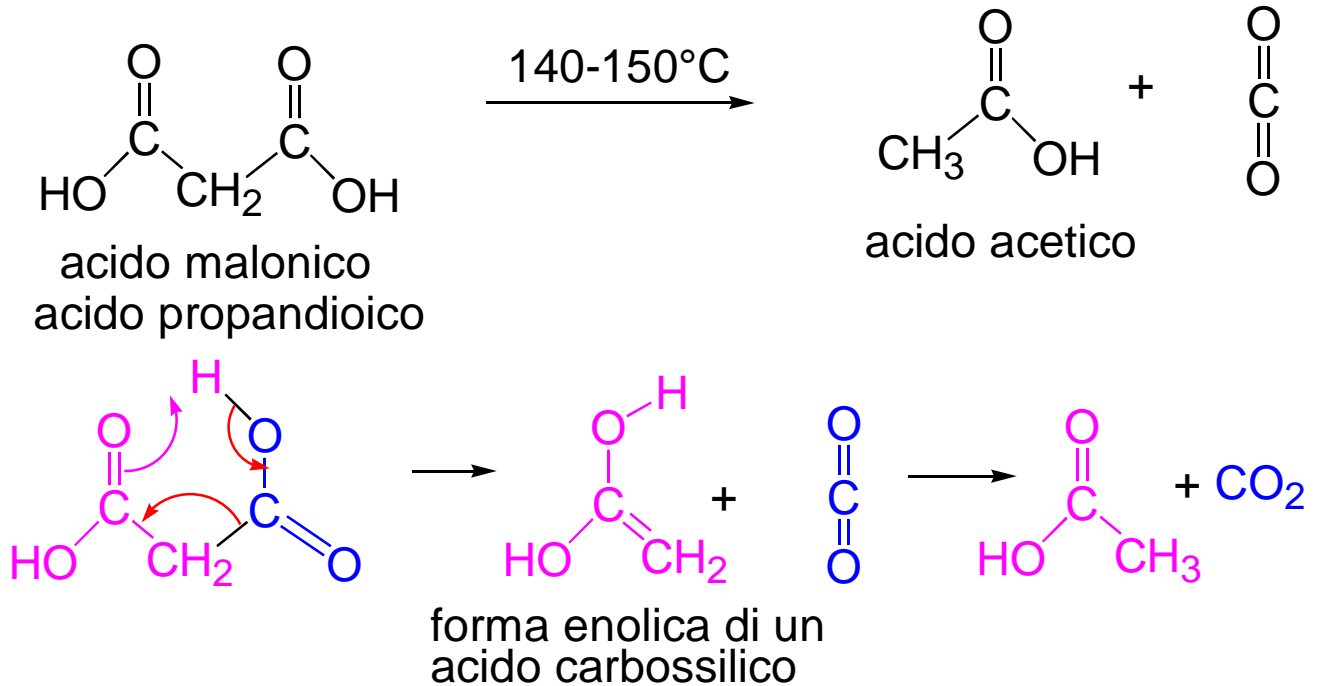
Decarbossilazione di β -chetoacidi



Ciclo degli acidi tricarbossilici (TCA) Krebs

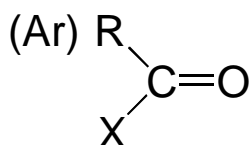


Decarbossilazione degli acidi β -dicarbossilici



Derivati degli acidi carbossilici

Per sostituzione dell'ossidrile del carbossile si ottengono vari derivati degli acidi carbossilici, noti come derivati **acilici** essendo il gruppo **(Ar) R-C=O** detto **gruppo acilico**



X= OH **acidi carbossilici**

X= OR **esteri**

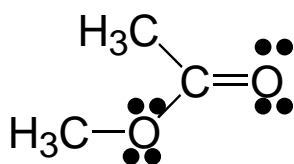
X= -NH₂, NHR, NRR'; **ammidi**

X= OCOR' **anidridi**

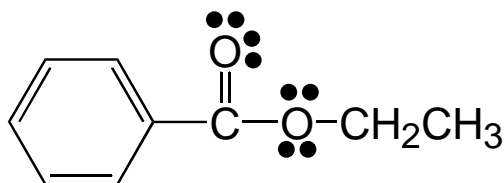
X= alogeni; **alogenuri acilici**

Esteri

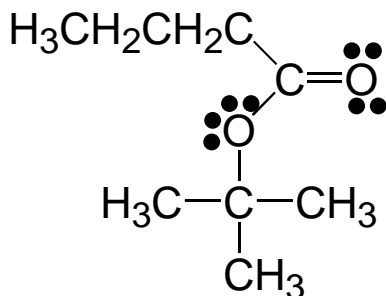
la nomenclatura fa uso di due termini, **per indicare l'acido** si sostituisce la desinenza **-oico** o **-ico** con **-ato** per la parte alcolica si usa il nome del residuo alifatico corrispondente all'alcol



etanoato di metile
acetato di metile



benzoato di etile



propanoato di *terz*-butile