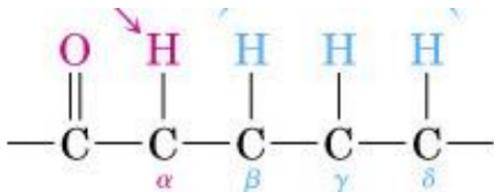


Reazione relative ai carboni in posizione α rispetto al carbonile ed ai loro H

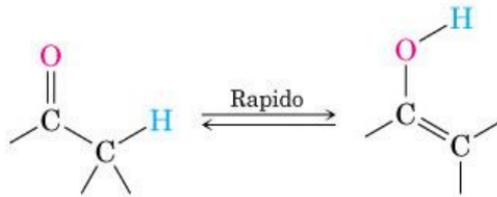
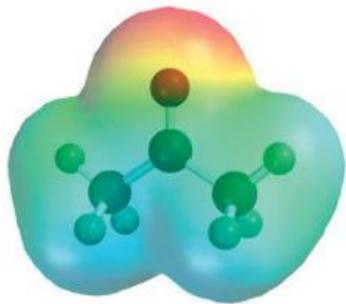
- Tautomeria cheto-enolica



Tautomeria cheto-enolica

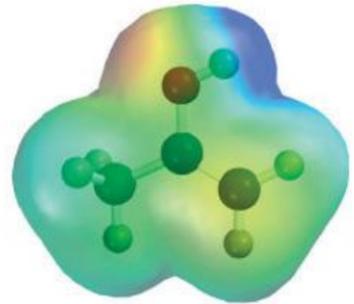
- **Tautomeria:** particolare forma di isomeria tra *tautomeri*
- Nella maggior parte dei casi la tautomerizzazione comporta un trasferimento di un protone o di atomo di idrogeno, accompagnata dallo scambio di un legame covalente singolo con uno doppio adiacente: si parla in questo caso di *tautomeria prototropica*

Tautomeria cheto-enolica

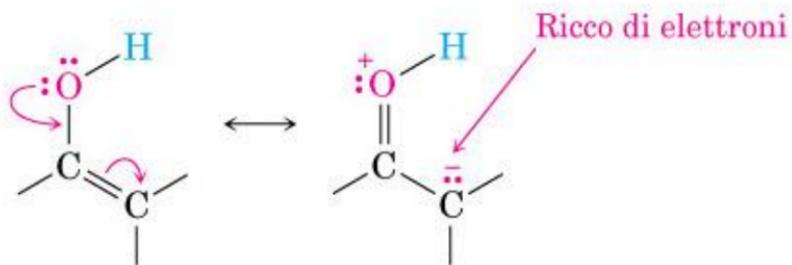


Tautomero chetonico

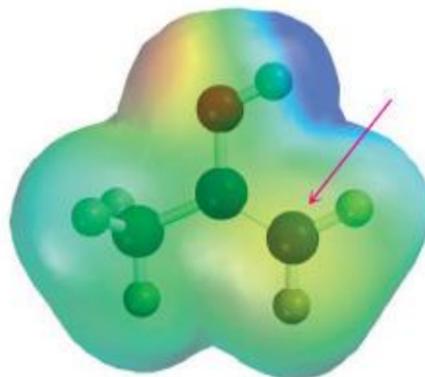
Tautomero enolico



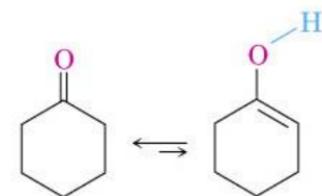
La struttura di risonanza della forma enolica dimostra la reattività del carbonio adiacente al carbonile, elettrone ricco



Tautomero enolico



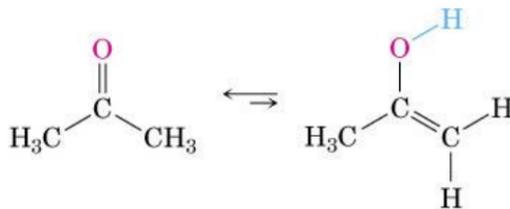
Tautomeria cheto-enolica



99.999 9%

0.000 1%

Cicloesaneone



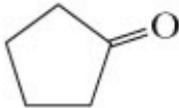
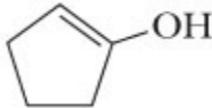
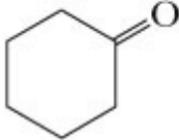
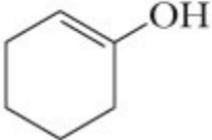
99.999 999 9%

0.000 000 1%

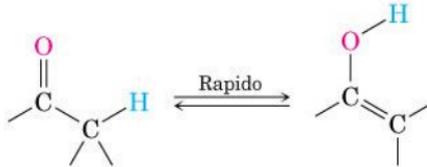
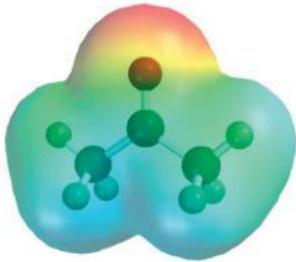
Acetone

La posizione dell'equilibrio dipende dalla specifica struttura del chetone/aldeide

Tabella 16.6 Posizione dell'equilibrio cheto-enolico per alcune aldeidi e chetoni semplici *

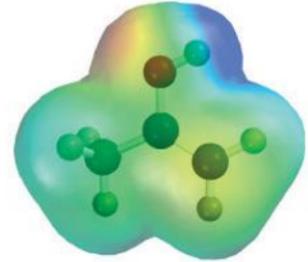
Forma chetonica	Forma enolica	% di enolo all'equilibrio
$\text{CH}_3\overset{\text{O}}{\parallel}\text{CH} \rightleftharpoons \text{CH}_2=\overset{\text{OH}}{\text{C}}\text{H}$		6×10^{-5}
$\text{CH}_3\overset{\text{O}}{\parallel}\text{CCH}_3 \rightleftharpoons \text{CH}_3\overset{\text{OH}}{\text{C}}=\text{CH}_2$		6×10^{-7}
 \rightleftharpoons 		1×10^{-6}
 \rightleftharpoons 		4×10^{-5}

Tautomeria cheto-enolica



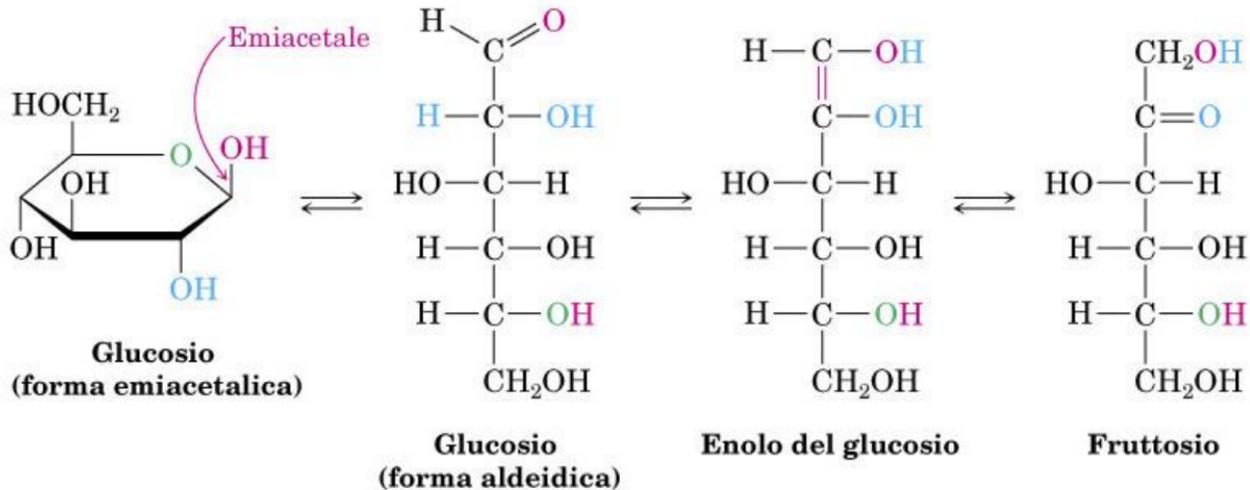
Tautomero chetonico

Tautomero enolico



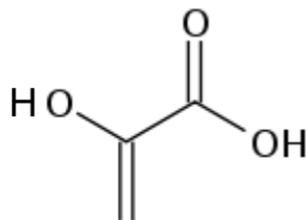
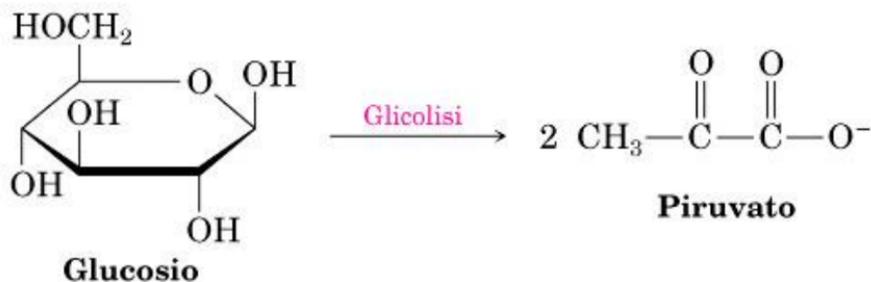
La velocità con cui si raggiunge l'equilibrio può essere aumentata sia mediante catalisi acida che catalisi basica

Tautomeria cheto-enolica negli zuccheri



Glucosio e fruttosio sono in equilibrio
tramite la loro forma enolica comune

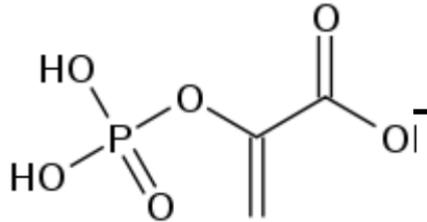
Importanza biologica e biochimica: equilibrio cheto-enolico dell'acido piruvico



Forma enolica dell'acido piruvico

Fosfoenolpiruvato:

Sale del monoestere fosforico della forma enolica dell'acido piruvico



Coinvolto nella glicolisi