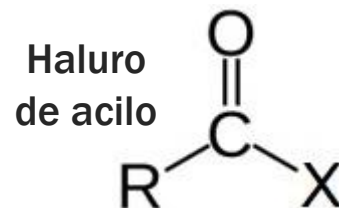
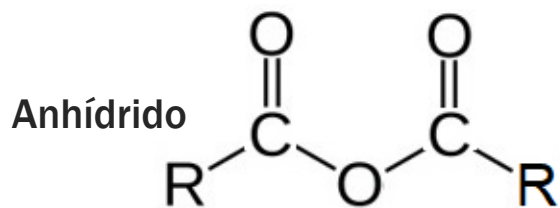
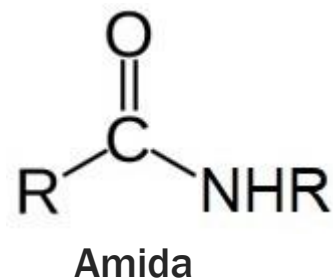
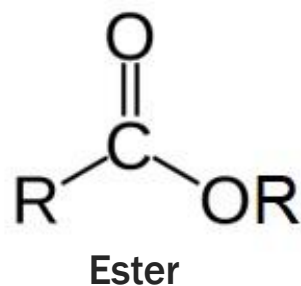
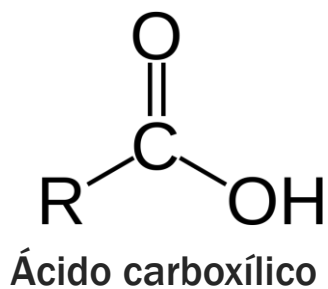
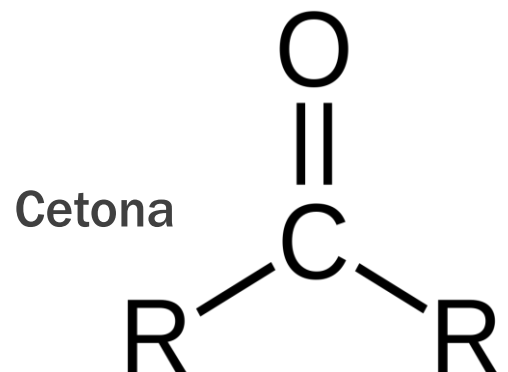
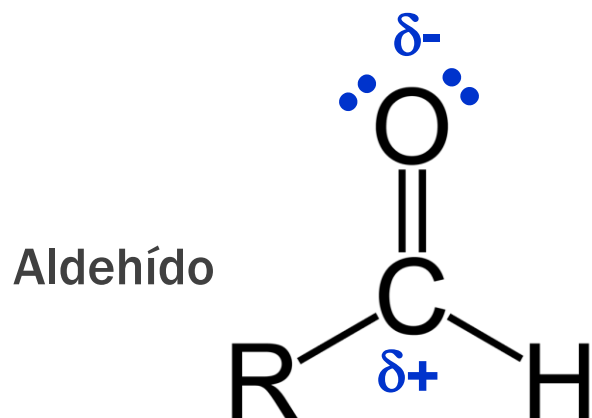


ALDEHIDOS Y CETONAS



Prof. Ulises Urzúa
DOBC - Facultad de Medicina,
Universidad de Chile

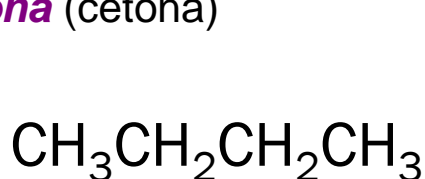
Aldehídos y cetonas - estructura general



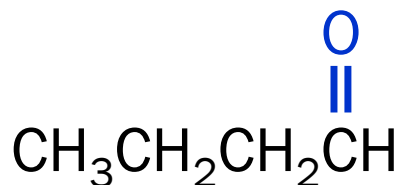
Aldehidos y cetonas - Nomenclatura

IUPAC

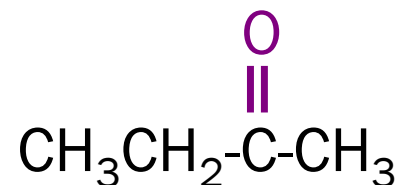
- Se identifica la cadena hidrocarbonada mas larga, usando los sufijos **-al** (aldehído) y **-ona** (cetona)



Butano

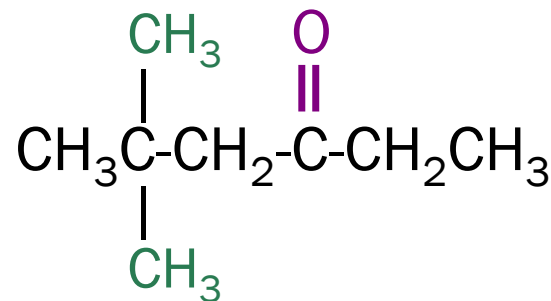
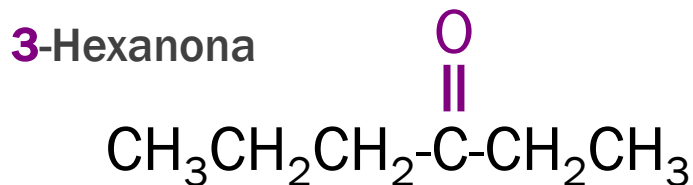
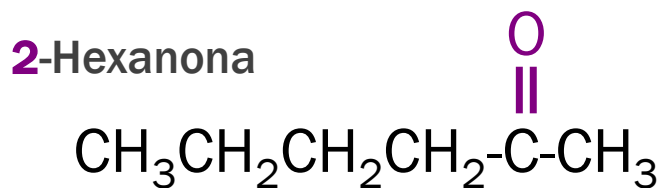


Butanal

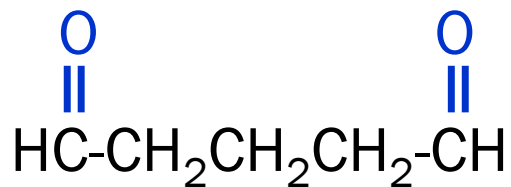


Butanona

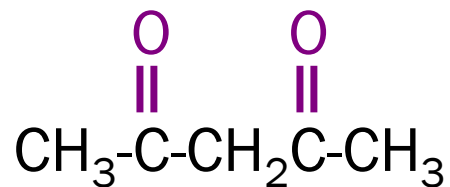
- En cetonas de 5 o mas C, se indica el número mas bajo posible para localizar el grupo carbonilo.



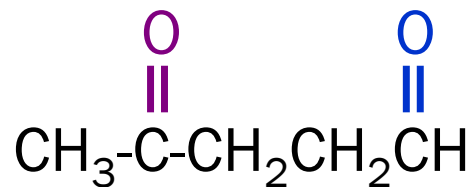
5,5-dimetil-3-Hexanona



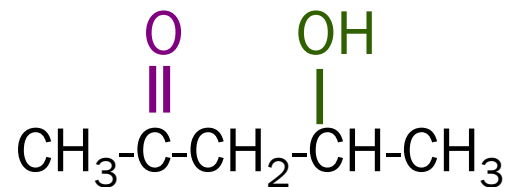
1,5-pentanodial



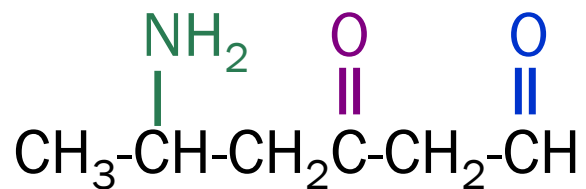
2,4-Pentanodiona



4-oxopentanal

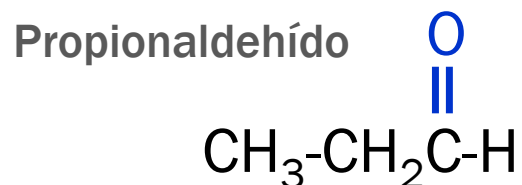
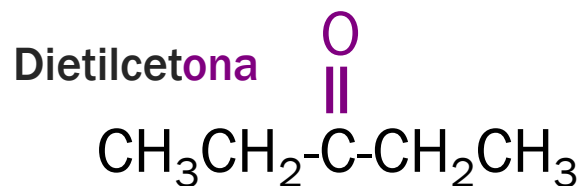
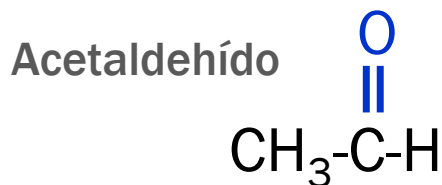
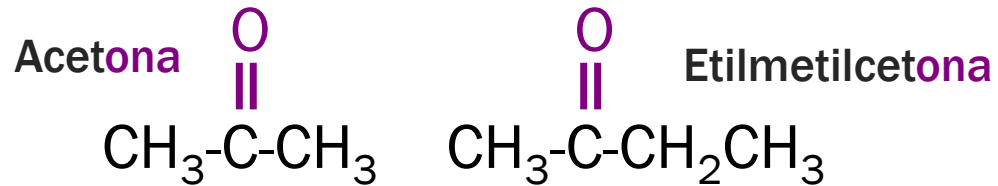
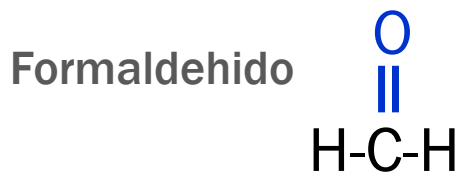


4-hidroxi-2-pentanona

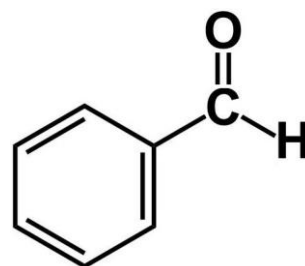


5-amino-3-oxohexanal

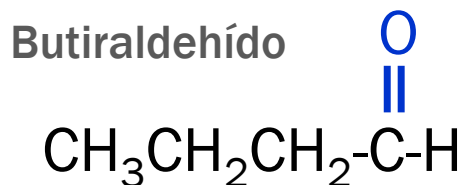
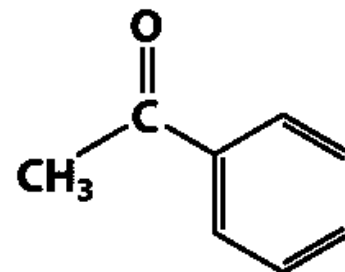
Aldehídos y cetonas - Nomenclatura



Benzaldehído



Acetofenona

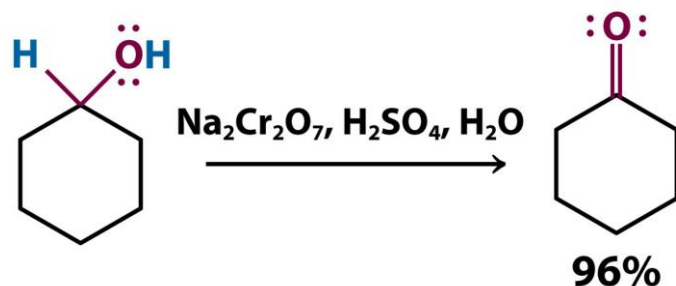


Puntos de ebullición

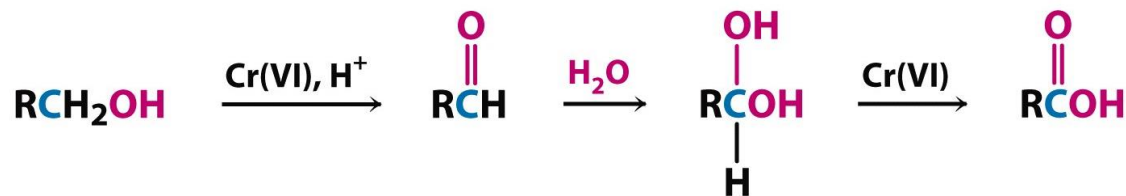
| Compuesto | PM | Ebullición (°C) |
|---|----|-----------------|
| CH ₃ CH ₃ | 30 | -89 |
| H CHO | 30 | -21 |
| CH ₃ OH | 32 | 65 |
| CH ₃ CH ₂ CH ₂ CH ₃ | 58 | -1 |
| CH ₃ CH ₂ CHO | 58 | 49 |
| CH ₃ (CO)CH ₃ | 58 | 56 |
| CH ₃ CH ₂ CH ₂ OH | 60 | 97 |

Preparación de aldehídos y cetonas

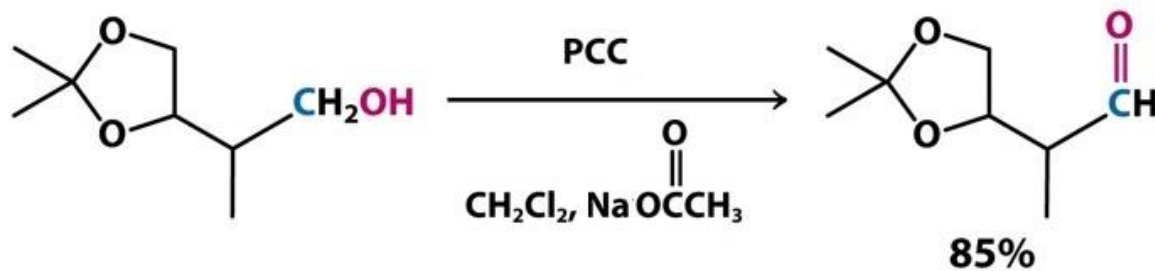
Oxidación de alcohol **secundario**



Oxidación de alcohol **primario**

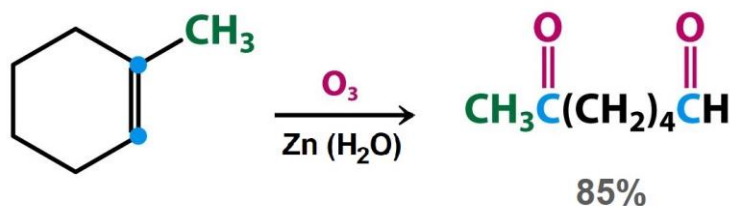
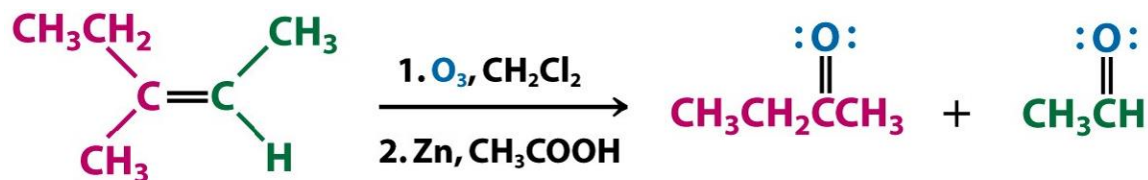


Oxidación de alcohol **primario** con PCC
(Clorocromato de Piridinio)

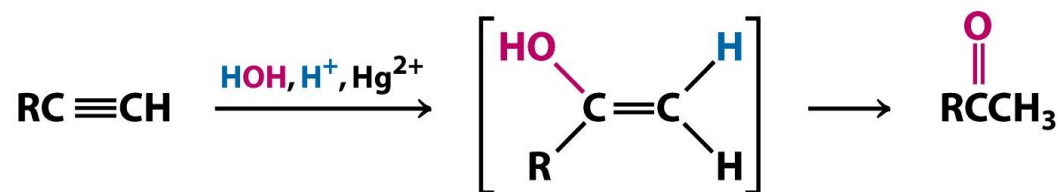


Preparación de aldehídos y cetonas

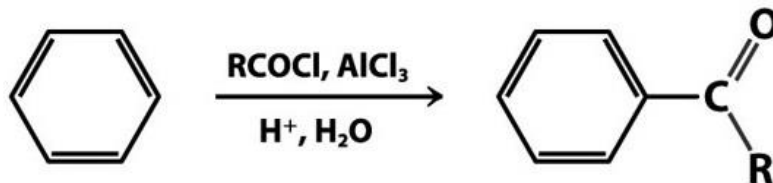
Ozonólisis
de alquenos



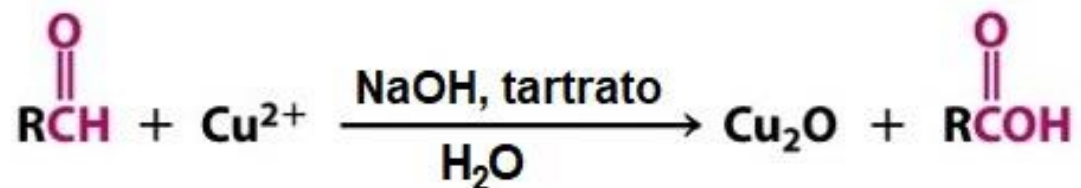
Hidratación
de alquinos



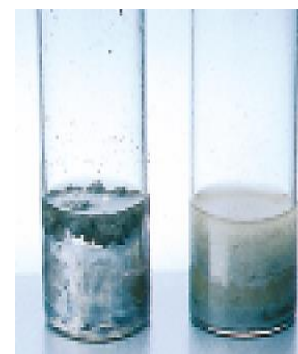
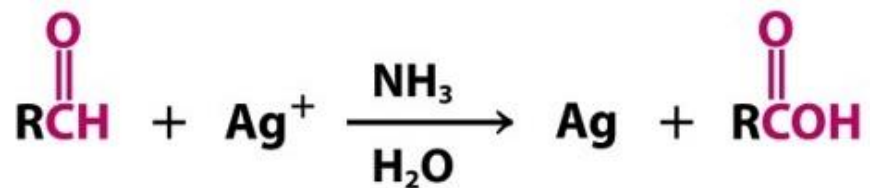
Acilación de
Friedel-Crafts



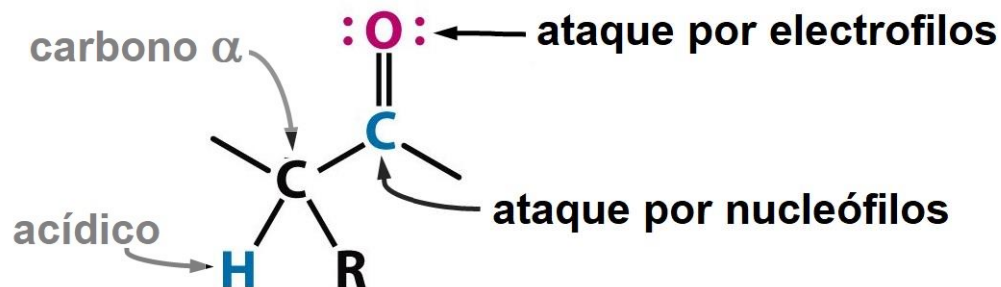
Pruebas de Fehling y Benedict



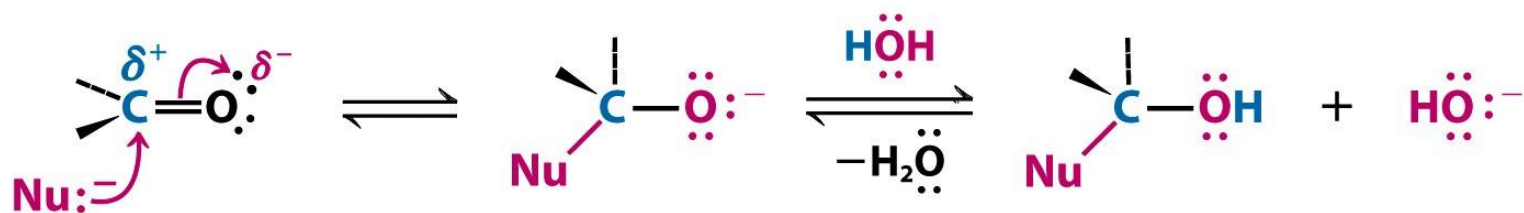
Prueba de Tollens



Reacciones de aldehídos y cetonas

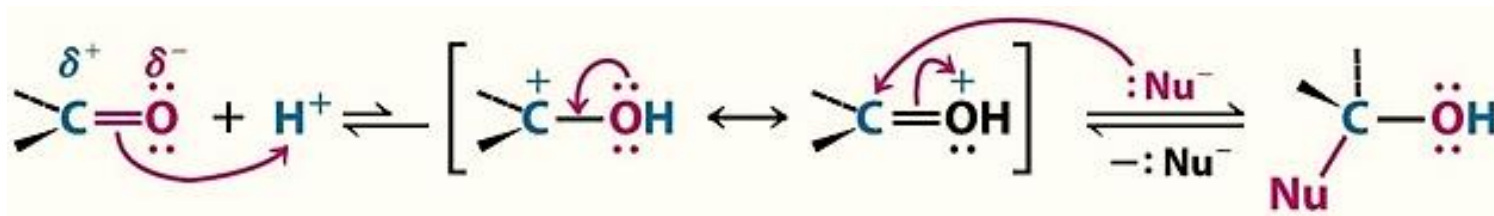


Paso 1: Adición nucleofílica



Paso 2: protonación

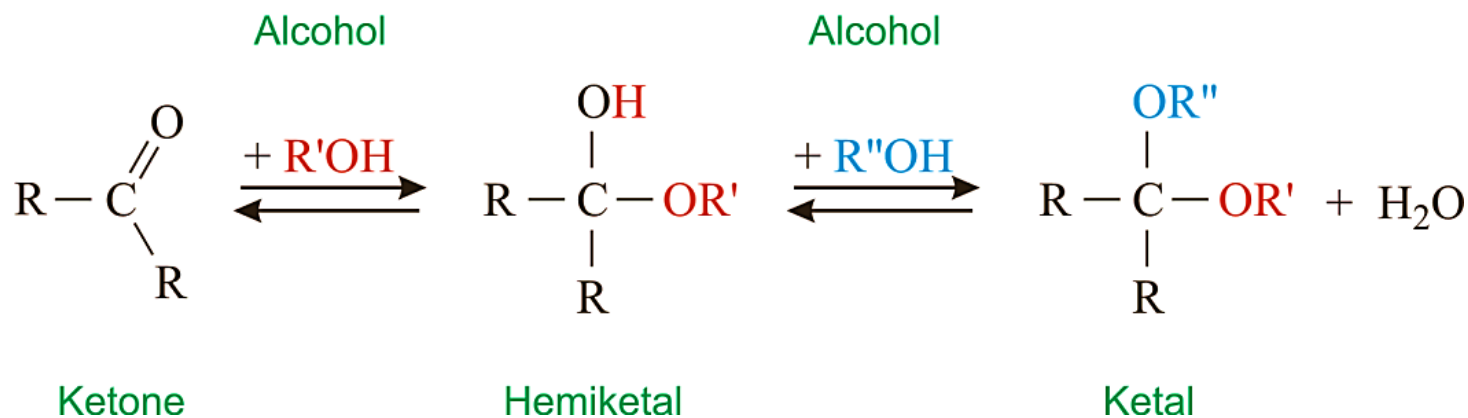
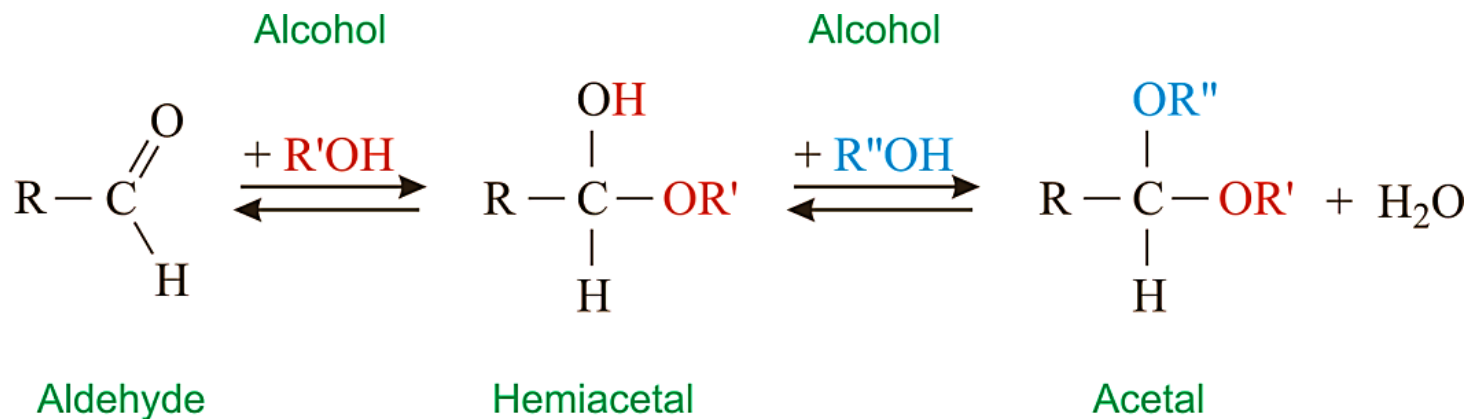
Paso 1: Protonación



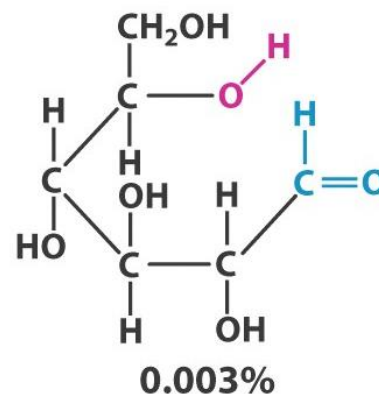
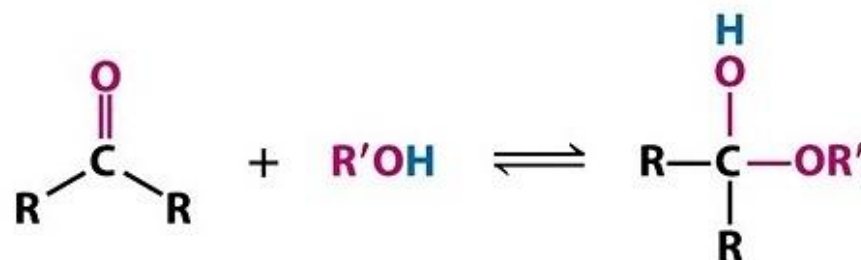
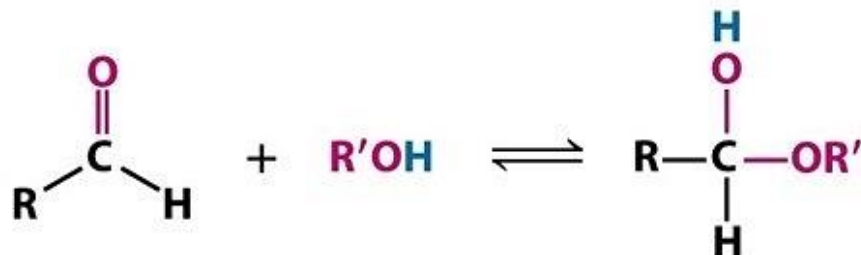
Paso 2: Adición nucleofílica

Reacciones de aldehídos y cetonas

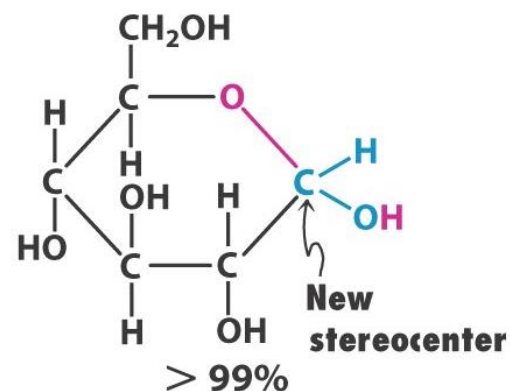
Formación de un hemiacetal/hemiacetal y de un acetal/cetal



Formación de hemiacetal/hemiacetal



Aldehyde form



Cyclic hemiacetal
(Two stereoisomers)

Bibliografía

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Block E zócalo

GRACIAS !