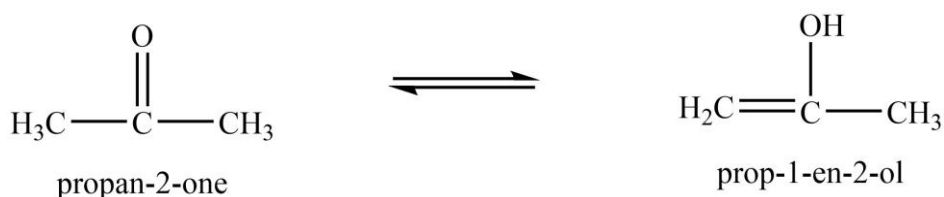


❖ Tautomerism

The phenomenon of tautomerism may simply be defined as the fast interconversion of structural isomers (constitutional isomers) of chemical compounds.

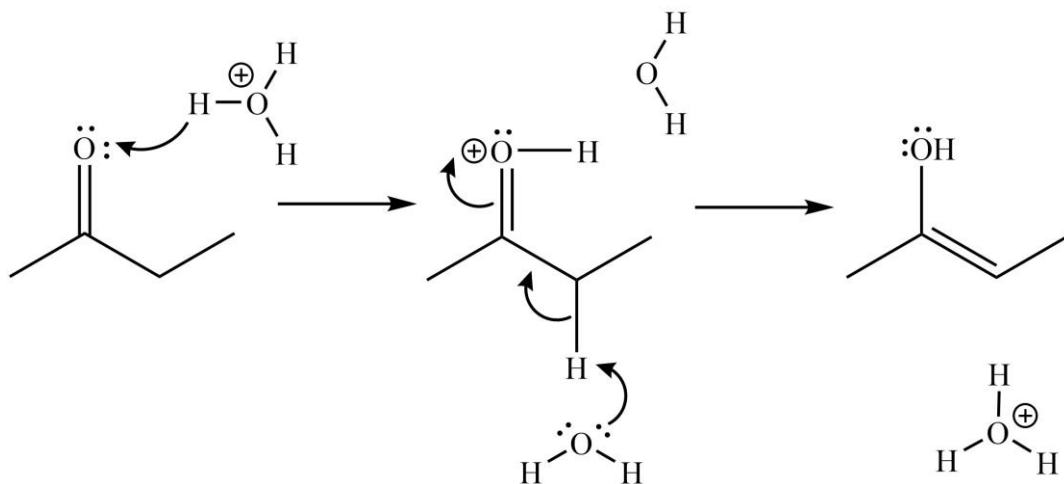
The phenomenon of tautomerism is also called as “desmotropism”. The chemical reaction interconverting the two is called tautomerization. One should not be confused with tautomers at the depictions of 'contributing structures' in typical resonance phenomenon. Tautomers are absolutely different chemical species and can be recognized as such by their distinguished spectroscopic profile, whereas resonating structures are nothing but convenient portrayals and do not have physical meaning. One of the most common examples of tautomerism is the interconversion of the keto- and enol forms of an organic compound.



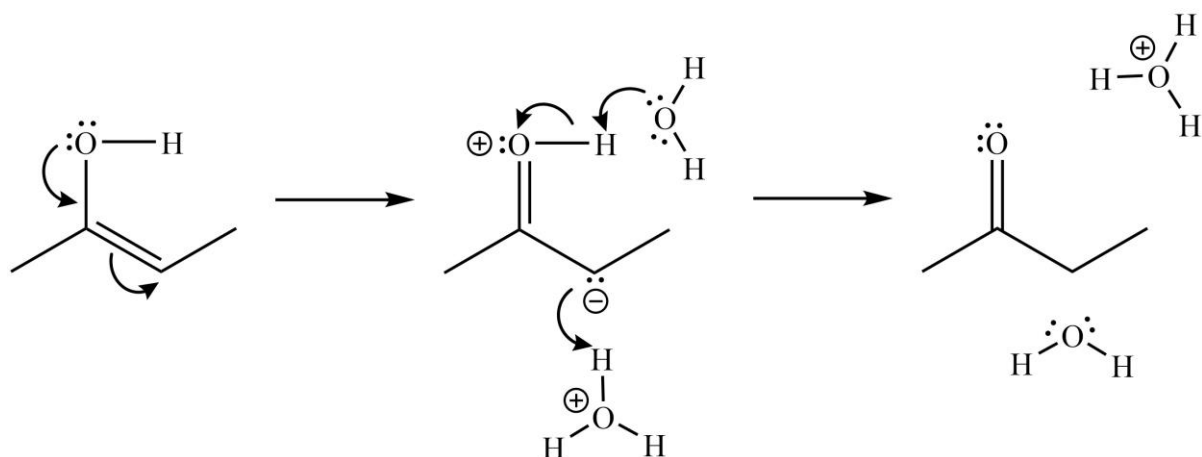
It is also worthy to mention before we discuss the mechanism involved that the phenomenon of tautomerism commonly results in the relocation of a proton.

Mechanism: The phenomenon of tautomerism can occur in the acidic as well as in the basic medium as discussed below.

i) *In acidic medium:* The most positive species in acidic medium is H^+ ions and the most negative species is the water molecule itself. Therefore, the following mechanism is proposed for keto- to enol conversion.



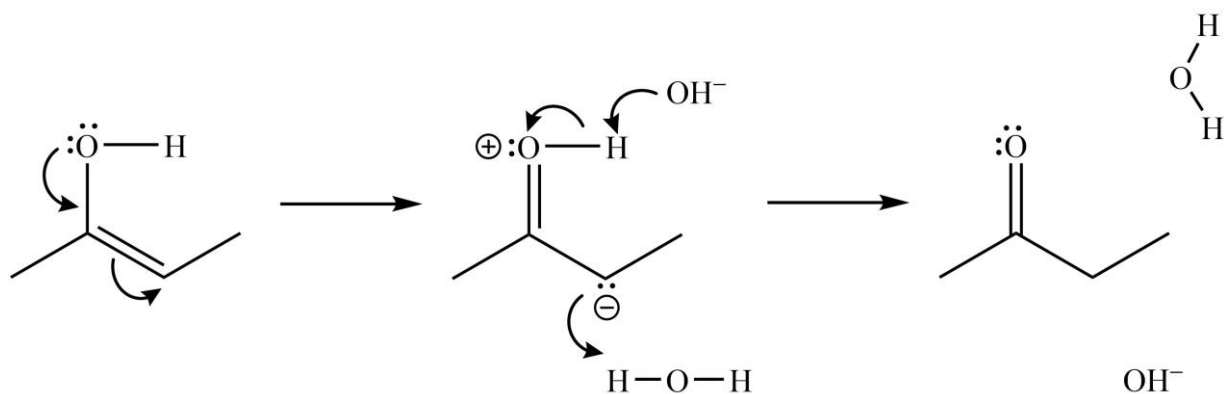
Similarly, the mechanism responsible for enol- to keto conversion is can also be proposed as given below.



ii) *In basic medium:* The most positive species in a basic medium is H_2O ions and the most negative species is the hydroxyl ion. Therefore, the following mechanism is proposed for keto- to enol conversion.



Similarly, the mechanism responsible for enol- to keto conversion is can also be proposed as given below.



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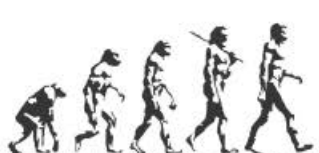
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A TEXTBOOK OF ORGANIC CHEMISTRY

Volume I

MANDEEP DALAL



First Edition

DALAL INSTITUTE

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